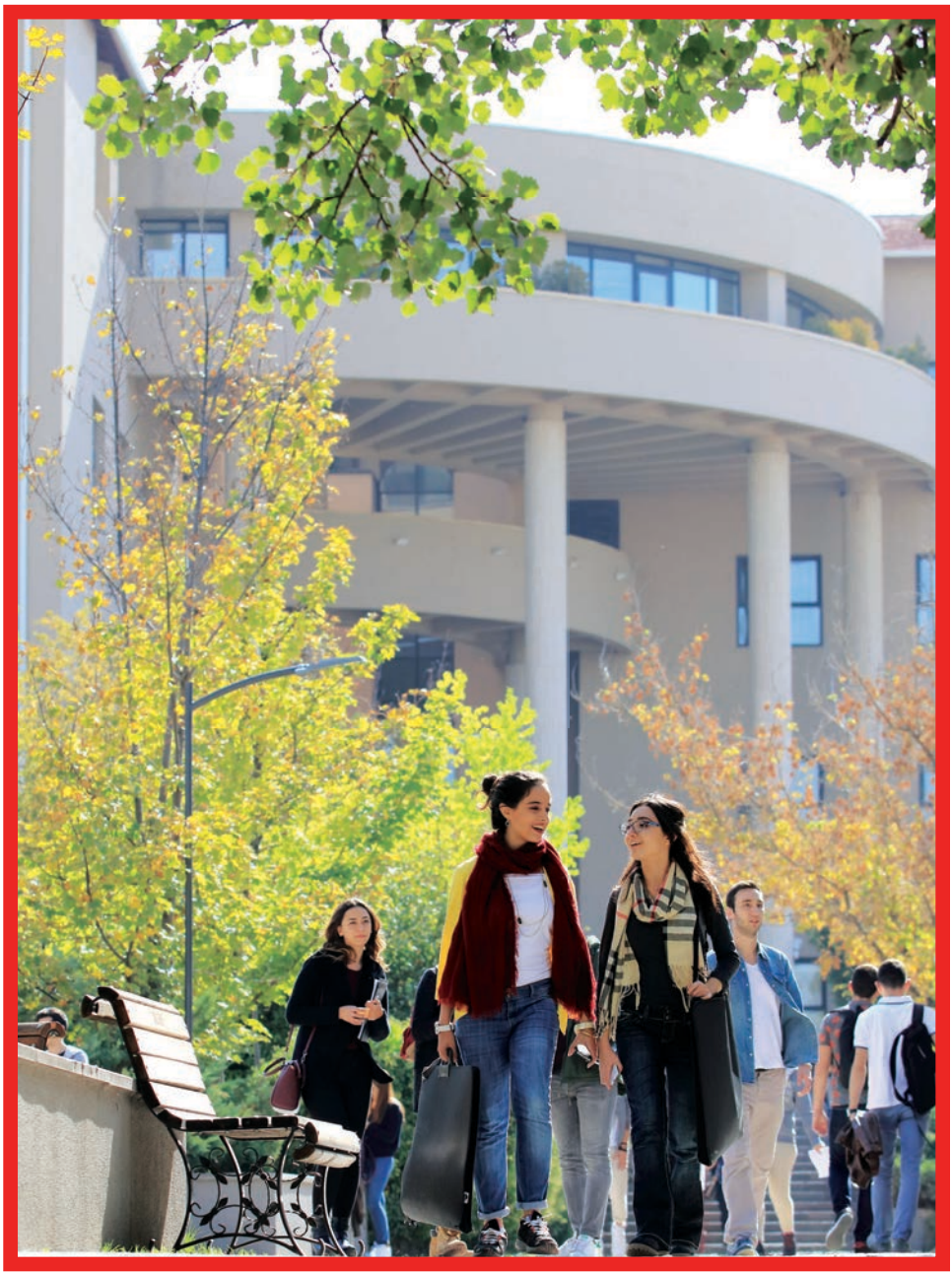
Bilkent University

Academic Programs
2016-2017



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Bilkent University

Academic Programs
2016 - 2017

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For the up-to-date version, please refer to the online catalog at *http://catalog.bilkent.edu.tr/current*, which is updated daily.
Not every course listed in this catalog is offered this year.

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ACADEMIC CALENDAR 2016 - 2017

Autumn Semester

29 July - 23 August 2016	Course pre-registration
15 - 20 August 2016	Registration for undergraduate students admitted in 2016
19 August 2016	External transfer applications deadline
30 August 2016	Victory Day (Holiday)
31 August - 2 September 2016	Registration for new international undergraduate students admitted in 2016
3 September 2016	COPE-1 examination (10:00)
3 September 2016	COPE-1 examination results announced (18:00)
5 September 2016	COPE-2 examination (09:30)
5 September 2016	Minor program and second major applications deadline
5 - 7 September 2016	Registration for graduate students admitted in 2016
6 - 8 September 2016	"Introduction to Academic Life" program for all new students admitted in 2016
8 September 2016	COPE-2 examination results announced
9 September 2016	Tuition due for all continuing students
9 September 2016	Last day for leave-of-absence applications
19 September 2016	Exchange students' course registration
21 - 22 September 2016	Course registration
23 September 2016	Classes begin
29 September 2016	Last day to add/drop courses
28 October 2016	No classes
29 October 2016	Republic Day (Holiday)
10 November 2016	Commemoration of Atatürk Day
2 December 2016	Withdraw deadline (17:30)
9 Dec. 2016 - 2 Jan. 2017	Course pre-registration
30 December 2016	Last day of classes
30 December 2016	FZ grade submission deadline (23:00)
30 December 2016	FZ grades announced (23:00)
1 January 2017	New Year's Day (Holiday)
2 - 13 January 2017	Final examinations
16 January 2017	Minor program and second major applications deadline
18 January 2017	Grade submission deadline (17:30)
18 January 2017	Grades announced (17:30)

Spring Semester

19 January 2017	Internal transfer applications deadline
30 January 2017	Tuition due for all continuing students
30 January 2017	Last day for leave-of-absence applications
30 - 31 January 2017	Registration for new graduate students
31 January 2017	Exchange students' course registration
2 - 3 February 2017	Course registration
6 February 2017	Classes begin
10 February 2017	Last day to add/drop courses
3 April 2017	Bilkent Day
14 April 2017	Withdraw deadline (17:30)
23 April 2017	National Sovereignty and Children's Day (Holiday)
1 May 2017	Labor and Solidarity Day (Holiday)
15 May 2017	Last day of classes
15 May 2017	FZ grade submission deadline (23:00)
15 May 2017	FZ grades announced (23:00)
17 - 30 May 2017	Final examinations
19 May 2017	Commemoration of Atatürk, Youth and Sports Day (Holiday)
5 June 2017	Grade submission deadline (17:30)
5 June 2017	Grades announced (17:30)
16 June 2017	Graduation Ceremony

Summer School

8 - 9 June 2017	Course registration
9 June 2017	Course drop deadline (23:59)
12 June 2017	Classes begin
14 June 2017	Course add deadline (17:30)
25 - 27 June 2017	Feast of Ramadan (Holiday)
3 July 2017	Internal transfer applications deadline
18 July 2017	Withdraw deadline (17:30)
1 August 2017	Last day of classes
1 August 2017	FZ grade submission deadline (20:00)
1 August 2017	FZ grades announced (20:00)
2 - 6 August 2017	Final examinations
9 August 2017	Grade submission deadline (17:30)
9 August 2017	Grades announced (17:30)

HISTORICAL BACKGROUND

Bilkent University was founded on October 20, 1984 by İhsan Doğramacı (1915 - 2010) through the joint resolution of the İhsan Doğramacı Education Foundation, the İhsan Doğramacı Science and Research Foundation, and the İhsan Doğramacı Health Foundation. The aim was to create a center of excellence in higher education and research. The name "Bilkent" exemplifies the founder's aim, since it is an acronym of *bilim kenti,* Turkish for "city of science and knowledge." The university is located in Turkey's capital city of Ankara.

The founder, himself an academic, had earlier contributed to the establishment of numerous public institutions of higher learning and served as rector of Ankara University, as chairman of the Board of Trustees of Middle East Technical University and as founder and first rector of Hacettepe University. It had long been his objective to establish a private, non-profit university distinguished by its high quality education and research. During the time he spent at Harvard and Washington universities in the United States he had observed the advantages of independently endowed non-profit research universities that serve the public through higher education. With these in mind he advocated for decades for the Turkish legal system to allow such institutions, and when this dream finally materialized, he established Bilkent University along the same lines.

Preparations for Bilkent University had begun as early as 1967, with the purchase of a large tract of land to the west of Ankara. In the late 1970s and early 1980s the above-mentioned foundations began construction of the buildings which now house administrative offices, the Faculty of Engineering, and the library. Bilkent University Library is the most extensive academic library in the country. Construction of residences for academic staff, cafeterias, student dormitories, the Student Union building, and various academic buildings followed in rapid succession.

Bilkent University admitted its first students in 1986. That year there were 386 undergraduate and graduate students. Currently there are over 13,000 students in nine faculties, two four-year applied schools, the School of English Language, and three graduate schools. Among them are international students and exchange students from 62 countries. Around 64% of the student body benefit from a variety of scholarships.

From the outset, the design of the university structure provided for student union representatives to be voting members of the administrative committees of various schools, as well as of the University Senate. The practice of student evaluation of courses and instructors, at the time not a common practice in Turkey, was instituted.

In an effort to promote the enrichment of teaching and research programs, Bilkent University has entered into collaborative projects and exchange programs with many universities; the complete list being provided at: **http://exchange.bilkent.edu.tr/exchange_partners.html**

To meet the expanding needs of the university, construction has continued throughout the years since the admission of the first students. Buildings and facilities today include the faculties and the departments, research centers, modern classrooms, state-of-the-art science and engineering laboratories, art studios, the Computer Center, the Health Center, gymnasiums and a semi-olympic indoor swimming pool, dormitories, faculty housing, cafeterias and restaurants, the Bilkent Concert Hall for Bilkent Symphony Orchestra, the Odeon outdoor auditorium which hosts 4,000 people, an elementary school, a secondary school, a preschool and nursery.

The faculty is comprised of academic staff from over 40 different countries. Most of them were working in prominent universities in North America and Europe when they received offers from Bilkent University. According to *ISI Citation Indexes*, Bilkent ranks high among universities in Turkey in the number of published papers per faculty member.

Bilkent University ranked 76th in the **Times Higher Education 150 Under 50** University Rankings and 45th in the **Times Higher Education Asia University Rankings** (2016).

With world-renowned scholars among its faculty and top-notch facilities throughout its campus, Bilkent continues to attract many of Turkey's brightest students and is proud of its 40,000 alumni pursuing successful careers in five continents.

MISSION

Bilkent University was founded to provide an environment for learning and intellectual growth encompassing the sciences, technology, humanities and the arts, to serve human welfare and foster peace on earth. Education at Bilkent is not simply a means to obtain a vocation, a career. Instead, it endeavors to nurture students in the way of thinking and of learning to learn.

With its diverse educational programs, scientific and scholarly research endeavors, and artistic and cultural activities, Bilkent University aims to help students/individuals develop themselves as critical, analytical and independent thinkers and life-long learners, so that they may become the competent, creative, broad-minded, ethical and socially responsible leaders of tomorrow, who will contribute to the advancement of humanity.

The educational philosophy rests on the premise that those who produce new knowledge also have the best potential to impart it. Scholarly research at Bilkent extends across a wide spectrum. From nanoscience and nanotechnology to political science, from electronics to economics, from fine arts to management and industrial engineering, from philosophy to computer engineering, and in many other areas of science, letters and the performing arts, our academic staff and resources provide a uniquely integrated environment.

NON-DISCRIMINATION STATEMENT

Bilkent University hires academic and administrative staff and admits students without regard to gender identity, race, color, age, national or ethnic origin or sexual orientation, to all the rights, privileges, programs, and activities generally accorded or made available to staff and students at the university. It does not discriminate on the basis of gender identity, race, color, age, national or ethnic origin in administration of its educational policies, admissions policies, scholarship and loan programs, or athletic and other university-administered programs.

DEGREE PROGRAMS

Academic Year

Each academic year consists of two 16-week semesters, Fall and Spring, including the final examination period. In addition, an eight-week summer semester is offered each year. The academic calendar for 2016-2017 is given at the beginning of this catalog.

Undergraduate Programs

The bachelor's degree is awarded to students who successfully complete an eight-semester course of study (at least 120 credit units or 240 ECTS).

Students must fulfill all the degree requirements determined by the Senate; at graduation their cumulative grade point average must be 2.00 or higher on a scale of 4.00.

The undergraduate programs are organized in departments within nine faculties and two schools. These faculties and schools are as follows:

- Faculty of Art, Design, and Architecture
- Faculty of Business Administration
- Faculty of Economics, Administrative, and Social Sciences
- Faculty of Education

- Faculty of Engineering
- Faculty of Humanities and Letters
- Faculty of Law
- Faculty of Music and Performing Arts
- Faculty of Science
- School of Applied Languages
- School of Applied Technology and Management

Graduate Schools

Students who have obtained a B.A. or B.S., an M.A. or M.S., or an equivalent degree from a university are eligible to commence studies in the master or doctoral programs.

Graduate programs are administered through the:

- Graduate School of Economics and Social Sciences
- Graduate School of Education
- Graduate School of Engineering and Science

Information on graduate programs is provided in this catalog under the headings of the related departments. Interdisciplinary programs are provided in a separate section.

ADMISSION, FEES, AND ACADEMIC REQUIREMENTS

ADMISSION, TRANSFER STUDENTS, AND REGISTRATION

Language Proficiency

English is the language of teaching at Bilkent University. Applicants are required to provide proof of their proficiency in English. Students whose level of English is insufficient to follow courses are required to enroll in the School of English Language. Those accepted to the Translation and Interpretation department must take, in addition, a Proficiency Examination in French, and those whose level of French is insufficient are required to follow the language program in the Basic French Section of the School of Applied Languages.

Undergraduate Admissions

To begin undergraduate studies at Bilkent, all Turkish citizens (with the exception of those who have completed all of high school abroad) must take the entrance examinations YGS and/or LYS, administered by the national Student Selection and Placement Center (ÖSYM). Applicants to the School of Applied Technology and Management take the YGS only. Applicants to the Fine Arts, Music, and Performing Arts departments must pass the YGS examination. Admission is then granted on the basis of aptitude tests administered by the respective faculties in the summer. Applicants to all other departments take YGS and LYS. Based on the results of these exams, ÖSYM places students according to their preferences.

All international students who want to apply to Bilkent University for an undergraduate program have to apply directly to Bilkent's Office of International Students. Various international and national exams and diplomas are used in evaluating the candidates.

Bilkent University admission requirements can be found at
http://bilkent.edu.tr/bilkent/academic/international/apply.html

An online application form can be found at: **https://stars.bilkent.edu.tr/intapp**

Graduate Admissions

The following are some of the general graduate admission requirements for all departments:

- All applicants are required to take the ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Exam) given by ÖSYM every year.
- International applicants and Turkish applicants residing abroad may submit Graduate Record Examination (GRE), Graduate Management Admission Test (GMAT), or any other written test scores instead of ALES scores upon the approval of the respective Graduate School Executive Board.
- Fluency in written and oral English.

In addition, each department establishes its own criteria for admission; departmental listings include more detailed information. Applications are accepted via the internet at **https://stars.bilkent.edu.tr/gradapp**

Transfer Students

Applicants may transfer to Bilkent University from another university under the following conditions:

- Transfer applications submitted to the Registrar's Office must be completed by the application deadline in August. Each department individually determines the number of transfer students it will accept.
- Credits earned at another university are taken into consideration when determining a transfer student's requirements for graduation from Bilkent according to the Transfer Rules and Regulations.

As English is the language of teaching at Bilkent University, applicants are required to provide proof of their proficiency in English.

Application forms and the list of required documents can be obtained from the Registrar's Office.

Exchange Programs

Bilkent University has exchange programs with several major universities in Europe and around the world. The Student Exchange Program gives Turkish students the opportunity to study abroad while experiencing a different culture. It also exposes visiting students to the culture, art, and history of Turkey.

The principle of reciprocity inherent in the exchange programs makes it possible to send Bilkent University students to the partner universities provided that students from those universities come to Bilkent. Program participants pay the regular tuition fees to their home institution for the semester, and are responsible for additional travel, housing, food, and incidental costs as well as insurance expenses and other minor fees while at the host university. A number of outgoing Erasmus students are granted a monthly stipend from EU funds. Detailed information about Erasmus and other exchange programs may be found at **exchange.bilkent.edu.tr**

Semester Registration

Students are required to register for courses at the beginning of each semester within the time limits announced by the University. Tuition must be paid prior to registration by the deadline announced by the University.

FEES

Fees and Expenses

Fees and expenses for the 2016-2017 academic year are as follows:

Tuition:

Turkish citizens

Admitted before 2016 28,600 TL (8% VAT included)
Admitted in 2016 30,400 TL (8% VAT included)

International Students

Admitted before 2016 13,950 USD (8% VAT included)
Admitted in 2016 14,500 USD (8% VAT included)

Tuition fees are payable in two installments, before the registration dates of the fall and spring semesters. All fees are subject to adjustment each year according to changes in the cost of living.

Campus Housing:

There are Quadruple, Triple, Double, Single and Special (single room with private bath and shared kitchen) rooms available within the dormitories each having different rates. More information about the accommodation alternatives, application process, and prices can be found at **http://bilkent.edu.tr/dormitory**

GRADING AND GRADE POINT AVERAGE

Academic Advisor

At Bilkent University each student is assigned to an academic advisor. The advisor offers counseling services to the student on academic matters, takes an interest in the student's selection of courses and academic progress, and may assist him/her towards satisfactory job placement.

Course Load

For each associate and undergraduate program, there exists a semester "normal course load interval" defined by the relevant department and approved by the Faculty or School Board. The normal course load interval consists of a lower and an upper limit. Upon recommendation of the academic advisor and with the approval of the department chair, the maximum course load of a student in one semester can be at most two more courses over the upper limit of the normal course load of the program. More information can be found in Article 4.2 of the "Academic Regulations for Undergraduate and Associate Degree Programs".

Attendance

Students must attend all lecture, laboratory, and practical sessions, take all examinations, and participate in any activities that the teaching staff may consider appropriate.

Examinations and Assessment

Apart from work conducted throughout the semester, students are usually asked to take a final examination and at least one midterm examination for a course. If a staff member considers it appropriate, practical laboratory work or other such assignments may be assessed as midterm examinations or as a final examination.

Grades are finalized when they are announced via the internet on the date specified in the Academic Calendar. Semester grades for practical studies and other non-lecture courses are determined by an evaluation of the student's overall work and performance throughout the semester.

Grades

The University grading system uses letter grades with pluses and minuses. Letter grades and their grade point equivalents are:

A+	4.00	**B+**	3.30	**C+**	2.30	**D+**	1.30	**F**	0.00
A	4.00	**B**	3.00	**C**	2.00	**D**	1.00	**FX**	0.00
A-	3.70	**B-**	2.70	**C-**	1.70			**FZ**	0.00

Other grades used are S (Satisfactory), U (Unsatisfactory), I (Incomplete), P (In Progress), T (Transfer), and W (Withdraw). These grades do not have grade point equivalents.

S : accorded to students who are successful in non-credit courses.

U : accorded to students who are unsuccessful in non-credit courses.

I : accorded to students who, although otherwise successful, have failed to complete the required assignments for a course due to illness or some other valid reason. Proof of illness or other reason for non-completion must be submitted within two days of the date of the final exam. A student receiving an incomplete grade for any course must make up for the deficiencies within 14 days after the final exam in order to obtain a grade. Otherwise, the grade I automatically becomes FX. At the discretion of the department chair, the period specified above may be extended until the beginning of the following semester.

P : progress, used for multi-semester courses.

T : reflects approved transferred courses from other universities or from an exchange program. A student with a grade of T is exempted from an equivalent number of credits on the condition that the courses are accepted by the department on the recommendation of the department chair and with the approval of the board of the faculty/school. This grade may provide an exemption for a particular course at the program.

W : student has withdrawn from the course before the withdrawal deadline of the respective semester.

A student with extraordinary performance in a course may be granted an A+ grade. However, the number of A+ grades in a given course is limited based on class size: If the class size is less than 25 students, no A+ grades may be given; if the class size is between 25 and 74 students, only one A+ grade may be given; if the class size is between 75 and 124 students, two A+ grades may be given; if the class size is between 125 and 174 students, three A+ grades may be given; if the class size is between 175 and 225 students, four A+ grades may be given; if the class size is more than 225 students, five A+ grades may be given. (The letter grade A+ was instituted beginning with the 2010-2011 academic year.)

Students who have not met the minimum performance and/or attendance requirements to qualify to take the final exam receive an FZ grade before the final exams begin. Failing students who have not shown up at the final exam receive an FX grade instead of an F.

In undergraduate programs, a grade of C or higher (or S for non-credit courses) is a passing grade for the course. Letter grades F, FX, FZ, and U are all failing grades. Grades C-, D+, and D are considered failing grades when the student's Cumulative Grade Point Average (CGPA) is less than 2.00 and conditionally passing grades when the CGPA is 2.00 or higher. For courses ENG 101 and ELS 104, grades C-, D+, and D are considered failing grades regardless of the CGPA.

In graduate programs, in addition to grade S, a grade of C or higher is a passing grade in master's programs and a grade of B or higher is a passing grade in Ph.D. programs. Letter grades lower than C and grade U are failing grades in master's programs and grades lower than B and grade U are failing grades in Ph.D. programs.

Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA)

A student's academic performance is determined at the end of each semester by computing an average of the letter grades he/she has received during that semester. For each course, the grade point equivalent of the letter grade received by the student is multiplied by the credit units for that course; the sum of these products is then divided by the total credit units taken in that semester to yield the Grade Point Average (GPA) for that semester. The Cumulative Grade Point Average (CGPA) is calculated by multiplying the grade point equivalent of the letter grade by the credit units for each course and then dividing the total sum by the total credit units taken in the program.

ACADEMIC STANDING

(applicable to undergraduate students only)

Please see Articles 4.13 to 4.20 of the "Academic Regulations for Undergraduate and Associate Degree Programs".

Honor and High Honor

Students achieving distinction by obtaining a semester GPA of 3.00 to 3.49 while carrying at least a minimum course load and having a CGPA of 2.00 or higher are designated "Honor" students on the transcript for that semester. Those achieving a GPA of 3.50 or above, under the same conditions, are designated "High Honor" students.

Satisfactory

Students maintaining a CGPA of 2.00 or higher at the end of a semester are considered to have "Satisfactory" academic standing.

Probation

Students having a CGPA of 1.80 to 1.99 at the end of a semester are placed on academic "Probation." Students on probation are expected to repeat courses of their choice from among the courses in which they previously received a grade of C-, D+, D, F, FX, FZ, or U.

Unsatisfactory

A student having a CGPA of below 1.80 at the end of a semester is considered to have an "Unsatisfactory" academic standing. These students are required to repeat courses of their choice from among the courses in which they previously received a grade of C-, D+, D, F, FX, FZ or U.

During course registrations at the beginning of each semester, all courses not taken by a student in previous semesters are considered to be "new courses" for that student.

Students on probation are required to take courses in which they received any of the grades F, FX, FZ, U, and W in previous semesters. They can also register for new courses with a maximum total number of credit hours that does not exceed 60% of the Nominal Credit Load. Such students can repeat courses that they will select among those courses in which they received C-, D+, or D for the purpose of improving their CGPA. If a student on probation is registering for courses in the second semester of the curriculum of a program, he/she may register for new courses with a maximum total number of credit hours that does not exceed 85% of the Nominal Credit Load.

Unsatisfactory students can not register for any new courses except for non-credit courses. Such students must repeat courses for which they have received F, FX, FZ, U or W grades, and are also expected to repeat any of the courses they wish for which they have previously received C-, D+, or D, for the purpose of improving their CGPA. If an Unsatisfactory student is registering for courses in the second semester of the curriculum of a program, he/she may register for new courses with a maximum total number of credit hours that does not exceed 70% of the Nominal Credit Load.

Repeating a Course

Students receiving a grade of F, FX, FZ, W or U in a course must repeat that course within two semesters. Students receiving a grade below a C in ENG 101 or ELS 104, or an F, FX in ENG 102 must repeat the course the next time it is offered. To improve their CGPA, students with an academic standing of "Satisfactory" may choose to repeat any course previously taken in which they received a grade of B- or lower within two semesters.

When a course is repeated, the new letter grade replaces the previous letter grade in the CGPA calculation. Under certain restrictive conditions, an elective course may be taken to replace a previously taken elective course from the same elective group. A required course that is no longer offered may be replaced with an equivalent course that is approved by the Faculty or School. In these cases, only the replacing course is included in the CGPA calculations. All grades, whether included in the CGPA calculation or not, will appear on the transcript.

Duration of Study

The normal period for completion of undergraduate studies at Bilkent University is four academic years. Students in four-year programs must complete the requirements of their programs within at most seven academic years (excluding studies in the School of English Language). Students who fail to graduate within that period or who will be unable to qualify for such graduation are dismissed from the University.

DIPLOMAS AND AWARDS

In undergraduate programs, a CGPA of 2.00 or higher and a passing grade for all curriculum courses and requirements is necessary to qualify for graduation. In graduate programs, a curriculum based CGPA (excluding courses that are outside the curriculum) of 3.00 or higher and a passing grade for all curriculum courses and requirements is necessary to qualify for graduation.

Students transferring to Bilkent University from another institution of higher education are subject to the "Regulations for Transfer Students".

For the criteria regarding graduate degrees, please refer to the graduate programs listed in this catalog under the respective departments.

LEAVE AND WITHDRAWAL

Leave of Absence

Students may be granted permission to leave the University temporarily. Applications detailing valid and reasonable grounds for request of such permission are made to the Registrar's Office. If a decision to grant leave is taken by the Executive Board of the related Faculty or School, notice is given to the Registrar's Office. Leave may not exceed two consecutive semesters at a time, or a total of four semesters for a student's entire study period. Applications for leave should be submitted in writing at the beginning of the semester. Applications for leave for health reasons must be properly authenticated by medical certificates.

Withdrawal from the University

Students may withdraw from the University by applying to the Registrar's Office.

FACILITIES and SERVICES

COMPUTER CENTER

Seyit Koçberber, Ph.D., Director

The Bilkent Computer Center (BCC) provides a variety of computing resources and services to meet the administrative, educational and research computing requirements in the university community. These services include providing computational, networking, and inter networking equipment, their hardware and software maintenance. Additionally, BCC develops in-house application software for the university itself including the academic information system, student information system and others.

Hardware Resources

Workstation and PC Laboratories

There are approximately 4,500 personal computers distributed in offices and laboratories throughout the campus; all connected to the campus network. BCC maintains 23 general purpose computer labs, populated with around 900 computers in total, for student and staff use. All users have access to laser printers and to the Internet. In addition to the BCC labs, many departments, schools and institutes maintain their individual educational and research labs.

Networking Capabilities

The campus network is built on a Gigabit Ethernet backbone. This star topology backbone connects all the faculties and buildings to the central switch via fiber-optic cables. Wireless network access points are scattered around the campus providing hot spots for mobile users.

All students and faculty are authorized to have accounts for their e-mail and access to the network and lab resources.

Dorm Net

Bilkent University's networking facilities are extended to the dormitories as well. All campus dormitory rooms are wired for the Ethernet and students living in the dormitories can connect their own computers to the campus network and the Internet.

Software Resources

BCC provides and maintains a wide variety of scientific tools at the users' disposal. These include statistical, mathematical, simulation libraries and packages together with various VLSI and graphics design tools and imaging tools. All modern and classical programming languages and development tools are available in various hardware platforms. State-of-the-art word processors, spreadsheets, database application software and presentation graphics software are available in most of the labs.

Some software developed in-house are also available to faculty, students and staff. The most widely used ones being AIRS (Academic Information Review System), SRS (Student Review System), and DAIS (Department Academic Information System). These are the most important tools to help the faculty and students in planning their course loads and academic preferences. ORS (Online Registration System) enables students to see and register to offered courses.

UNIVERSITY LIBRARY

Ebru Kaya, Library Director

Bilkent University Library is a lending and research library where open stacks permit free access to the entire collection, except the rare book collections. The main library, housed in its own four-storey building at the center of the Main Campus, is open from 8:30 to 23:30 weekdays; from 9:00 to 23:30 weekends. The East Campus branch library is open from 8:30 to 17:00 weekdays. Summer hours are announced.

Bilkent Library was the first Turkish university library to offer its readers automated services through an integrated computer system. It provides the use of an online public access catalog to all readers with access to computer terminals both in the libraries and elsewhere on campus as well as to researchers, any place in the world, with access to the internet. There are also 32 computers with internet access in the Reference and Current Periodicals Rooms for the purpose of searching e-resources and browsing the internet. Circulation of the collection is also automated. Wireless Internet access is available in both libraries.

The collection contains over one million items. The book collection, of over 488,000 printed books and 470,326 electronic books, increases by approximately 20,000 volumes annually. The library subscribes to 783 print journals from the USA and Europe and provides electronic access to over 94,843 e-journals. Over $3 million is spent each year on databases, books, journals and other resources, including DVDs and VCDs, maps, microforms, CD-ROMs, music scores and sound recordings. The library makes over 106 databases available online, which provide access to both citations and the fulltexts of journal articles, conference proceedings and papers and research material. Working papers and technical reports are received from leading research centers in Europe, the USA and Japan.

The Turkish Plastic Arts Archive makes available a file of over 50,000 newspaper clippings, magazine articles and exhibition materials (invitations, posters, catalogs). The collection has been catalogued and is accessible on the Internet.

Bilkent University Library has been designated by the Library of Congress to receive U.S. Government documents and makes them available in the Official Publications Room. The Bilkent University European Union Information Center opened in 2001 with the status of a full EUI serving as a depository for European Commission publications and World Bank regional publications

Materials of special interest to students include the "easy reading" section. The newspaper collection includes leading foreign newspapers. Daily newspapers and popular magazines can be read in the Newspaper and Magazine Reading Room. Photocopying is available in the library.

Reciprocal lending-borrowing agreements with a number of Ankara-area universities make it possible for Bilkent graduate students and faculty to borrow books from those libraries as well. Orientation tours of the Bilkent University Library are conducted on request in English and Turkish. The Main Library also houses an Art Gallery, with exhibitions running throughout the semester, and where regular musical performances and academic lectures are held. In order to make studying and research more pleasant there are two cafes in Main Library.

Further information about the Library and its collection can be found at: www.library.bilkent.edu.tr.

OFFICE OF THE DEAN OF STUDENTS

Kamer Rodoplu, Dean

Office of the Dean of Students intends to help and support students throughout their college life, assisting their development from their first to the very last day of their time in Bilkent. The Office coordinates a wide spectrum of activities performed in collaboration with students. From orientation to post-graduate career advancement, the Office is actively engaged in all steps of the personal development of Bilkent students. In this capacity, the primary objective is to develop Bilkenters into agents of change and progress in their lives and the communities they belong to and it is in fulfilling this task that the Office's work gets its form and meaning.

Student Union
Elected by the student body; student representatives are responsible for managing the Student Union and creating a program of activities. Located in the center of the Main Campus, the Student Union Building houses multifunctional rooms, offices and a small conference hall. The Student Union organizes students' social and cultural activities in coordination with the Student Activities Center.

Student Activities Center (Esra Korad, Coordinator)
The variety of activities offered on campus adds a social component to students' academic life. The Student Activities Center coordinates all student related activities including those within the Student Clubs and Societies as well as social responsibility projects.

All the clubs are established to cater to students' interests and needs in a very wide range that lies from aviation to diving, from engineering to history, and many more. For a complete list of clubs and societies: http://www.bilkent.edu.tr/bilkent/admin-unit/dos/okk/kulupler.html

Meetings, seminars, debates and trips are regularly organized by these clubs and societies allowing students to participate in various activities with many facets.

The Student Activities Center also provides the necessary liaison between the university administration and the Student Union. In addition, the Center offers students advisory services about their personal or institutional representation in domestic or international activities. The Center's office is located in the Student Union building for a better accessibility. Working closely with the Student Union, the Center also provides guidance when needed for clubs and extracurricular activities.

Social Responsibility Projects are created, organized, led and completed on a volunteer basis by the students of the University. Ongoing projects are:

Social Responsibility Projects www.bilkent.edu.tr/bilkent/admin-unit/dos/ssm/tdp.html
Center for Students with Special Needs www.bilkent.edu.tr/bilkent/admin-unit/dos/ssm/engelli.html
Aid Campaigns www.bilkent.edu.tr/bilkent/admin-unit/dos/ssm/yardim.html

Another important component of the Student Activities Center is "**Radio Bilkent**", a voluntary student radio station that is broadcasting on FM frequency **96.6** to the campus and citywide. Radio Bilkent provides an opportunity for Bilkent University students to gain social and professional experiences and adds value to the social and cultural life of Ankara with its organizations and programs. Radio may be listened live through Internet at www.radyobilkent.com. Bilkent University students can follow the recent news about the station from the university newspaper, Bilkent News, and also from the radio's web site. Radio Bilkent's main studio is located in the Engineering Building top floor, and the second studio "Radio Bilkent Orçun Gül", is located in the food court on main campus.

Career Center (Aydan Öktem, Acting Coordinator)

The Career Center provides career related services for Bilkent students throughout their university years. To prepare them for entering the business world, the Center offers workshop and seminars that focus on employment-seeking skills such as résumé writing, interviewing techniques, and career activities. Various companies, international organizations and government agencies refer to the Center to recruit graduates. In order to reunite students/graduates with the business world, the Career Center administers a CV Database where students and graduates upload their CVs and

directly apply for positions; and companies release their job postings and poll amongst the current recorded CVs.

Psychological Counseling and Development Center (Nilgün Güler, Coordinator)

Psychological Counseling and Development Center guides Bilkent students through their self-development journey. Helping them to develop awareness about their potential and how to apply this information into their academic, professional, social and intimate lives is the main focus of the center. In other words, the attending students are professionally supported in developing their unique personalities and creating a satisfactory life style.

The services offered by the center are individual and group counseling for the immediate purposes and seminars, workshops and self help materials for preventive purposes. Stress management; examination and performance anxiety; interpersonal communication; concentration and study skills; time management; realistic self-evaluation; intimate relations; problem solving; effective presentation skills, enhancing cognitive skills in learning; developmental stages of life and importance of identity in personality development are some of the topics covered in the preventive facilities.

The center also conducts survey type studies to explore the expectations and needs of the students. The outcome of these studies contributes to the ongoing program flow and the future planning processes.

Alumni Center (Ayşe Tuğcu, Coordinator)
The Bilkent Alumni Center was established to provide the highest level of service to all Bilkent University graduates. The Alumni Center's database includes a total of more than 40,000 graduates.

The primary objective of the Alumni Center is to facilitate communication among Bilkent graduates while strengthening their ties with the University. The Center organizes various activities for the alumni including the Annual Alumni Homecoming Weekend and the Graduation Party. In partnership with the Career Center, the Alumni Center keep graduates informed about career opportunities.

HEALTH CENTER

Mete Salih Aker, M.D., Director

The Health Centers, located on the Main and East Campuses, provide health services to students and personnel. The services are provided for all Bilkent University students. The Health Centers offer the services of five general practitioners, a neurologist, two gynecologists, two ophthalmologists, two psychiatrists, a dermatologist, an orthopedist, a dentist, a radiologist, an ENT specialist, and five nurses, two emergency medical technicians and one paramedic. The Centers have two in-house laboratories for immediate medical analysis such as blood count, urine analysis, blood chemistry and a unit for X-Ray and ultrasonographic examinations. Medicines are available on prescription at the Main Campus pharmacy and the pharmacies in Ankuva Bilkent Center, on Tunus street. A physician and a nurse are both on duty at the Health Centers in the Main and East Campuses 24 hours a day, including weekends. In case of emergencies, there is an ambulance accompanied by Health Center's doctors, on duty 24 hours a day to take patients, to hospitals in Ankara.

Services Provided

- Prevention against contagious diseases
- Medical examinations and first aid treatment
- Supervision of patients' recovery in certain cases and provision of relevant medical services
- Conducting research into the environmental health conditions on campus and reporting the results to the university administration
- Health education programs to students and staff on general medical and health issues and first aid (providing certificates for the first aid education by the government health authorities)

Applying to the Health Center

The Health Center is the first place that students get in contact in the event of illness or injury. Initial treatment or first aid would be carried out at the Health Center and, if necessary, the patient may be referred to a specialist or hospital which has an agreement with the University.

PHYSICAL EDUCATION AND SPORTS CENTER

Ahsen Bilen, Director

The sports programs, activities and facilities of the University are expanding constantly to keep pace with the growing needs of the large student body. The facilities include three gymnasiums, three outdoor tennis courts, two indoor tennis courts, several outdoor volleyball and basketball courts, four mini football fields, several aerobic/step studios, fitness/conditioning room and multi-purpose rooms, a regulation size grass football field on Main Campus. In addition, a modern seven thousand square meter multi-purpose sports complex (with a large state of the art fitness center, basketball, volleyball, three squash courts, aerobic/step and program studios and an indoor running-walking track) on Main Campus is used by hundreds of students every day. Furthermore, a 25 m long and 2.10 m deep semi-olympic indoor swimming pool was added to the facilities.

On-campus activities like courses, training sessions, tournaments or competitions are available in the following sports: Aerobic/step, aikido, American football, badminton, ballroom dancing, basketball, fencing, fitboxing, fitness/conditioning, football (soccer), horse riding, ice hokey, kendo, orienteering, squash, swimming, table tennis, taekwondo, tennis, Turkish folk dancing, ultimate frisbee, volleyball, wing tsun, yoga, and others. The students can also take many of the sports courses mentioned above as elective-credit courses every semester (see page 449 for details).

STUDENT HOUSING

Zeki Samatyalı, Manager

Bilkent University offers graduate and undergraduate student housing on campus, in twenty-six dormitory buildings accommodating more than 4,000 students. Advice and information about accommodation in dormitories can be obtained from the Dormitories Administration Office. Admission to the university does not automatically guarantee a space in the dormitories. Applications for housing must be submitted online through Bildorm-Dormitories Application System according to the time table announced each year.

To be considered for a space in the dormitories, or other Bilkent University identified housing after the dormitories are filled, students must meet all payment commitments (tuition and housing) on time. Dormitory openings will be assigned as they occur.

The dormitories are within walking distance of academic buildings and provide a good environment where friendships can be made and social needs met. Students learn the value of collective living and the need to develop self-discipline. They are ultimately responsible for their individual conduct, but on-hand support is continuously provided to students by employees in each dormitory building.

Rooms are arranged for single, double, triple and quadruple occupancies. Facilities within the dormitory complexes include central heating, social and study areas, laundry and ironing rooms, kitchens and bathing facilities.

All rooms are furnished and equipped with telephones and ethernet connection. General cleaning service is provided in each dormitory, but students are responsible for keeping their rooms tidy. Lavatories and showers are located on each floor. Students are required to provide their own towels. Food may be purchased from campus grocery stores or meals may be purchased at any of the restaurants or cafeterias on campus. There are parking lots at the dormitories.

Students who bring in their own computers are able to attach their hardware directly into the university campus network from their dormitory rooms and have access to all network facilities.

Students may as well take advantage of wireless internet connection either in at least one study room in each dormitory building or in their rooms, by means of free routers obtainable from dormitory receptions, upon request.

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Institute of World Systems, Economies, and Strategic Research
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National Magnetic Resonance Research Center (UMRAM)

Director: Adnan Akay, Ph.D. 290 2254
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FACULTY OF ART, DESIGN, AND ARCHITECTURE

Ayhan Altıntaş, Ph.D., Acting Dean

The Faculty of Art, Design and Architecture comprises six academic departments:

- Architecture
- Communication and Design
- Fine Arts
- Graphic Design
- Interior Architecture and Environmental Design
- Urban Design and Landscape Architecture

These departments offer undergraduate programs that lead to Bachelor of Architecture (B.Arch.), Bachelor of Fine Arts (B.F.A.), and Bachelor of Arts (B.A.) degrees. The graduate programs of the Faculty include Master of Fine Arts (M.F.A.) degree programs in the areas of Media and Design, Interior Architecture and Environmental Design, Master of Arts (M.A.) degree in the area of Media and Visual Studies, an interdisciplinary doctoral program in Art, Design and Architecture, and Ph.D. in Interior Architecture and Environmental Design.

The educational principles of the faculty are based upon the fact that the creative process in art and design relies on a broad body of knowledge for direction and inspiration. Guided by this principle, the degree programs aim to train highly competent research, design and performance oriented artists having a deep understanding of basic concepts, modern design and performance methods. The international and multidisciplinary composition of the academic staff allows the provision of interdisciplinary programs, as well as particular courses of study to meet individual educational needs.

ACADEMIC STAFF

Yasemin Afacan, Assistant Professor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 2008. Inclusive Design, Residential Environments for elderly people, kitchen design.

Hasan Yusuf Akçura, Instructor
B.A., French Language and Literature, Faculty of Letters, Department of Western Languages and Literatures, Ankara University, 1985.

Jülide Akşiyote Görür, Lecturer
M.F.A., Photography and Related Media, School of Visual Arts, NY, 2000.

Çağatay Alpay, Instructor
M.F.A., Graphic Design, Hacettepe University, 2011. Proficiency in Art, Graphic Design, Hacettepe University, 2015.

Burçak Altay, Assistant Professor of Teaching Practice
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 2000.

Serpil Altay, Instructor
M.S., Urban and Regional Planning, London School of Economics, 1972.

Kumru Arapgirlioğlu, Lecturer
Ph.D., Public Administration and Political Sciences, Ankara University, 2003. Environmental Planning and Administration.

Necmiye Şule Aybar, Instructor
M.Arch., Architecture, University of Texas at Arlington, 1990.

Bülent Batuman, Associate Professor
Ph.D., History and Theory of Art and Architecture, SUNY-Binghamton, 2006. History and theory of modern architecture and urbanism, urban politics.

Deniz Baykan, Instructor (on leave)
Ph.D., Urban Geography, Ecole des Hautes Etudes en Sciences Sociales, 2007.

Aysu Berk, Instructor
Ph.D., Architecture, University of Michigan, 2012. Building technology.

Can İzzet Birand, Instructor
M.A., in Graphic Design, Virginia Common Wealth University, 2008.

Marek Brzozowski, Assistant Professor
Higher Diploma in Art, Graphic Design and Typography, Gdansk Academy of Fine Arts, 1978.

Chen yu Chiu, Assistant Professor
Ph.D., Architecture, University of Melbourne, 2011. Architecturel Theory, History and Criticism.

Bülent Mehmet Çaplı, Visiting Professor
Ph.D., Communication, İstanbul University, 1990.

Halime Demirkan, Professor
Ph.D., Architecture, Middle East Technical University, 1989. Computer aided architectural design, human factors.

Didem Dizdaroğlu, Assistant Professor
Ph.D., Urban Planning, Queensland University of Technology, 2013.

Burcu Egel, Instructor
M.F.A., Lighting Design and Theatre Production, University of Florida, 2001.

Feyzan Erkip, Professor
Ph.D., City and Regional Planning, Middle East Technical University, 1993. Environmental analysis and design.

Jesus Espinoza Alvarez, Instructor
M.A., Architecture, University of Arizona, 2002.

Mark Paul Frederickson, Visiting Associate Professor
Ph.D., Architecture, University of California Los Angeles, 1991. Design education, sustainable community planning.

Giorgio Gasco, Visiting Assistant Professor
Ph.D., Architecture, Polytechnic University of Cataluna, 2007.

Ahmet Gürata, Assistant Professor
Ph.D., Cultural Studies and Humanities, University of London, 2003.

Meltem Gürel, Associate Professor
Ph.D, Architecture, University of Illinois at Urbana-Champaign, 2007. Architectural theory/history/criticism, cross-cultural histories of modernism, gender and space, design education.

Cengiz Gürer, Instructor
B.F.A., Graphic Arts, İstanbul School of Applied Arts (D.T.G.S.Y.O.), 1978.

Fulya Gürer, Instructor
M.F.A., Graphic Design, Eastern Michigan University, 1995.

Murad Gürzumar, Instructor
B.A., Classical Archaeology, Ankara University, 1985.

Çağrı İmamoğlu, Assistant Professor
Ph.D., Architecture, University of Wisconsin-Milwaukee, 2002. Environment-behavior studies, environmental perception, cognition and evaluation, environments for older adults.

Levent Y. İnce, Instructor
M.F.A., Departmant of Graphic Design, Bilkent University, 2010.

Hatice Karaca, Instructor
D.E.S.S., Paris X Nanterre, 1999.

Mehmet Turhan Kayasü, Instructor
M.Arch., Architecture, Middle East Technical University, 1976.

Colleen Bevin Kennedy Karpat, Assistant Professor
Ph.D., French Literature and Culture, Rutgers University, 2011.
Ekin Kılıç, Instructor
Proficiency in Art, Graphic Design, Hacettepe University, 2011.
Glenn Terry Kukkola, Instructor
M.A., Divinity, University of Toronto, 2006.
Mehmet Atıl Kurttekin, Instructor
B.F.A., Graphic Design, Bilkent University, 1997.
Alper Küçük, Instructor
Ph.D., Architecture, Middle East Technical University, 2007.
Fulten Larlar, Instructor
M.F.A., Motion Pictures and Television, San Fransisco University, 2004.
Ahmet Oktan Nalbantoğlu, Assistant Professor of Practice
Ph.D., Landscape Architecture, Ankara University, 1997. Landscape economics.
Ersan Ocak, Assistant Professor
Ph.D., Graphic Design, Bilkent University, 2008.
Kağan Olguntürk, Instructor
Competency in Art, Cinema and Television, Marmara University, 2004.
Nilgün Olguntürk, Associate Professor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 2000. Color, lighting, universal design.
Ufuk Önen, Instructor
M.A., Media and Visual Studies, Bilkent University, 2008.
Necmiye Yaprak Öz, Visiting Assistant Professor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 1998. Kitchen and bath design.
Serpil Özaloğlu, Instructor
Ph.D., Architecture, Middle East Technical University, 2006.
Murat Özdamar, Instructor
M.F.A., Interior Architecture and Environmental Design, Bilkent University, 1998.
Emel Özdora Akşak, Instructor
Ph.D., Mass Communication, University of Florida, 2009.
Ahmet Özsalar, Assistant Professor
M.F.A., Plastic Arts, Pratt Institute, New York, 1984.
Adam Kazimierz Pekalski, Visiting Instructor
Higher Diploma in Art, Gdansk Academy of Fine Arts, Graphic Design and Illustration, 2000.
Mustafa Pultar, Adjunct Professor
Ph.D., Princeton University, 1965. Structural design, architectural science, environmental analysis and design.
Ercan Sağlam, Assistant Professor
Higher Diploma in Art, Sculpture, Hacettepe University, 2001.
Segah Sak, Instructor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 2013.
Özlem Savaş, Assistant Professor
Ph.D., Design History and Theory, University of Applied Arts Vienna, 2008.
Tijen Sonkan Türkkan, Instructor
M.A., Architecture, Academy of Fine Arts, Hamburg, 1984.
Agnieszka Srokosz, Instructor
M.F.A., Graphic Design and Painting, Gdansk Academy of Fine Arts, 2001.

Funda Şenova Tunalı, Lecturer
Ph.D., Graphic Design, Bilkent University, 2012.

Burcu Şenyapılı Özcan, Associate Professor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 1998. Computer aided design, design education

Şule Taşlı Pektaş, Assistant Professor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 2003. Design methods, computer aided design, design education.

Dominique Selin Tezgör Kassab, Professor
Ph.D., State Doctorate, History of Civilization and Archaeology, University of Human Sciences of Dijon, 1993.

Saadet Ayşe Gül Tokol, Lecturer
Ph.D., Architecture, Middle East Technical University, 1997. Urban morphology, space syntax, urban theory.

Andreas Treske, Visiting Assistant Professor
M.A., Film Directing, Hochschule für Fernsehen und Film, Munich, 1992.

Elif Erdemir Türkkan, Instructor
Ph.D., Interior Architecture and Environmental Design, Bilkent University, 1998.

Sibel Ertez Ural, Instructor
Ph.D., Architecture, Karadeniz Technical University, 1995.

Semiha Yılmazer, Assistant Professor
Ph.D., Architecture, Karadeniz Technical University, 1998. Building physics: architectural acoustics, lighting and thermal comfort.

Beata Malgorzata Zalewska Sladczyk, Instructor
M.A., Graphic Design, Gdansk Academy of Fine Arts, 1992.

PART-TIME ACADEMIC STAFF

Özgür Abacı, M.F.A., Digital Design, Vancouver Film School, 2008.
Aykan Alemdaroğlu, M.A., Latin Languages and Literature, İstanbul University, 2001.
Sevil Funda Ataylar, M.F.A., Interior Architecture and Environmental Design, Bilkent University, 1998.
Merve Ayparlar, M.A., Sustainable Design, University of Brighton, 2012.
Selda Bancı, Ph.D., Architectural History, Middle East Technical University, 2016.
Yavuz Baver Barut, M.Arch., Architecture, TU Delft, 2012.
Burcu Baykan, Ph.D., Digital Arts and Humanities, Trinity College Dublin, 2016.
Zeynep Bora, B.A., Interior Architecture and Environmental Design, Bilkent University, 2011.
Gaye Çulcuoğlu, Ph.D., Landscape Architecture, Ankara University, 1997. Urban green systems, urban heritage and regenaration of historical towns.
Özge Selen Duran, M.Arch., Architecture, Middle East Technical University, 2001.
Müge Durusu Tanrıöver, Ph.D., Archaeology, Brown University, 2016.
Ekin Ekiz, Ph.D., Civil Engineering, University of Michigan, 2007.
Ertan Ergin, B.A., Architecture, Middle East Technical University, 1980.
Ufuk Ertem, B.Arch., Architecture, Middle East Technical University, 1985.
Yves Pierre Gobart, M.F.A., Fine Arts, ENSBA Paris, 1999.
Mehmet Tevfik Gürsu, M.Arch., Architecture, Middle East Technical University, 1976.
Düral Kadıoğlu, Ph.D., Department of Anatomy, Faculty of Medicine, Liverpool University, 1973.
Gizem Karabay, M.S., Urban Planning and Policy Design, Polytechnic University of Milan, 2011.
Yasemin Kaygusuz, B.A., Architecture, University of London, 2001.
Aslı İpek Kılınç, M.A., Interior Architecture and Environmental Design, Bilkent University, 2007.
Erhan Konuk, B.S., Faculty of Science, Hacettepe University, 1995.
Cem Korkmaz, M.S., Architecture, Tu Delft- Delft University of Technology, 2012.
Emre Koyuncu, Ph.D., Purdue University West Lafayette, 2014.

Fatma Eda Kutay, M.S., Middle East Technical University, 1996.
Mehmet Barış Kuymulu, Ph.D., Cultural Anthropology, CUNY Graduate Center, 2014.
Esat Can Meker, B.A., Industrial Design, Middle East Technical University, 2011.
Müge Mengü Hale, M.A., Media Studies, The New School University, New York, 2006.
Farzana Mirza, M.A., Architecture, Institute Superieur D'architectuer, Intercommunal "Victor Horta", 1999.
Burcu Omay, M.A., Middle East Technical University, 1999.
Zeynep Öktem, M.S., Middle East Technical University, 2009.
Esra Özban, M.A., Film and Screen Studies, Goldsmiths University of London, 2014.
Nihan Özdöver, B.A., Ankara University, 2008.
Rabia Aytül Özkan, M. Arch., Architecture, Middle East Technical University, 2013.
Irmak Özman, M.F.A., Bilkent University, 1996.
Lutz Peschke, Ph.D., Institute of Linguistics, Media and Saund Studies, University of Bonn, 2011.
Zühre Sü Gül, M.Bsc., Architecture, Rensselaer Polytechnic Institute, 2006.
Berna Tanverdi, M.F.A., Architecture, University of Miami, 1996.
Burcu Tekin, M.A., English Literature, Middle East Technical University, 2010.
Bülent Tokman, M.Arch., Urban Settlement Design, Massachusetts Institute of Technology, 1975.
Erhan Tunalı, M.F.A., Media and Design, Bilkent University, 2016.
Ayça Turgay, M.A., University of Westminster, 2011.
Orhan Uludağ, M.CP., City and Regional Planning, Middle East Technical University, 1990.
Hande Vural Johnson, M.F.A., Writing for the Screen and Stage, School of Communication, Northwestern University, 2008.
İpek Yalçın, M.A., Edinburgh Napier University, UK, 2014.
Fadime Yılmaz, M.Arch., Architectural Theory, Middle East Technical University, 2009.
Elçin Yörük, M.F.A., Interior Architecture and Environmental Design, Bilkent University, 2002.
Damla Yurttaş, M.A., Architecture, Politechnico di Milano, 2015.

GENERAL ART, DESIGN AND ARCHITECTURE COURSES

ADA 131 Architectural Drawing
A general overview of the relationship between architectural design and drawing. Introduction to basic principles and techniques of architectural drawings such as plan, section and elevation; three dimensional expression and rendering techniques for visual communication of design ideas. *Credit units: 3 ECTS Credit Units: 4. Aut (S. Bancı, E. Ergin, H. Karaca, A. Küçük, R. A. Özkan, S. Sak, S. E. Ural) Spr (S. Bancı, C. Y. Chiu, E. Ergin, A. Küçük)*

ADA 134 Designing with Digital Media
Application of basic concepts and methods to the design process and representation; production of a digital set of drawings. *Credit units: 3 ECTS Credit Units: 4. Aut (B. Egel, E. C. Meker, Ş. Taşlı Pektaş) Spr (B. Egel, E. C. Meker, S. Sak)*

ADA 263 History of Built Environment I
Definition of history and concept of continuity in the built environment beginning from prehistory to the end of the 17th century by means of selected examples from the Middle-East, Anatolia and Europe, with a specific emphasis on the formation of architecture, interior architecture and landscape/urban design. *Credit units: 3 ECTS Credit Units: 5. Aut (M. Durusu Tanrıöver, G. Gasco, B. Omay, S. Özaloğlu)*

ADA 264 History of Built Environment II
Examination of the selected examples beginning from the 18th century Ottoman, Turkish and Western architectures by comparative analysis, with a specific emphasis on the formation of architecture, interior space and landscape/urban design. *Credit units: 3 ECTS Credit Units: 5. Spr (K. Arapgirlioğlu, M. Durusu Tanrıöver, G. Gasco, B. Omay, S. Özaloğlu)*

ADA 412 Contemporary Problems in Urban Sustainability
Sustainability within global urban settings; socio-spatially situated understanding of what is 'sustainable'. Socio-political construction of 'sustainability'. Historical and contemporary examples in the North and South; management of natural resources (land, water...), socio-political equity; 'right to the city'. Use of case studies and contemporary examples. *Credit units: 3 ECTS Credit Units: 6. Aut (M. P. Frederickson) Spr (M. P. Frederickson)*

ADA 690 Seminar in Advanced Research Topics
Credit units: None ECTS Credit Units: 1. Aut (A. Gürata) Spr (A. Gürata)

ADA 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 180. Aut (A. Gürata) Spr (A. Gürata)

DEPARTMENT OF ARCHITECTURE

M. Gürel (Chair), A. Berk, C. Y. Chiu, J. Espinoza Alvarez, M. P. Frederickson, G. Gasco, G. T. Kukkola, S. Sak, B. Şenyapılı Özcan, Ş. Taşlı Pektaş.

Part-time: S. F. Ataylar, S. Bancı, Y. B. Barut, Ö. S. Duran, E. Ekiz, Y. Kaygusuz, C. Korkmaz, M. B. Kuymulu, F. Mirza, R. A. Özkan, Z. Sü Gül, B. Tanverdi, B. Tekin, B. Tokman, O. Uludağ, F. Yılmaz.

Architectural designs shape our environment and affect the way we manage our everyday lives. The faculty is devoted to educate critical and independent thinkers who comprehend the importance of architecture's social impact. The program embraces the interdisciplinary nature of the discipline and offers a broad range of courses in order to equip students with knowledge and skills that will enable them to design aesthetically pleasing, structurally safe, technologically sound, environmentally healthy, and comfortable buildings.

UNDERGRADUATE PROGRAM

During the first year, the curriculum establishes foundational knowledge in mathematics, physics, arts and culture as well as in design and architectural drawing. This foundational year reflects the interdisciplinary nature of architecture and allows students to share an intellectual environment specifically within the faculty as well as the university at large. The second year curriculum introduces students to topics of architectural history, structural design, and construction of buildings. Design studios rest at the curriculum's core and enable students to apply knowledge learned in these courses to architectural design problems. The collaborative design studios in the second year expose students to concepts of interiors, environmental design, urban design, and landscape architecture. They aim to help students understand and appreciate the interdisciplinary character of architecture. The third and fourth year courses that follow offer advanced theoretical and practical knowledge in various areas of architecture and develop skills in architectural design. Together with a wide range of electives, these courses allow students to specialize in different aspects of the discipline. Courses on professional practice and summer practices held in offices and construction sites help prepare students for future professional life.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ADA 131	Architectural Drawing	3 / 4
ENG 101	English and Composition I	3 / 6
FA 101	Basic Design I	6 / 10
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
Spring Semester		Credits / ECTS Credits
ADA 134	Designing with Digital Media	3 / 4
ENG 102	English and Composition II	3 / 6
FA 102	Basic Design II	6 / 10
MATH 102	Calculus II	4 / 7
PHYS 101	General Physics I	4 / 6

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ADA 263	History of Built Environment I	3 / 5
ARCH 201	Architectural Design Studio I	6 / 10
ARCH 251	Architectural Building Systems	3 / 5
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8

TURK 101	Turkish I	2 / 2
	Free Elective	3 / 6

Spring Semester Credits / ECTS Credits

ADA 264	History of Built Environment II	3 / 5
ARCH 202	Architectural Design Studio II	6 / 10
ARCH 231	Statics and Strength of Materials	3 / 5
ARCH 252	Construction and Materials	4 / 6
GE 251	Collegiate Activities Program II	1 / 1
TURK 102	Turkish II	2 / 2

THIRD YEAR

Autumn Semester Credits / ECTS Credits

ARCH 290	Summer Practice I	- / 6
ARCH 301	Architectural Design Studio III	6 / 10
ARCH 321	Architecture and Society	3 / 4
ARCH 331	Structural Design I	3 / 5
ARCH 341	Environmental Technology I	3 / 5
	Free Elective	3 / 6

Spring Semester Credits / ECTS Credits

ARCH 302	Architectural Design Studio IV	6 / 10
ARCH 332	Structural Design II	3 / 5
ARCH 342	Environmental Technology II	3 / 5
	Humanities Elective	3 / 6
	Restricted Elective	3 / 6

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

ARCH 390	Summer Practice II	- / 6
ARCH 401	Architectural Design Studio V	6 / 10
ARCH 411	Conservation of Historical Environments	3 / 6
	Free Elective	3 / 6
	History of Architecture Elective	3 / 6

Spring Semester Credits / ECTS Credits

ARCH 402	Architectural Design Studio VI	6 / 10
ARCH 418	Professional Practice	3 / 6
	Free Elective	3 / 6
	Restricted Elective	3 / 6

HISTORY OF ARCHITECTURE ELECTIVES

ARCH 463	Modern Turkish Architecture	3 / 6
ARCH 465	Contemporary Architecture and Theory	3 / 6
ARCH 466	Architectural Theory and Criticism	3 / 6

GRADUATE PROGRAM

Department of Architecture offers Master of Science in Architecture to equip students with advanced skills in architectural design and in-depth critical thinking on architectural theories. The graduate program invites students who would like to excel in using current technologies in design and broaden ways of creative thinking.

Master of Science in Architecture

Admission: All applicants are required to have a Bachelor of Architecture degree or a B.S. degree in a related field of design. Students with a B.S. degree in a related field may be requested to take several undergraduate courses in architecture to acquire necessary background in the field. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş

Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 24 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
ARCH 590	Graduate Seminar	- / 1
ARCH 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	Core Graduate Course	3 / 7.5
	Graduate Electives (5)	15 / 37.5
	Restricted Graduate Electives (2)	6 / 15

CORE GRADUATE COURSES

ARCH 513	Theory and Methodology	3 / 7.5
GE 512	Quantitative Data Analysis	3 / 8

Graduate Elective Courses: All 5XX, 6XX courses with at least 3 credits

Restricted Graduate Elective Courses: All ARCH 5XX, 6XX courses with at least 3 credits.

COURSE DESCRIPTIONS

ARCH 201 Architectural Design Studio I
Introduction to principles and concepts of architectural design; case study and analysis; small-scaled projects on specific design problems. Development of skills in architectural representation. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 102. Aut (M. Gürel, C. Korkmaz, F. Mirza, B. Şenyapılı Özcan, B. Tokman, F. Yılmaz)*

ARCH 202 Architectural Design Studio II
Exploration of the relationship between the building and the site. Integration of basic urban concepts into the design process in the context of urban design and development. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ARCH 201. Spr (C. Y. Chiu, C. Korkmaz, F. Mirza, B. Şenyapılı Özcan, B. Tokman, F. Yılmaz)*

ARCH 231 Statics and Strength of Materials
Introduction to the basic concepts and principles of statics; vector mechanics; geometrical properties; free body diagrams; internal forces: shear and moment diagrams. Analysis of simple load-carrying structures; columns; concepts of stress, strain and deformation. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MATH 101. Aut (E. Ekiz) Spr (A. Berk)*

ARCH 251 Architectural Building Systems
Introduction to building construction elements, methods, materials and technology; understanding of building components, such as roofs, walls, floors and stairs as systems; analysis of traditional and current building technologies; communication of construction ideas through visual tools. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: ADA 131. Aut (J. Espinoza Alvarez, G. T. Kukkola, O. Uludağ)*

ARCH 252 Construction and Materials
Continuation of ARCH 251; further studies of construction methods, materials and building systems; integration of design and building technology; building sustainability; development of a set of construction documents. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: ARCH 251. Spr (J. Espinoza Alvarez, G. T. Kukkola, O. Uludağ)*

ARCH 290 Summer Practice I
Practical experience in building construction processes; active participation in construction work on site (4 weeks). *Credit units: None ECTS Credit Units: 6, Prerequisite: ARCH 251. Aut (Ş. Taşlı Pektaş) Spr (Ş. Taşlı Pektaş)*

ARCH 301 Architectural Design Studio III
Investigation of functional complexity, spatial variety, aesthetic and technological components of buildings. Creative interpretation of the concepts of environmental sustainability and building design. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ARCH 202. Aut (Ö. S. Duran, J. Espinoza Alvarez, M. P. Frederickson, G. Gasco)*

ARCH 302 Architectural Design Studio IV
Exploration of collaborative design. Integration of architectural, interior and urban design concepts. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ARCH 301. Spr (Ö. S. Duran, G. Gasco, G. T. Kukkola)*

ARCH 315 Computerized Presentation Techniques
Advanced usage of computerized programs for representation of projects by integrating traditional and computer media. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff) Spr (Y. B. Barut)*

ARCH 317 Parametric Design Studio
Different parameters of design are examined; skills are acquired in establishing building information systems (BIMs) and using them efficiently through the utilization of related software packages. *Credit units: 3 ECTS Credit Units: 6. Spr (Ş. Taşlı Pektaş)*

ARCH 321 Architecture and Society
Investigation of societal and environmental aspects and determinants of architectural design; analysis of case studies. *Credit units: 3 ECTS Credit Units: 4. Aut (B. Batuman)*

ARCH 331 Structural Design I
Principal structural elements of a building: Beams, columns and slabs. Load distributions on the structure. Exploring material properties and deformation. Introduction to steel; structural design of steel elements. Analysis of architectural applications. Case studies of historic and contemporary steel structures. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: ARCH 231. Aut (A. Berk)*

ARCH 332 Structural Design II
Introduction to concrete , design and analysis of reinforced concrete members. Exploring pre-stressed and post tension techniques. Case studies of historic and contemporary examples. Earthquake: Importance and role in structural design. Introduction to finite element modeling (FEM) and computer analysis. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: ARCH 331. Spr (E. Ekiz)*

ARCH 333 Form and Structure
Provides an understanding of the behavior of structures in relation to their form; studies spatial structures such as shells, domes, cable-nets and fabrics using computer programs where the relationship between the geometrical form and the structural behavior will be observed and explained through structural simulations. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

ARCH 341 Environmental Technology I
Study of fundamental daylight and artificial lighting principles; building lighting performance; lighting design methods. Introduction to concepts of architectural acoustics; sound behavior in buildings; noise control; fundamental design principles and methods. Fire prevention in buildings; life-safety systems and architectural applications; standards and regulations. *Credit units: 3 ECTS Credit Units: 5. Aut (J. Espinoza Alvarez, G. T. Kukkola)*

ARCH 342 Environmental Technology II
Introduction to contemporary mechanical systems and equipment for heating, cooling, ventilation and plumbing. Consideration of environmental sustainability. Integration of water supply and heating systems into the building design; waste water disposal; electrical systems, wiring. Evaluation of building service systems performance; technical drawings and documentation of the proposed designs. *Credit units: 3 ECTS Credit Units: 5. Spr (J. Espinoza Alvarez, G. T. Kukkola)*

ARCH 351 Urban Metabolism: tools from the social sciences for architects and designers
City as a dynamic, contested space, marked by reconfiguration and change. Literatures of actor-network theory, urban political ecology, urban regime theory; links between transformation of resources into built environment, with a focus on housing, and accompanying flows (people, resources, waste, power); dynamics of socio-political power and domination in cities. *Credit units: 3 ECTS Credit Units: 6. Aut (M. B. Kuymulu)*

ARCH 390 Summer Practice II
Practical experience in an architectural office; active participation in the design process and project development; observation of office environment (4 weeks). *Credit units: None ECTS Credit Units: 6. Aut (Ş. Taşlı Pektaş) Spr (Ş. Taşlı Pektaş)*

ARCH 401 Architectural Design Studio V
Embodies complex form generation based on architectural technologies that deal with building components and their interactions. Encourages the integration of technological advancements in construction and presentation techniques to the design process. Special consideration is given to contextual design, community leadership, participatory design and generation of building programs. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ADA 302 or ARCH 302. Aut (C. Y. Chiu, Y. Kaygusuz, G. T. Kukkola)*

ARCH 402 Architectural Design Studio VI
Emphasizes architectural complexity involving all relevant issues of a comprehensive design process including production drawings and documents; develops contemporary design solutions for a high-quality, sustainable

and aesthetic built environment; focuses on multifunctional building design with complex programs in an urban context; physical and social integration of building into the urban texture. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ARCH 401. Spr (J. Espinoza Alvarez, M. P. Frederickson, Y. Kaygusuz)*

ARCH 411 Conservation of Historical Environments
General introduction to the principles and techniques of conservation and restoration; focuses on the problems and developments related to conservation in Turkey; covers analysis of restored historic sites and buildings. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

ARCH 417 Advanced Visualization Studio
Advanced techniques in computer aided visualization. Virtual environments, internet based platforms and software packages for design related disciplines are utilized for creating design visualizations. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Şenyapılı Özcan)*

ARCH 418 Professional Practice
Professional administration of architectural design projects and the construction process; conduct of architectural practice; financial planning and contracts; professional ethics; rights and responsibilities of architects and clients; role of client and user; codes and legal aspects of building construction. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Tanverdi)*

ARCH 465 Contemporary Architecture and Theory
Review of the developments in Western architectural culture from the turn of the twentieth century to the present; contemporary architectural movements and theories. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Gasco)*

ARCH 466 Architectural Theory and Criticism
Investigation of architectural history, theory and criticism on special topics; social, cultural and political influences on architecture; readings of important theoretical and critical writings about a broad range of topics. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Y. Chiu)*

ARCH 513 Theory and Methodology
Deciphering and understanding approaches for analyzing the built environment. Evaluation and interpretation of texts related to architectural histories and theories. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. Gürel)*

ARCH 514 Architectural Readings
Critical analyses of architectural texts; methods for analyzing architectural buildings; ways of deciphering digital and traditional (re)presentations of architecture. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Şenyapılı Özcan)*

ARCH 515 Topics in Architectural Technology
A look at architectural technologies; digital opportunities, contemporary construction applications, developments in building materials. *Credit units: 3 ECTS Credit Units: 7.5.*

ARCH 516 Computational Design Technologies
Digital tools, media, digital geometries and parametric approaches that can be utilized in the process of producing architectural solutions. *Credit units: 3 ECTS Credit Units: 7.5.*

ARCH 517 Advanced Visualization Studio
Advanced techniques in computer aided visualization. Virtual environments, internet based platforms and software packages for design related disciplines utilized for creating design visualizations. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Şenyapılı Özcan)*

ARCH 550 Current Issues in Architectural Design
A look at the contemporary buildings both from our geography and from abroad. Studies on the current architectural discussions. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Staff) Spr (M. Gürel)*

ARCH 563 Modern Turkish Architecture
Study of architectural developments in Turkey from 1900 to the present within a socio-cultural framework; particular emphasis on the interrelationship of architecture and political developments; survey of important buildings, key figures of architecture and urban design; extensive readings on the subject. *Credit units: 3 ECTS Credit Units: 7.5.*

ARCH 564 Space and Culture
Investigations on the relationship between culture and the built environment, including the work of architects, designers, and planners as well as the ordinary people who create our surroundings. Focus on the theoretical basis for architecture and cultural studies. *Credit units: 3 ECTS Credit Units: 7.5.*

ARCH 565 Contemporary Architecture and Theory
Review of the developments in Western architectural culture from the turn of the twentieth century to the present; contemporary architectural movements and theories. *Credit units: 3 ECTS Credit Units: 7.5. Aut (G. Gasco)*

ARCH 566 Architectural Theory and Criticism
Investigation of architectural history, theory and criticism on special topics; social, cultural and political influences on architecture; readings of important theoretical and critical writings about a broad range of topics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (C. Y. Chiu)*

ARCH 590 Graduate Seminar
Academic presentations by graduate students on the theses they are preparing, answering relevant questions on the thesis; revisions. *Credit units: None ECTS Credit Units: 1.*

ARCH 599 Master's Thesis
Preparations towards the presentation of the thesis to the thesis jury, necessary format adjustments according to the Institute requirements. *Credit units: None ECTS Credit Units: 56.*

DEPARTMENT OF COMMUNICATION AND DESIGN

A. Gürata (Chair), H. Y. Akçura, J. Akşiyote Görür, B. M. Çaplı, L. Y. İnce, C. B. Kennedy Karpat, F. Larlar, E. Ocak, K. Olguntürk, U. Önen, E. Özdora Akşak, Ö. Savaş, F. Şenova Tunalı, A. Treske.

Part-time: Ö. Abacı, B. Baykan, E. Konuk, E. Koyuncu, M. Mengü Hale, E. Özban, I. Özman, L. Peschke, H. Vural Johnson.

Modern media is a leading force in the contemporary process of globalization. The department of Communication and Design aims to educate media professionals, with a special emphasis on visual communication and visual technologies, specifically in the fields of advertising, journalism, visual design, video and TV production and new media. Students are provided with a wide range of courses in media studies, theories and practice, like interpersonal communication and individual presentation, forms and techniques of public and mass communication, visual design and visual studies, advertising, marketing and public relations, basic computer and Internet knowledge. The visual design and communication courses in practical fields such as photography, television, computer and video are conducted in computer labs with the most developed visual design programs, photography studios and a very well equipped digital video production studio. Since the department's philosophy is to educate both creative and responsible media professionals, it also includes several must and elective courses on the ethical, legal and social problems related with mass communication.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
COMD 101	Visual Communication Design I	6 / 10
CS 153	Introduction to Computer Graphics	3 / 6
ENG 101	English and Composition I	3 / 6
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
SOC 101	Introduction to Sociology	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
COMD 102	Visual Communication Design II	6 / 10
CS 154	Introduction to Web Design	3 / 6
ENG 102	English and Composition II	3 / 6
FA 172	Introduction to Art and Culture II	3 / 5
PSYC 102	Introduction to Social Psychology	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
COMD 203	Introduction to Communication Studies I	3 / 6
COMD 205	Basic Photography	3 / 6
CS 155	Interactive Media Design and Development	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MATH 264	Statistics for Social Sciences	3 / 6

Spring Semester		Credits / ECTS Credits
COMD 204	Introduction to Communication Studies II	3 / 6
COMD 206	Introduction to Digital Cinematography	3 / 6
COMD 210	Introduction to Screenwriting	3 / 6
ECON 103	Principles of Economics	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
COMD 290	Summer Practice I	- / 6
COMD 305	Digital Video Production I	3 / 6
COMD 321	Analysis of Moving Image	3 / 6
COMD 341	Media and Society	3 / 6
COMD 471	Media Ethics	3 / 6
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
COMD 306	Digital Video Production II	3 / 6
COMD 342	Popular Culture	3 / 6
COMD 348	New Media	3 / 6
	Restricted Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
COMD 390	Summer Practice II	- / 6
COMD 481	Visual Communication Project I	4 / 6
	Elective	3 / 6
	Restricted Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
COMD 482	Visual Communication Project II	4 / 6
	Elective	3 / 6
	Restricted Electives (2)	6 / 12

RESTRICTED ELECTIVES

AMER 303	Film Studies in American Culture to 1960	4 / 8
AMER 304	Film Studies in American Culture Since 1960	4 / 8
COMD 207	Film History	3 / 6
COMD 308	Multi-Camera Production and Live-Recording	6 / 10
COMD 310	Screenwriting	3 / 6
COMD 322	Film Theory and Criticism	3 / 6
COMD 331	News Reporting and Writing	3 / 6
COMD 335	Science Writing and Journalism	3 / 6
COMD 346	Introduction to Advertising	3 / 6
COMD 347	Media Industries	3 / 6
COMD 349	Media Planning	3 / 6
COMD 350	Radio Programming and Production	3 / 6
COMD 354	Game Design and Research	3 / 6
COMD 355	Social Media Marketing	3 / 6
COMD 356	Digital Culture	3 / 6
COMD 357	Multimedia Journalism	3 / 6
COMD 361	Sound Design I	3 / 6
COMD 362	Sound Design II	3 / 6
COMD 365	Media, Memory and Culture	3 / 6
COMD 409	Advanced Broadcast Studio	3 / 6
COMD 422	Advanced Issues in Communication Studies	3 / 6
COMD 424	Media Theory and Methods	3 / 6
COMD 433	Gender and Media	3 / 6
COMD 434	Special Topics in Journalism	3 / 6
COMD 435	Documentary	3 / 6
COMD 436	Television Genres	3 / 6
COMD 437	Post-production Techniques	3 / 6
COMD 438	Adaptation in Media	3 / 6
COMD 439	International Public Relations	3 / 6
COMD 442	Special Topics in Visual Studies	3 / 6

COMD 451	Creative Project Design and Development	3 / 6
COMD 461	Public Relations and Communication Campaigns	3 / 6
COMD 462	Special Topics in Advertising	3 / 6
GRA 207	Conceptual Design	3 / 6
GRA 217	Motion Graphics	3 / 6
MAN 333	Marketing Principles	3 / 6
MAN 432	Consumer Behavior	3 / 6
THR 333	On Camera Acting	3 / 6

MINOR PROGRAM

The Department of Communication and Design is a response to the growing need of our increasingly globalized and networked world in which mass communications and visual technologies of various kinds play a fundamental role. By providing a wide range of courses in media studies, theories and practice, the Department of Communication and Design aims to educate media professionals, with a special emphasis on visual communication and visual technologies, specifically in the fields of advertising, journalism, visual design, video and TV production and new media. Our rationale is to produce knowledgeable and responsible media professionals who are able to respond to the urgent needs of development and globalization in effective ways.

The Minor Program in Communication and Design aims to introduce dynamics of media theory and practice to Bilkent students from different backgrounds. As a complement to their major area of study, the minor program give the students a deep insight into the fields of communication, media and design, and prepare them for a career that requires them to anticipate the impact of communication in our day.

Students enrolled in any of the Bilkent faculties are eligible to apply, provided that they fulfill the application criteria set by the university.

The minor program consists of six courses in total, of which three are mandatory. The mandatory courses are COMD 203 Introduction to Communication Studies I, COMD 204 Introduction to Communication Studies II, and COMD 321 Analysis of Moving Image. Additionally, according to their fields of interest, students choose three 300 or 400 level Communication and Design courses.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
COMD 203	Introduction to Communication Studies I	3 / 6
COMD 204	Introduction to Communication Studies II	3 / 6
COMD 321	Analysis of Moving Image	3 / 6
	Elective-300 or 400 level COMD courses (3)	9 / 18

GRADUATE PROGRAM

Master of Arts in Media and Visual Studies

The Department of Communication and Design offers Master of Arts program in Media and Visual Studies. The M.A. program aims to prepare students for careers in the media and communications sector as well as academic careers. It provides students with a sophisticated conceptual framework and analytical skills to enable them to make original contributions to media, visual and cultural studies by specializing in a particular aspect of Turkish or international media such as film, television, Internet or printed medium. The program encourages free and creative thinking, emphasizing research, analysis, interpretation, and criticism. Aiming at improving the standards of Turkish media, visual and cultural studies, the program encourages theoretical, interdisciplinary, and comparative approaches.

Admission: Applicants are required to have a Bachelor's degree. In addition to the general requirements set forth by the university, admittance to the graduate program is determined by the results of

an entrance examination. The date and place of the examination are announced each year by the University.

Degree Requirements: After the completion of at least 24 units of course work in two successive terms, the candidates must take two seminars in their area of interest and prepare and submit a thesis. The duration of program is four semesters.

CURRICULUM

Courses		Credits / ECTS Credits
COMD 511	Theory and Method in Media Visual and Cultural Studies	3 / 7.5
COMD 590	Seminar in Research Topics	- / 1
COMD 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	Electives (7)	21 / 42

Master of Fine Arts in Media and Design

The Master of Fine Arts program in Media and Design is a joint program offered by the Department of Graphic Design and the Department of Communication and Design . The M.F.A. program aims to prepare students primarily for careers in the media and graphic design sectors and secondarily in the academia. Integrating practical, theoretical, interdisciplinary, and comparative approaches, the program provides students with a sophisticated theoretical and practical framework to enable them to make original contributions to both Turkish and international media and design production. The program encourages free and creative thinking, emphasizing research, analysis, interpretation, practice and constructive criticism.

Admission: Applicants are required to have a four-year undergraduate degree. In addition to the general requirements set forth by the university, admittance to the program is determined by the results of an interview and the evaluation of the portfolios consisting of media and design works that have been done before (fiction writing, drawings, illustrations, graphic designs, scripts, storyboards, slides, photographs, web designs, animation projects, and/or videos). The date and place of the interview are announced each year by the University.

Degree Requirements: After the completion of at least 24 units of course work in two successive terms, the candidates must take two research seminars in their area of interest and prepare and submit a thesis project of media and design that also contains a written component. The duration of the program is four semesters.

CURRICULUM

Courses		Credits / ECTS Credits
COMD 511	Theory and Method in Media Visual and Cultural Studies	3 / 7.5
GE 590	Academic Practices	- / 12
GRA 501	Graduate Studio I	3 / 7.5
GRA 502	Graduate Studio II	3 / 7.5
GRA 590	Seminar in Research Topics	- / 1
GRA 599	Master's Thesis	- / 56
	Restricted Electives (5)	15 / 30

GRADUATE ELECTIVES

The elective list contains all graduate courses with at least 3 credits.

Dual Master of Arts in Communication and Information Sciences with Tilburg University

The Dual M.A. program allows a student to complete coursework and research while affiliated with both Bilkent COMD and Tilburg University in the Netherlands. The dual M.A. gives students the

opportunity to further expand their horizons to an international scale, connecting expertise in the field of communication studies with real experience abroad. Graduates of the program receive an M.A. degree from Bilkent plus an M.A. degree from Tilburg in one of six areas of specialization: Human Aspects of Information Technology, Business Communication and Digital Media Intercultural Communication, Communication Design, Data Journalism, Management of Cultural Diversity.

Admission: An undergraduate degree with a minimum 2.5 GPA (or equivalent) A minimum score of 55 in ALES OR GRE scores with a combined verbal and quantitative total of 950 (minimum) and a score of 3.5 in analytical writing. Proficiency in English as determined by TOEFL, IELTS, FCE, KPDS, or DS scores. Applicant interview at Bilkent conducted by faculty from Bilkent and Tilburg. To continue with the Tilburg-based portion of the program requires a minimum CGPA of 3.0 out of 4.0 at the end of the second semester of study at Bilkent. Students proceeding to Tilburg after completing their courses at Bilkent may also be required to enroll in a Statistics and Research Methodology course specifically designed for Communication and Information Sciences students. Depending on the student's previous background in statistical research, he/she might be required to complete this module and/or pass a qualifying exam in order to be admitted to the program.

Degree Requirements: Students enrolled in the dual M.A. spend two semesters at Bilkent (60 ECTS) before traveling to Tilburg to complete one year of further coursework (60 ECTS) that also includes a master's thesis. While the program is designed to be completed in two years - four semesters plus a summer in Tilburg - extensions are allowable as long as the entire dual degree program is completed within three years.

COURSE DESCRIPTIONS

COMD 101 Visual Communication Design I
An elementary introduction to the principles of visual design and communication. Concepts of from, pattern, color, composition and function. Basic problem solving strategies in two-dimensional design. Development of visual awareness and visual literacy. Theories of perception, Gestalt and design dynamics. *Credit units: 6 ECTS Credit Units: 10. Aut (J. Akşiyote Görür, F. Şenova Tunalı)*

COMD 102 Visual Communication Design II
Traditional media approaches and contemporary digital applications incorporated to solve problems within the visual arts. Advanced uses of form, pattern, color, composition and function to solve both two-dimensional and three-dimensional problems. Usage of different visual forms through photography, illustration, typography and graphic design. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: COMD 101. Spr (J. Akşiyote Görür, F. Şenova Tunalı)*

COMD 203 Introduction to Communication Studies I
Communication as a process: Code, massage, sign, medium and context. Theories and models of communication: Linguistics, semiotics and engineering models. Encoding and decoding, analog and digital codes. Convention and use. Lateral, symbolic and metaphorical communication; visual metaphors. *Credit units: 3 ECTS Credit Units: 6. Aut (C. B. Kennedy Karpat, L. Peschke)*

COMD 204 Introduction to Communication Studies II
Various forms and modes of communication. Modern media of communication. The impact of technology on communication, especially mass communication. Visual and verbal aspects; narrative, technology and spectatorship. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 203. Spr (B. Baykan, E. Özdora Akşak)*

COMD 205 Basic Photography
An introductory course in photography. Taking photographs: interior/exterior, knowledge of composition and film developing, and basic laboratory practices. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 102. Aut (K. Olguntürk)*

COMD 206 Introduction to Digital Cinematography
Moving image production in various kinds of media formats. Basic professional video camera operation and cinematographic skills such as camera movement, framing, composition, and lighting. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 205. Aut (K. Olguntürk) Spr (K. Olguntürk)*

COMD 207 Film History
History of cinema from its invention to the digital era. Major breakthroughs, significant movements and genres in cinema, as well as style and meaning, elements of film narrative, and filmmaking techniques. Historical, political and cultural context of the movies. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Özban) Spr (E. Özban)*

COMD 210 Introduction to Screenwriting
Basic notions of classical narrative scriptwriting such as character, structure, plot, dialogue, genre, and theme, as well as textual elements of audio-visual forms such as documentary, experimental and multimedia presentations. Proper script formatting, dialogue writing, pitching ideas, and proposal writing. Completion of one short script and a proposal for a second audio-visual project. *Credit units: 3 ECTS Credit Units: 6. Aut (F. Larlar, H. Vural Johnson) Spr (F. Larlar)*

COMD 290 Summer Practice I
Summer internship to give students an experience in the organization, structure and working of the creative industries over a minimum of 4 weeks. *Credit units: None ECTS Credit Units: 6, Prerequisite: COMD 204. Aut (E. Özdora Akşak)*

COMD 305 Digital Video Production I
Through various kinds of digital video projects, development of teamwork skills and learning the professional production process including pre-production, cinematography, and post-production, as well as production planning, shooting and editing, basic sound recording and design. Preparation a digital portfolio for final evaluation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 206. Aut (H. Y. Akçura, A. Treske) Spr (K. Olguntürk)*

COMD 306 Digital Video Production II
A continuation of COMD 305, advancing video production and directing skills. The emphasizing time management and project design. Improvement of skills in digital video post-production through increasingly complex projects. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 305. Spr (F. Larlar, E. Ocak)*

COMD 308 Multi-Camera Production and Live-Recording
An introduction course to multi-camera operation and TV production techniques for live performance recordings. Various kinds of practical exercises, demonstrations, shootings and real live situations for live music and performance video. Proficiency in pre-production and production activities, recorded and live performance, technical execution, written and practical examinations, as well as submitted written documents and additional assignments. *Credit units: 6 ECTS Credit Units: 10. Aut (H. Y. Akçura)*

COMD 310 Screenwriting
Art of story-telling, increasing awareness of memory, observation, and interpersonal relationships through the construction of narrative form for the screen. The ways in which an audience can be manipulated through the use of language. Themes with stories drawn from experience and conventions, problems, and possibilities of screenwriting. *Credit units: 3 ECTS Credit Units: 6.*

COMD 321 Analysis of Moving Image
Cinematic language, which has extended into a variety of visual media, including television. Mise-en-scene, cinematography, editing, sound-image relationships, narrative and non-narrative forms, with attention to both dominant practices (Hollywood) and alternatives. Use of these concepts in conjunction with critical writing skills to analyze moving image texts. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Gürata)*

COMD 322 Film Theory and Criticism
Key debates in film theory, covering concepts such as genre, auteurism, ideology, psychoanalysis, subjectivity, national and transnational cinemas, spectatorship and reception discussed in relation to film language, including narrative, mise-en-scene, cinematography, sound, and editing. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Gürata)*

COMD 331 News Reporting and Writing
News reporting and production techniques of radio and television. Gathering information, editing and writing under strict deadlines in order to prepare the student for a professional position. News values, and responsibilities. Basic news writing and style principles, interviewing techniques. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Mengü Hale) Spr (M. Mengü Hale)*

COMD 333 News and Society
The function of news in contemporary society and its role and impact on social and political affairs. A critical understanding of news by exploring core debates in press theories, patterns of news consumption, changes to news industries and the social consequences of news making. *Credit units: 3 ECTS Credit Units: 6.*

COMD 335 Science Writing and Journalism
Improvement of communication skills to cover science news and reach general public. Analysis of scientific journal findings, reporting and writing science/technology news stories to inform the lay audience. *Credit units: 3 ECTS Credit Units: 6.*

COMD 341 Media and Society
The media as a major social institution, the relationship between media and society. The production and reception of media content, the impact of media over other institutions, society and culture as well as the effects over individual behavior. Questions of control and ownership, public and private media. Mass culture and popular culture. Different forms and genres of media, fictional and news material. Propaganda and ideological influence.

The impact of new technologies of communication. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Koyuncu) Spr (Staff)*

COMD 342 Popular Culture
An awareness of how popular culture operates in specific ways. Popular narrative and entertainment forms in contrast with "high culture." Impact of cultural forms on audiences and a critical study of theories of popular culture. Significant cases from literature, press, film, television, and new media. *Credit units: 3 ECTS Credit Units: 6. Spr (Ö. Savaş)*

COMD 346 Introduction to Advertising
Basics of advertising: its functions, and how to plan and produce advertisements. Role of advertising in marketing communications, advertising institutions and media, and its retail aspects, with a theoretical foundation in economics, ethics, and social aspects. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Özdora Akşak)*

COMD 347 Media Industries
Survey of media industry and careers in television, film and new media. Titles, duties, and responsibilities, as well as the abilities, skills, experience, and training required for different media careers. Guest lectures from practicing media professionals. *Credit units: 3 ECTS Credit Units: 6.*

COMD 348 New Media
Basic knowledge of new media. Innovations that new media has introduced to conventional media forms, covering social media, online video, podcasting, wikis, computer games, etc. New forms of narrative in the digital era. *Credit units: 3 ECTS Credit Units: 6. Spr (L. Peschke)*

COMD 350 Radio Programming and Production
This course aims to acquaint the student with the techniques and aesthetics of audio production including radio broadcasting, audio for television, and multimedia production such as podcasts. Emphasis will be placed on scripting, editing, and production of several program forms. Introducing the concepts, technology, and skills behind audio production, the course will give a firm foundation in broadcasting and multi-media production. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Konuk) Spr (E. Konuk)*

COMD 354 Game Design and Research
Introduction to games as a cultural phenomenon and a media form in a historical context. An analytical approach to game mechanics and dynamics. Fundamentals of game development with the implementation of iterative design methodologies. *Credit units: 3 ECTS Credit Units: 6. Spr (L. Y. İnce)*

COMD 355 Social Media Marketing
Social platforms such as Facebook, Twitter, and Pinterest that drive contemporary marketing practices. Use of social media as a marketing tool with case studies, best-practice methodology, and current news items. A digital strategy combined with traditional media to influence purchasing decisions, and to develop comprehensive digital and social media marketing plans. *Credit units: 3 ECTS Credit Units: 6. Spr (Ö. Abacı)*

COMD 356 Digital Culture
Investigation of how perceptions of art along with cultural productions have transformed with the development of information technologies. Along the same line of thought, the most current manifestations of international contemporary art and design by probing into some recent case studies. Together with theoretical input, institutional organization structures. Seminal texts from scholars, media critics and theoreticians, as well as visual and aural examples from the field to accompany lectures. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Savaş)*

COMD 357 Multimedia Journalism
An understanding of digital journalism by introducing current discussions in online media, emerging digital technologies, data visualization. Development of online and multimedia reporting skills by actively contributing to class website, writing beat blogs, taking photographs, and creating short video and audio components for reports. Access to a smart phone or audio and video equipment required. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Mengü Hale) Spr (M. Mengü Hale)*

COMD 361 Sound Design I
Audio in relation to visual media through basic audio production and post-production techniques for video and film. Skill development in sound recording both in-studio and on location, covering signal processing, digital audio editing, and mixing. *Credit units: 3 ECTS Credit Units: 6. Aut (U. Önen)*

COMD 362 Sound Design II
Continuation of Sound Design I. Advanced audio post-production techniques for video and film. Components and creative potential of sound design in order to enhance communication through artistic and expressive uses of sound. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 361. Spr (U. Önen)*

COMD 363 Music and Media
Media shapes the production, distribution, and consumption of music. Theories and practices of music and related technologies in media. A variety of perspectives including artistic, industrial, and cultural dimensions. *Credit units: 3 ECTS Credit Units: 6. Spr (U. Önen)*

COMD 364 Video Production for Non-majors
Fundamental technical skills for digital moving image production including lighting, sound, cinematography, and basic editing. Production of several video projects during the semester. *Credit units: 3 ECTS Credit Units: 6.*

COMD 390 Summer Practice II
Summer internship in which students participate actively in professional audiovisual media productions and make detailed observations of these productions' planning as well as their media integration strategies, techniques, and tools. Improvement of skills in teamwork and production/client relations. Minimum time commitment of 4 weeks. *Credit units: None ECTS Credit Units: 6, Prerequisite: COMD 306. Aut (H. Y. Akçura)*

COMD 409 Advanced Broadcast Studio
Expands on the skills developed in the design and production related courses of the curriculum including multi-camera and live streaming. Building on the camera work, editing, writing, and producing, work to create and produce original online programming and production including live streaming. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 305. Spr (A. Treske)*

COMD 422 Advanced Issues in Communication Studies
This course is designed to introduce students to advanced issues in communication studies and recent research. Topics to be covered may include: revisiting the communication process; audience groups and different interpretations of media messages; ratings system; media practice and democracy; issues of identification, image and visuality; internet, cyberspace and the impact of recent technologies; digital cinema and digital television; interactive media and media art. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Peschke)*

COMD 433 Gender and Media
Representation of masculinity and femininity in the media. Gender bias and stereotypes in the portrayal of gender in film, television, internet and print media. Gendered audiences and gender differences in media reception. Issues of pornography and censorship, in the use of women's images in advertising and marketing. The role of media transforming as well as perpetuating gender inequality. *Credit units: 3 ECTS Credit Units: 6.*

COMD 434 Special Topics in Journalism
Advanced topics in journalism to deepen students' critical understanding of the field. The complicated nature of fact, truth and evidence; journalism contexts; privacy and publicity; ethics; news agendas; technological change; and journalism applied to specific areas like science, culture, business, and politics. *Credit units: 3 ECTS Credit Units: 6. Spr (B. M. Çaplı)*

COMD 435 Documentary
Basic knowledge of the history and forms of documentary cinema. Sub-genres and modes of documentary from its emergence to the digital era, with particular attention to newly emerging digital modes of documentary. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Ocak)*

COMD 436 Television Genres
Television's role as a cultural, social, political, and industrial force. Evolution of television and strategies for critical inquiry into its nature as a medium, exploring the uses and limitations of genre theory as applied to television, format adaptations, and interactive television. *Credit units: 3 ECTS Credit Units: 6. Spr (B. M. Çaplı)*

COMD 437 Post-production Techniques
A variety of film and media post-production techniques, including 3D integrations, animation, and green-box installations. Completion of a group project that puts these techniques into practice. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Abacı)*

COMD 438 Adaptation in Media
Adaptation and intertextuality in a variety of media forms: film, literature, television, theater, games, comics, etc. Adaptation in media franchises, cross-cultural adaptation, current theories of adaptation, and critical approaches to adapted texts. *Credit units: 3 ECTS Credit Units: 6.*

COMD 439 International Public Relations
The impact of public relations in an international context, including community and nation building, relationship management, and multi-national entities. Case studies and examples from different countries to gain an in-depth understanding about how cultural context might influence public relations practices. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Özdora Akşak)*

COMD 442 Special Topics in Visual Studies
Advanced topics in visual media and technologies. Concepts of technology and timage, visual language, new media and digital language. Role and power of visual cultures, technologies, and media to reflect and shape society. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Baykan)*

COMD 451 Creative Project Design and Development
Exploration of basic creative project design and development techniques in terms of process efficiency and the role of creativity when working with specific limitations and restrictions of time and budget. Consideration of the drastic change currently taking place in the methods of funding, marketing and distribution due to the effects of a new generation of media. Completion of a research project on various aspects of creative project design and also working on the development of a visual project, from conception of an idea or acquisition of the rights to a text, to correctly identifying the target audience and outlet in order to create the marketing/distribution strategy for the project. Presentation of final projects in the form of complete project proposals. *Credit units: 3 ECTS Credit Units: 6. Aut (F. Larlar)*

COMD 461 Public Relations and Communication Campaigns
Theory and practice of public relations and public communication. PR and opinion research, communication process and building effective campaign strategy. Case studies in PR and public communication, commercial and political advertising, humanitarian campaigns. Ethical considerations and impact on society. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Özdora Akşak)*

COMD 462 Special Topics in Advertising
Study of selected advanced topics in advertisement production and research focusing on various media application and future developments. Creativity and diversity, advertising research and planning of campaigns, generating ideas and strategy, copywriting for television, radio and direct marketing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: COMD 346.*

COMD 471 Media Ethics
A survey of the current ethical problems and issues in reporting, editing and broadcasting moral principles, legal regulations and their application to these problems. Examination of case studies with special emphasis on questions of privacy and freedom of information. *Credit units: 3 ECTS Credit Units: 6. Aut (B. M. Çaplı)*

COMD 481 Visual Communication Project I
The first phase of the fourth-year capstone project required of all COMD majors. Project relying on students' skills in project planning, media integration, and production and/or research techniques. Evaluation of plan as part of the course performance assessment. Through practical exercises and applications to major component media including computer text, graphics, photography, animation, speech, sound, and video. Technical and human interface issues. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: COMD 306. Aut (H. Y. Akçura, F. Larlar, E. Ocak, U. Önen)*

COMD 482 Visual Communication Project II
Introduction to planning, media integration, and production techniques and tools of interactive multimedia. Through practical exercises exposition to major component media including computer text, graphic, photography, animation, speech, sound, and video. Technical and human interface issues. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: COMD 481. Spr (F. Larlar, E. Ocak, U. Önen, A. Treske)*

COMD 511 Theory and Method in Media Visual and Cultural Studies
An overview of the major theories and fundamental research methods in media, visual, and cultural studies. Mass culture theory, the Frankfurt School, structuralism and post-structuralism, semiotics, and cultural studies; research methods include effect studies, media ethnography, content analysis, and other ways of studying media through close examination of its texts, institutions, audiences, and subcultures. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Ocak)*

COMD 513 Film and Genre
Key concepts in contemporary film studies, focusing on the deeply interconnected areas of genre, stardom, and director studies, categories to be discussed in conjunction with other fundamental concepts: narrative, mise-en-scene, gender, subjectivity, the gaze, spectatorship and audiences, and media industries. Application of these concepts in short, analytical papers and a final, in-depth critical essay. *Credit units: 3 ECTS Credit Units: 7.5. Aut (C. B. Kennedy Karpat)*

COMD 514 Identity Space and Image
Major debates related to the notions of identity and subjectivity in contemporary visual and cultural studies. Drawing upon various theoretical and methodological frameworks, emphasis on how identity and subjectivity can be conceived in relation to the concepts of space, memory, belonging, hybridity and migrancy in contemporary global culture. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ö. Savaş)*

COMD 516 Turkish Cinema and Modernity
Turkish cinema in relation to the question of "modernity." Offering a critical analysis of the historical development of Turkish cinema in the context of Turkey's experience of modernity. Investigation of debates around cultural specificity, gender, masculinity, realism, genre, and audience. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Gürata)*

COMD 517 Topics in Media Studies
Advanced, critical engagement with a specialized area within Media Studies. Topics, readings, and projects to be determined by the instructor. *Credit units: 3 ECTS Credit Units: 7.5.*

COMD 520 National and Transnational Cinemas
National and transnational contexts of contemporary cinema as well as historical practices of film production and criticism across these contexts. Discussion of these frameworks alongside other related concepts: genre, industry economics, cross-cultural remakes, festival culture, globalization, media regulation, nationalism, and reception. *Credit units: 3 ECTS Credit Units: 7.5.*

COMD 523 Media and Everyday Life
Reflecting a growing emphasis on practices of everyday life in the study of contemporary societies, identities, and political movements, examination of the entanglements of ordinary people with various media from an anthropological perspective. Drawing on ethnographically informed, historically grounded, and context-specific case studies, exploration of how people use and make sense of media texts and communication technologies in daily life, with a particular focus on the aesthetics and politics of the everyday. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ö. Savaş)*

COMD 524 Essay Film
Introduction to the essay film, which is an intellectual cinematographic form that is established at the intersection of academic and artistic modes of expression. Development of academic and intellectual capacities of students through the elaboration of this artistic form. Each student to develop an essay film project on a specific topic through readings and screening discussions. *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Ocak)*

COMD 525 Curatorial Practices in Contemporary Art
Development of skills and insight to evaluate the conceptual framework of a contemporary art exhibition and its spatial structure with design principles. Development of an understanding about the ideological, cultural, and social implications of the venues that host exhibitions (such as non-profit art centers, museums, galleries, alternative places) and public spaces. Various curatorial approaches and big scale contemporary art practices as case studies. Diverse readings, class interaction, discussions and hands on collaborative projects exploring concepts covered in class. *Credit units: 3 ECTS Credit Units: 7.5.*

COMD 566 Documentary Form and Practice
An overview of central issues in documentary study and creation, and development of an understanding of the fundamental aesthetic tools of documentary production through lectures, screenings, exercises and individual short projects. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. M. Çaplı)*

COMD 590 Seminar in Research Topics
Presentation of topic proposals by candidates at the thesis stage and attendance of presentations of other students. General discussion of academic research in media studies and strategies for giving and responding to oral and written feedback. *Credit units: None ECTS Credit Units: 1. Aut (C. B. Kennedy Karpat) Spr (A. Gürata)*

COMD 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (C. B. Kennedy Karpat) Spr (A. Gürata)

DEPARTMENT OF FINE ARTS

A. Altıntaş (Acting Chair), A. Özsalar, E. Sağlam, A. Srokosz, D. S. Tezgör Kassab, B. M. Zalewska Sladczyk.

Part-time: Y. P. Gobart, D. Kadıoğlu, E. Tunalı.

The Fine Arts Department has a distinctive structure and curriculum that contrast with other art schools in Turkey. The Department offers a flexible program that unites studio practice and art theory, combining art disciplines such as painting, printmaking, sculpture, installation, and ceramics with courses in theory and criticism. The aim of the curriculum is to equip future artists with a capacity for studio work and an understanding of artistic production as well as the theoretical dimensions of art. The well-equipped etching, lithography, silk screen, ceramics, and sculpture studios offer students excellent opportunities to explore new horizons.

UNDERGRADUATE PROGRAM

The interdisciplinary program of the Department integrates theory and practice. The aim is to enhance the students in various fields of fine arts. The students are expected to go through the phases of research, recognition, experience, and production of original works of art. They are continuously encouraged to develop their own artistic and critical formation.

In the Program, students experiment with various fields of arts such as painting, printmaking, sculpture, ceramics, and multi-media and are encouraged to conceive and produce creative original works and modes of thought.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
FA 103	Drawing I	3 / 4
FA 105	Foundation Studio I	6 / 10
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
GRA 131	Design Tools and Techniques	3 / 4
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
FA 104	Drawing II	3 / 4
FA 106	Foundation Studio II	6 / 10
FA 172	Introduction to Art and Culture II	3 / 5
GRA 132	Lettering and Introduction to Typography	3 / 4
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
FA 190	Summer Practice I	- / 6
FA 201	Art Studio I	6 / 10
FA 203	Drawing III	3 / 4
FA 223	Visual Perception and Color	3 / 4
FA 271	History of Art I	3 / 5
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8

Spring Semester		Credits / ECTS Credits
FA 202	Art Studio II	6 / 10
FA 204	Drawing IV	3 / 4

FA 262	Fine Arts Seminar	3 / 4
FA 272	History of Art II	3 / 5
GE 251	Collegiate Activities Program II	1 / 1
	Restricted Elective	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
FA 290	Summer Practice II	- / 6
FA 301	Art Studio III	6 / 10
FA 371	History of Art III	3 / 4
GRA 225	Introduction to Visual Techniques I	3 / 6
	Restricted Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
FA 302	Art Studio IV	6 / 10
FA 304	Special Problems in Drawing	3 / 4
FA 372	History of Art IV	3 / 4
	Restricted Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
FA 361	Philosophy of Art I	3 / 6
FA 390	Summer Practice III	- / 6
FA 401	Art Studio V	6 / 10
FA 421	Analysis of Art Work I	3 / 4
	Restricted Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
FA 402	Art Studio VI - Degree Project	9 / 16
FA 422	Analysis of Art Work II	3 / 4
FA 462	Senior Seminar	3 / 4
	Restricted Elective	3 / 6

RESTRICTED ELECTIVES

COMD 206	Introduction to Digital Cinematography	3 / 6
COMD 207	Film History	3 / 6
COMD 321	Analysis of Moving Image	3 / 6
COMD 342	Popular Culture	3 / 6
COMD 346	Introduction to Advertising	3 / 6
COMD 361	Sound Design I	3 / 6
COMD 364	Video Production for Non-majors	3 / 6
COMD 365	Media, Memory and Culture	3 / 6
COMD 433	Gender and Media	3 / 6
COMD 435	Documentary	3 / 6
COMD 461	Public Relations and Communication Campaigns	3 / 6
FA 207	Artistic Anatomy	3 / 6
FA 208	Anatomical Figure Drawing	3 / 6
FA 467	Curatorial Studies I	3 / 6
FA 468	Curatorial Studies II	3 / 6
FA 473	Contemporary Turkish Art	3 / 6
GRA 205	Rendering for Graphic Design I	3 / 6
GRA 206	Rendering for Graphic Design II	3 / 6
GRA 208	Graphic Design Concepts	3 / 6
GRA 210	Web Design	3 / 6
GRA 215	Animation and Film/Television Graphics I	3 / 6
GRA 216	Animation and Film/Television Graphics II	3 / 6
GRA 217	Motion Graphics	3 / 6
GRA 223	Photographic Image Processing I	3 / 6
GRA 224	Photographic Image Processing II	3 / 6

GRA 324	Photographic Practice	3 / 6
GRA 353	Design: Image and Text I	3 / 6
GRA 354	Design: Image and Text II	3 / 6
GRA 421	Illustration I	3 / 6
GRA 422	Illustration II	3 / 6
LAUD 481	Landscape Ecology	3 / 5

COURSE DESCRIPTIONS

FA 101 Basic Design I
Basic design concepts: form, pattern, composition, theme, organization, color, texture. Introduction to design problem solving skills. Abstract 2D and 3D design problems. *Credit units: 6 ECTS Credit Units: 10. Aut (Y. Afacan, Y. B. Barut, A. Berk, G. Çulcuoğlu, M. Durusu Tanrıöver, M. T. Gürsu, M. T. Kayasü, M. Özdamar, S. Sak, T. Sonkan Türkkan, Ş. Taşlı Pektaş) Spr (D. Baykan, Z. Bora, M. Özdamar, Z. Sü Gül)*

FA 102 Basic Design II
Continuation of basic design concepts: space, proportion, scale, human dimensions and activities. 3D design problems: user, function, structure. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 101. Spr (Y. Afacan, S. Bancı, Y. B. Barut, B. Batuman, A. Berk, M. Durusu Tanrıöver, M. T. Gürsu, M. T. Kayasü, S. Sak, T. Sonkan Türkkan, Ş. Taşlı Pektaş)*

FA 103 Drawing I
Exploration of the human figure, its parts and its form as far as structure and functions are concerned. Drawing fundamentals in figurative expression, proportions and compositional expressions by working directly from the model in various media. *Credit units: 3 ECTS Credit Units: 4. Aut (C. Gürer)*

FA 104 Drawing II
Exploration of visual form, character and gesture of movements of the human figure. Searching, evaluating and applying the basic elements of life drawing: line, form, color, value, module and composition. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: FA 103. Spr (C. Gürer)*

FA 105 Foundation Studio I
Introduction to the basic elements and the principles of two-dimensional design. Development of an understanding of the visual language while improving abilities in abstract thinking and problem solving. *Credit units: 6 ECTS Credit Units: 10. Aut (F. Gürer)*

FA 106 Foundation Studio II
As a continuation of FA 105, new subjects such as color, value, texture, transparency and layers via basic 2D, 3D and 4D design problems. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 101 or FA 105. Spr (C. İ. Birand)*

FA 107 Drawing and Visual Expressions
Improvement of drawing skills by means of discovering the ways of how to look and what to see in the environment in which we live. *Credit units: 3 ECTS Credit Units: 4. Aut (Y. P. Gobart, D. Kadıoğlu, A. Srokosz, B. M. Zalewska Sladczyk) Spr (Y. P. Gobart, A. Srokosz)*

FA 171 Introduction to Art and Culture I
Part of the two-semester course (FA 171 and FA 172) to develop a historical and critical sensibility about artistic and cultural production, focusing on themes like the correlation between Art and Culture, the terminology and institutions that define the arts, a historical background of the arts, paintings, sculpture, architecture, design, and popular culture. At the end of these courses, a fair knowledge of and a critical perspective on concepts, values and the relationship of art and culture. *Credit units: 3 ECTS Credit Units: 5. Aut (M. Ayparlar, G. Çulcuoğlu, F. Şenova Tunalı, B. Tekin, E. Tunalı) Spr (B. Tekin)*

FA 172 Introduction to Art and Culture II
Part of the two-semester course (FA 171 and FA 172) to develop a historical and critical sensibility about artistic and cultural production, focusing on the social function of art, Modernism, Art and the unconscious, Pop Art, Postmodernism, photography, film and television and digital media and multimedia. Development of a keen awareness of visual environment in a theoretical and practical way by applying the concepts given in the lectures and readings to visual and symbolic environment. *Credit units: 3 ECTS Credit Units: 5. Spr (M. Ayparlar, G. Çulcuoğlu, F. Şenova Tunalı, E. Tunalı, E. Yörük)*

FA 190 Summer Practice I
Minimum 6 weeks practice at arts-related institutions. *Credit units: None ECTS Credit Units: 6. Aut (E. Sağlam) Spr (E. Sağlam)*

FA 201 Art Studio I
Introduction to the art elements, arts techniques. For the students who are prepared to focus on developing a personal point of view in art. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 102 or FA 106. Aut (A. Srokosz)*

FA 202 Art Studio II
A continuation of FA 201. Development of concepts towards the transformation of basic design criteria to artwork with contribution of fantasy and imagination. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 201. Spr (A. Srokosz)*

FA 203 Drawing III
Study of the figure to improve drawing skills and knowledge. Fast sketching, figural expression, transformation, drawing materials and techniques. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: FA 104. Aut (A. Özsalar)*

FA 204 Drawing IV
Examining the human body in terms of form, color and color values. Studies leading to individual expression in model drawing based on the basic principles of art. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: FA 203. Spr (A. Özsalar)*

FA 207 Artistic Anatomy
A course for those who wish to gain the ability to catch the perfection of human body form by creating techniques and attitudes in observing and drawing the skeleton and live models. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Kadıoğlu)*

FA 208 Anatomical Figure Drawing
Furthering of the Artistic and Anatomical approach to figure drawing by critical interpretation and detailed study of the works of Renaissance Great Masters by means of studio sessions. *Credit units: 3 ECTS Credit Units: 6. Spr (D. Kadıoğlu)*

FA 211 Introduction to Painting I
Building basic technical skills. Experiments with the use of paint. Conceptual and practical experiments on color mixing. Examining the creative processes through these experiments. (non-FA majors only). *Credit units: 3 ECTS Credit Units: 6. Aut (B. M. Zalewska Sladczyk)*

FA 212 Introduction to Painting II
Research on visual elements; form-color, structure, volume and composition. Relations between light, color and sight. Developing the skill of design, compositional capacity through working on certain projects. (non-FA majors only). *Credit units: 3 ECTS Credit Units: 6. Spr (B. M. Zalewska Sladczyk)*

FA 213 Introduction to Printmaking I
Introduction to the fundamental techniques of water-based silkscreen printmaking. Manual and digital processes. Independent work and application of processes in creative ways while mastering the applied techniques. All projects in small editions while the final project involving a multi-process, multi-layer edition. Individual and group critiques throughout the semester. *Credit units: 3 ECTS Credit Units: 6. Spr (B. M. Zalewska Sladczyk)*

FA 214 Introduction to Printmaking II
Introduction to the fundamental techniques of oil-based intaglio printmaking. Traditional and contemporary applications and experimentation. Working independently on monoprints, small editions, and a multi-layer, multi-plate final project. Individual and group critiques throughout the semester. *Credit units: 3 ECTS Credit Units: 6. Spr (C. Gürer)*

FA 215 Introduction to Sculpture I
An introductory studio course on the basic concepts, materials and processes of sculpture, with an emphasis on the understanding of perception and representation of three dimensional objects for students from other disciplines. (non-FA majors only.) *Credit units: 3 ECTS Credit Units: 6. Aut (E. Sağlam) Spr (E. Sağlam)*

FA 217 Introduction to Ceramics I
Introduction to the basic material and techniques in ceramics including design, glazing, firing, loading and unloading kiln. Practice of what has been studied based on an artist's life and work. By the end of the course, writing of a research paper demonstrating knowledge of design, glazing and firing based on the artist chosen to work on. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Özsalar) Spr (A. Özsalar)*

FA 219 Ancient Techniques and New Technology in Mosaic
An experimental course, combining the current techniques and the new technology in ceramics such as using ceramic colours on fired tiles. Search for new ways of expression in colour. Using the clay as the canvas. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Özsalar) Spr (A. Özsalar)*

FA 223 Visual Perception and Color
Examination of subjects such as psychology of visual perception, seeing the color and perception of color-form, concepts and theories of color. *Credit units: 3 ECTS Credit Units: 4. Aut (A. Srokosz) Spr (A. Srokosz)*

FA 262 Fine Arts Seminar
Critical assessment of selected national and international artist's works and their ideas and approaches. *Credit units: 3 ECTS Credit Units: 4. Spr (E. Sağlam)*

FA 271 History of Art I
A chronological survey of the history of art from the Stone Age to the Byzantine World. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Alemdaroğlu)*

FA 272 History of Art II
A chronological survey of the history of art from the Renaissance period to the 21. Cent. *Credit units: 3 ECTS Credit Units: 5. Spr (A. Alemdaroğlu)*

FA 290 Summer Practice II
Minimum 6 weeks practice at arts-related institutions. *Credit units: None ECTS Credit Units: 6. Aut (E. Sağlam) Spr (E. Sağlam)*

FA 301 Art Studio III
A studio class in one of the selected fields of fine arts based on independent project work. The ceramics section applying underlying principles of sketching and critiquing. As one of the requirements of the course, individual or group tutorials during project work. By the end of the course, completion and presentation of three pieces of project based on course objectives. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 202. Aut (A. Özsalar)*

FA 302 Art Studio IV
Continuation of FA 301. With emphasis on the development of individual vision and personal expression. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 301. Spr (A. Özsalar)*

FA 304 Special Problems in Drawing
Studies of the human body concerning form, color and value. Exploration of individual expression by using models to build up thought and imagery. Contemporary figural expressions. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: FA 204. Spr (A. Srokosz)*

FA 361 Philosophy of Art I
Philosophical issues that arise concerning the creation, interpretation and viewing of art, since Plato. What is "mimesis"; who is the best judge of art; is art beautiful and good; should art be viewed dis-interestedly. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Alemdaroğlu)*

FA 371 History of Art III
Main achievements of the History of Art from the Middle Age to the Baroque period in Europe, such as the construction of the cathedrals, the research on perspectives, the conquest of the colors and of the light. Comparative material related to the Ottoman Empire and the Far East. *Credit units: 3 ECTS Credit Units: 4. Aut (D. S. Tezgör Kassab)*

FA 372 History of Art IV
Great artistic challenges from the Neoclassicism, Romanticism and Orientalism until the mid-20th century. The reciprocal influences between the Ottoman Empire and Europe, as well as the new vision of art created by the Impressionism, Cubism, Dada or Surrealism. *Credit units: 3 ECTS Credit Units: 4. Spr (D. S. Tezgör Kassab)*

FA 390 Summer Practice III
Minimum 6 weeks practice at arts-related institutions. *Credit units: None ECTS Credit Units: 6. Aut (E. Sağlam) Spr (E. Sağlam)*

FA 401 Art Studio V
Studio work related to the student's preference of thematic possibilities in the selected field of fine arts. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 302. Aut (E. Sağlam)*

FA 402 Art Studio VI - Degree Project
Individual studio work aiming to realize a coherent body of artwork in the selected field of fine arts. *Credit units: 9 ECTS Credit Units: 16, Prerequisite: FA 401. Spr (E. Sağlam)*

FA 421 Analysis of Art Work I
Introduction to critical analysis of works of art by concentrating on the theoretical debates developed around various issues on art theory since the 19th century. *Credit units: 3 ECTS Credit Units: 4. Aut (A. Alemdaroğlu)*

FA 422 Analysis of Art Work II
Having dealt with the nature of painting, photography and cinema in the first part of this course, study of various postmodern approaches to art-such as semiotic, psychoanalytic, social and political approaches in order to foreground the impact of the postmodern theory on arts. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: FA 421. Spr (A. Alemdaroğlu)*

FA 462 Senior Seminar
Working and assessment on selected contemporary issues of art, finding interdisciplinary and alternative ways of communication with public. *Credit units: 3 ECTS Credit Units: 4. Spr (E. Sağlam)*

FA 473 Contemporary Turkish Art
Analysis of the general features of various movements in Modern Turkish Art. Painting, sculpture and ceramics in Turkey from the late nineteenth century to the present. Its evaluation in comparison with European and other modern art movements. *Credit units: 3 ECTS Credit Units: 6.*

DEPARTMENT OF GRAPHIC DESIGN

A. Altıntaş (Acting Chair), Ç. Alpay, C. İ. Birand, M. Brzozowski, C. Gürer, F. Gürer, M. Gürzumar, E. Kılıç, M. A. Kurttekin, A. K. Pekalski.

Part-time: A. Alemdaroğlu, B. Tekin.

Turkey, in recent years, has witnessed an explosion in advertising and communication that has resulted in the emergence of an aesthetic awareness in both the public and the private domain. There is a growing demand for well-educated designers in all aspects of visual design and communication.

The Department of Graphic Design strives to promote visual literacy, and the production of visual language to communicate messages through illustration, typography, photography, advertising, computer graphics, packaging, and contemporary media. To this aim, students are encouraged to utilize and experiment with contemporary production technologies.

The educational philosophy of the Department of Graphic Design is to question well-worn graphic trends, emphasize critical and theoretical thinking, and contribute innovative and individual proposals to the field.

UNDERGRADUATE PROGRAM

A broad based curriculum during the first year exposes students to fundamental art and language education as well as courses in Art History, Art and Culture and foundation studio art classes. The second year is made up of intensive studio classes in Visual Communications, Illustration, Typography, Photography, and Computer Graphics. The third year consists of more advanced topics aiming to increase students' knowledge in design and awareness to contemporary design issues. A variety of elective courses are also offered beginning with the third year for students to improve themselves further in specific fields of visual design. In-depth theoretical courses such as Analysis of Artwork and Philosophy are offered in addition to a comprehensive array of electives which support and enhance the core curriculum. The fourth year aims to prepare students for professional practice. It encourages students to find their individual voice and approach in design which is finalized with a senior project and a graduation exhibition.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
FA 103	Drawing I	3 / 4
FA 105	Foundation Studio I	6 / 10
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
GRA 131	Design Tools and Techniques	3 / 4
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
FA 104	Drawing II	3 / 4
FA 106	Foundation Studio II	6 / 10
FA 172	Introduction to Art and Culture II	3 / 5
GRA 132	Lettering and Introduction to Typography	3 / 4
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
FA 271	History of Art I	3 / 5
GE 250	Collegiate Activities Program I	- / 1

GRA 201	Graphic Design I	6 / 8
GRA 211	Typography I	3 / 6
GRA 218	Essentials of Photography	3 / 6
GRA 225	Introduction to Visual Techniques I	3 / 6
HIST 200	History of Turkey	4 / 8

Spring Semester Credits / ECTS Credits

FA 272	History of Art II	3 / 5
GE 251	Collegiate Activities Program II	1 / 1
GRA 202	Graphic Design II	6 / 8
GRA 212	Typography II	3 / 6
GRA 219	Advanced Photography	3 / 6
GRA 226	Introduction to Visual Techniques II	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

FA 361	Philosophy of Art I	3 / 6
GRA 290	Summer Practice I	- / 6
GRA 301	Graphic Design III	6 / 8
GRA 341	History of Graphic Art	3 / 6
	Restricted Electives (2)	6 / 12

Spring Semester Credits / ECTS Credits

GRA 302	Graphic Design IV	6 / 8
GRA 344	Psychology of Advertisement	3 / 4
GRA 347	Design Issues	3 / 6
	Restricted Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

FA 421	Analysis of Art Work I	3 / 4
GRA 390	Summer Practice II	- / 6
GRA 401	Graphic Design V	6 / 8
MAN 333	Marketing Principles	3 / 6
	Restricted Electives (2)	6 / 12

Spring Semester Credits / ECTS Credits

FA 422	Analysis of Art Work II	3 / 4
GRA 402	Graphic Design VI	8 / 14
GRA 423	Professional Practice	3 / 6
	Restricted Elective	3 / 6

RESTRICTED ELECTIVES

COMD 207	Film History	3 / 6
COMD 361	Sound Design I	3 / 6
COMD 362	Sound Design II	3 / 6
COMD 364	Video Production for Non-majors	3 / 6
COMD 437	Post-production Techniques	3 / 6
FA 213	Introduction to Printmaking I	3 / 6
FA 214	Introduction to Printmaking II	3 / 6
GE 401	Innovative Product Design and Development I	3 / 6
GE 402	Innovative Product Design and Development II	3 / 6
GRA 205	Rendering for Graphic Design I	3 / 6
GRA 206	Rendering for Graphic Design II	3 / 6
GRA 207	Conceptual Design	3 / 6
GRA 208	Graphic Design Concepts	3 / 6
GRA 210	Web Design	3 / 6
GRA 215	Animation and Film/Television Graphics I	3 / 6
GRA 216	Animation and Film/Television Graphics II	3 / 6

GRA 217	Motion Graphics	3 / 6
GRA 313	Typographic Design and Theories	3 / 6
GRA 315	Information Design and Data Visualization	3 / 6
GRA 323	Logos, Symbols and Signs	3 / 6
GRA 333	Packaging I	3 / 6
GRA 334	Packaging II	3 / 6
GRA 351	Introduction to Video Production Techniques I	3 / 6
GRA 352	Introduction to Video Production Techniques II	3 / 6
GRA 353	Design: Image and Text I	3 / 6
GRA 354	Design: Image and Text II	3 / 6
GRA 421	Illustration I	3 / 6
GRA 422	Illustration II	3 / 6

MINOR PROGRAM

Graphic design deals with the creation of effective solutions to visual communication problems. It explores how to use visual language in an innovative way to convey specific messages to a target audience. The products of graphic design include advertisements, flyers, posters, book and magazine covers, editorials, packaging, logos, typefaces, websites, illustrations, animated characters, film credits, and more. The Department of Graphic Design at Bilkent University provides students with a well-equipped and thorough education which will make them proficient in the use of visual language, able to think critically and creatively, and capable of contributing innovative and individual proposals to the field.

The Minor Program in Graphic Design aims to introduce the dynamics of visual design to Bilkent students from different backgrounds. The program aims to lay the foundations in all stages of visual design from research to concept formation, image making to execution, and to endow students with the necessary skills of visual communication. The principle idea behind the program is that, like a second language, competence in visual language will add an extra dimension to students' own field of practice and make them better equipped in a world where interdisciplinarity is a growing demand. The minor will also be of interest to those students intending to pursue a graduate degree in a design related field.

Students enrolled in any of the Bilkent faculties are eligible to apply, provided that they fulfill the application criteria set by the university. The minor program consists of six courses in total, of which five are mandatory. The mandatory courses are Drawing I, Graphic Design for Non-Majors, Typography I, Introduction to Visual Techniques I, and History of Graphic Art. Additionally, according to their fields of interest, students choose one additional course from the Graphic Design Minor Program electives list as shown below.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
FA 103	Drawing I	3 / 4
GRA 209	Graphic Design for Non-Majors	3 / 6
GRA 211	Typography I	3 / 6
GRA 225	Introduction to Visual Techniques I	3 / 6
GRA 341	History of Graphic Art	3 / 6
	Elective	3 / 6

ELECTIVE COURSES

GRA 210	Web Design	3 / 6
GRA 212	Typography II	3 / 6
GRA 217	Motion Graphics	3 / 6
GRA 226	Introduction to Visual Techniques II	3 / 6
GRA 323	Logos, Symbols and Signs	3 / 6

GRA 324 Photographic Practice . . . . . 3 / 6
GRA 333 Packaging I . . . . . 3 / 6
GRA 421 Illustration I . . . . . 3 / 6

COURSE DESCRIPTIONS

GRA 131 Design Tools and Techniques
Foundations for visualization tools and technical skills in graphic design. *Credit units: 3 ECTS Credit Units: 4. Aut (M. A. Kurttekin)*

GRA 132 Lettering and Introduction to Typography
Evolution and principles of typography including anatomy of letterform and compositional hierarchy with typographic elements. *Credit units: 3 ECTS Credit Units: 4. Spr (M. A. Kurttekin)*

GRA 201 Graphic Design I
Visual thinking, concept development, color theory, gestalt principles, analogue and digital design techniques. Demonstrations, tutorials, extensive studio work and critiques. *Credit units: 6 ECTS Credit Units: 8, Prerequisite: FA 106. Aut (A. K. Pekalski)*

GRA 202 Graphic Design II
Development of creativity, imagination, visual sensitivity and technical skills through solving a series design problems with variety of media and materials. *Credit units: 6 ECTS Credit Units: 8, Prerequisite: GRA 201. Spr (A. K. Pekalski)*

GRA 207 Conceptual Design
An investigation of the application of abstract concepts to concrete design products, i.e., packaging, advertising and printed material, as a vehicle to create specific moods and associations in design. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Baykan, E. Kılıç) Spr (B. Baykan)*

GRA 209 Graphic Design for Non-Majors
Extensive studio work. Basic elements, processes and fundamentals of graphic design, ways of efficient communication with image and text in analogue and digital media. *Credit units: 3 ECTS Credit Units: 6. Aut (A. K. Pekalski) Spr (A. K. Pekalski)*

GRA 210 Web Design
Introduction to the world wide web and the stages of web design process through image editor, html editor and browser. *Credit units: 3 ECTS Credit Units: 6. Aut (C. İ. Birand, M. A. Kurttekin) Spr (M. A. Kurttekin)*

GRA 211 Typography I
Typographic design systems, the aesthetic functional and conceptual use of lettering for printing, typographic uses of various visual media and technical methods. *Credit units: 3 ECTS Credit Units: 6. Aut (C. İ. Birand, F. Gürer)*

GRA 212 Typography II
The artistic and technical problems of typographic design, typographic layout techniques, letterform design, portfolio studies on logos and signs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: GRA 211. Spr (F. Gürer)*

GRA 215 Animation and Film/Television Graphics I
Main principles of visual images and movement. Making images move. Continuity, lighting, filming and linking. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. Alpay)*

GRA 216 Animation and Film/Television Graphics II
Methods of animation, preparation of sketch board and storyboard. Studies with application of various graphic elements in motion. *Credit units: 3 ECTS Credit Units: 6. Spr (Ç. Alpay)*

GRA 217 Motion Graphics
Introduction to motion graphics, including history, categories, techniques and applications of motion graphics and animation basics as well as design and composition, storyboarding, sound and music adjustment on time based media. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. Alpay) Spr (Ç. Alpay)*

GRA 218 Essentials of Photography
Introduction to basic principles and techniques of photography covering darkroom techniques and processes. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Gürzumar)*

GRA 219 Advanced Photography
Introduction to advanced photography techniques such as advertisement, still-life and architecture photography and teaching image processing tools. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: GRA 218. Spr (M. Gürzumar)*

GRA 223 Photographic Image Processing I
Processing techniques of digitized still images, including digital darkroom methods by using related computer software. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Gürzumar) Spr (M. Gürzumar)*

GRA 225 Introduction to Visual Techniques I
An introductory course on vector and raster based graphic fundamentals and their applications to various 2-D graphic design items. *Credit units: 3 ECTS Credit Units: 6. Aut (M. A. Kurttekin) Spr (M. A. Kurttekin)*

GRA 226 Introduction to Visual Techniques II
Continuation course of GRA 225 aiming to carry the design skills and abilities to an advanced level. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: GRA 225. Spr (M. A. Kurttekin)*

GRA 290 Summer Practice I
Four weeks practice of offset printing. *Credit units: None ECTS Credit Units: 6. Aut (C. Gürer) Spr (C. Gürer)*

GRA 301 Graphic Design III
Studio course aiming to improve students' skills and knowledge in visual communication and graphic design so that students become more fluent in the use of visual language and be better acquainted with the dynamics of contemporary graphic design. *Credit units: 6 ECTS Credit Units: 8, Prerequisite: GRA 202. Aut (E. Kılıç)*

GRA 302 Graphic Design IV
Studio course and continuation of GRA 301 aiming to improve students' abilities to design and refine use of visual language to a more sophisticated level. Subject dealing with complex design issues and helping students to find ways to develop their own personal voice. *Credit units: 6 ECTS Credit Units: 8, Prerequisite: GRA 301. Spr (F. Gürer)*

GRA 313 Typographic Design and Theories
Focus on using type to effectively communicate ideas by instilling an awareness in the dynamics and the creative potential of the Typography discipline. Exploration of new forms of visual expressions by using typographical syntax and semantics. *Credit units: 3 ECTS Credit Units: 6.*

GRA 315 Information Design and Data Visualization
Studio course focusing on expanding students' understanding of how graphic design can become an effective tool for organizing and presenting complex data and information. *Credit units: 3 ECTS Credit Units: 6. Spr (C. İ. Birand)*

GRA 323 Logos, Symbols and Signs
Exploration of the languages and functions of logos, symbols and sign systems in visual communication. *Credit units: 3 ECTS Credit Units: 6. Aut (F. Gürer) Spr (F. Gürer)*

GRA 324 Photographic Practice
Course for non-majors introducing basic principles and techniques of photography, darkroom techniques and processes. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Gürzumar) Spr (M. Gürzumar)*

GRA 333 Packaging I
Projects on various subjects of publication graphics. Methods of realizing these projects with various graphics media. Use of airbrush and reproduction camera. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Gürer)*

GRA 334 Packaging II
Realization and preparation of graphics projects on mass communication media. *Credit units: 3 ECTS Credit Units: 6. Spr (C. Gürer)*

GRA 341 History of Graphic Art
Introduction to the twentieth century graphic design by exploring various movements, philosophies and pioneering figures using a collaborative, thought-provoking format. *Credit units: 3 ECTS Credit Units: 6. Aut (C. İ. Birand)*

GRA 344 Psychology of Advertisement
An introduction to the psychological aspects of the current consumer market. Its relation to cultural and socio-logical phenomena as an aid in determining an effective policy in advertising. *Credit units: 3 ECTS Credit Units: 4. Spr (E. Kılıç)*

GRA 347 Design Issues
A hybrid lecture/participation studio that introduces students to the contemporary issues they will encounter throughout their careers. *Credit units: 3 ECTS Credit Units: 6. Spr (C. İ. Birand)*

GRA 351 Introduction to Video Production Techniques I
Development of basic video production skills such as pre-production planning, lighting for video, shooting with a video camera and sound recording. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. Alpay) Spr (Ç. Alpay)*

GRA 390 Summer Practice II
Four weeks practice of experiencing and working at an advertising agency/graphic design and photographic studios. *Credit units: None ECTS Credit Units: 6. Aut (C. Gürer) Spr (C. Gürer)*

GRA 401 Graphic Design V
Studio course enabling students to apply their knowledge and skills to advanced graphic design projects. Explored through: studio work, lectures, critiques and with knowledge of the design skills. *Credit units: 6 ECTS Credit Units: 8, Prerequisite: GRA 302. Aut (M. Brzozowski)*

GRA 402 Graphic Design VI
Development and execution of final professional long-term graphic design project that includes various different items and media. *Credit units: 8 ECTS Credit Units: 14, Prerequisite: GRA 401. Spr (M. Brzozowski)*

GRA 421 Illustration I
Ways of interpreting a subject through pictures. Black and white and color illustrations. Interpretation of graphic subjects through pictures. *Credit units: 3 ECTS Credit Units: 6. Aut (A. K. Pekalski)*

GRA 422 Illustration II
Realization and printing either a technical book, children's book, story book, poetry book or illustration of a book written in another field. *Credit units: 3 ECTS Credit Units: 6. Spr (A. K. Pekalski)*

GRA 423 Professional Practice
Preparation of fourth-year students to professional graphic design career. Working fields of graphic design, the design firm, design market in Turkey, design ethics, copyright and licensing, presentation of the design work, and preparing a resume and portfolio. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Kılıç)*

GRA 501 Graduate Studio I
Course examining visual communication problems within the framework of contemporary culture. Emphasizing on critical approach and fresh perspectives through new concepts and alternative forms. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Treske)*

GRA 502 Graduate Studio II
Design of projects and discussions on contemporary art and design media forms and practices like time based media concepts, new media, interactive media, installations, audio-visual experiments. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Treske)*

GRA 503 Illustration I
Experimentation with various techniques to create work with an emphasis on personal style. Development of the ability to interpret ideas and concepts with images through the most creative solutions of imaginative illustrations. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. Brzozowski)*

GRA 504 Illustration II
Studies with wide practical applications of illustration. From editorial to literary with emphasis on developing individual methods. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. Brzozowski)*

GRA 511 Typography I
Issues of typographic form such as readability, syntax, expression, typographic communication, image-type relationships, and the historical components in relation to technology and contemporary trends. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Kılıç) Spr (E. Kılıç)*

GRA 517 Image Time and Motion I
Engagement of students to make meaningful generalizations for interpreting or evaluating local experiences and practices in digital media, art and communication. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Treske)*

GRA 518 Image Time and Motion II
A continuation from "Image, Time and Motion I". An extended attempt to think about popular developments of time-based media in digital environments. Critical discourse created through the works of digital artisans, net artists and cyber entrepreneurs as well as the theoretical and analytical localization of current trends. *Credit units: 3 ECTS Credit Units: 7.5.*

GRA 519 Critical Approaches to Advertising Consumer Culture
Critical scholarship on modern advertising and the economic, social, cultural context, often called consumerism or consumer culture. Semiotics and contemporary cultural issues on advertising, cultural/ideological and material/economic power of advertising, historical development. *Credit units: 3 ECTS Credit Units: 7.5.*

GRA 521 Animation I
Contemporary techniques for animated cartoons, movie and TV titles with emphasis on animation with computer imaging techniques, and the aesthetic issues of the medium and its relation to traditional visual arts and film. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ç. Alpay) Spr (Ç. Alpay)*

GRA 541 Graphic and Visual Representation
Theories, issues, and debates in the fields of graphic and visual arts. Graphic and pictorial representation, the relations between perception, image, language and subjectivity. Several theories of visuality and image such as semiotics, psychoanalysis and postmodern approaches. *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Kılıç)*

GRA 542 Mass Media and Visual Technologies
Developments in the field of visual media and technologies with an emphasis on modern mass media as social institution. Several approaches to technology with a particular emphasis to recent technologies such as television, computers and virtual reality as well as urban space as a visual and technological environment. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. M. Çaplı)*

GRA 590 Seminar in Research Topics
Presentation of material related to the thesis projects of students. Seminar discussions to help students develop necessary academic and artistic skills. *Credit units: None ECTS Credit Units: 1. Aut (A. Treske) Spr (A. Treske)*

GRA 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (A. Treske) Spr (A. Treske)

DEPARTMENT OF INTERIOR ARCHITECTURE AND ENVIRONMENTAL DESIGN

N. Olguntürk (Acting Chair), Y. Afacan, B. Altay, S. Altay, N. Ş. Aybar, H. Demirkan, B. Egel, Ç. İmamoğlu, M. T. Kayasü, A. Küçük, N. Y. Öz, S. Özaloğlu, M. Özdamar, M. Pultar, T. Sonkan Türkkan, E. E. Türkkan, S. E. Ural, S. Yılmazer.

Part-time: S. F. Ataylar, M. Ayparlar, Z. Bora, E. Ergin, M. T. Gürsu, A. İ. Kılınç, F. E. Kutay, E. C. Meker, B. Omay, Z. Öktem, I. Özman, B. Tanverdi, A. Turgay, İ. Yalçın, E. Yörük, D. Yurttaş.

The curriculum combines the arts with technical and scientific studies in order to give students a well-rounded education. As the department is cognizant of modern trends in interior architecture and the implications of new technologies, it aims at providing a balanced education between the artistic, technological and humane aspects of the profession.

UNDERGRADUATE PROGRAM

The curriculum is organized around studios which prepare the novice designer to deal progressively with larger and more complex interiors and greater technical detail. The studios enable students to synthesize knowledge from parallel courses in history, art, technology, drawing and principles of design. The first two years are intended to develop an understanding of different concepts of design in form, material, space, composition, and introduce the fundamentals of total interior space planning and design. The third and fourth years provide the opportunity to specialize in different interest areas such as: computers, new materials and technologies, humanities, social sciences, safety, special needs of the handicapped, and elderly etc. Digital Media (Computers) is also integrated into different levels of education.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ADA 131	Architectural Drawing	3 / 4
ENG 101	English and Composition I	3 / 6
FA 101	Basic Design I	6 / 10
FA 107	Drawing and Visual Expressions	3 / 4
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ADA 134	Designing with Digital Media	3 / 4
ENG 102	English and Composition II	3 / 6
FA 102	Basic Design II	6 / 10
FA 172	Introduction to Art and Culture II	3 / 5
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ADA 263	History of Built Environment I	3 / 5
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
IAED 201	Interior Design Studio I	6 / 10
IAED 211	Media for Representation	3 / 5
IAED 251	Construction and Materials I	4 / 6

Spring Semester		Credits / ECTS Credits
ADA 264	History of Built Environment II	3 / 5
GE 251	Collegiate Activities Program II	1 / 1
IAED 202	Interior Design Studio II	6 / 10
IAED 221	Human Factors	3 / 4
IAED 244	Lighting Design	3 / 4
IAED 252	Construction and Materials II	4 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
IAED 290	Summer Practice I	- / 6
IAED 301	Interior Design Studio III	6 / 10
IAED 341	Architectural Acoustics and Fire Safety	3 / 5
IAED 351	Detailing Studio	3 / 4
IAED 463	History of Furniture	3 / 5
	Elective	3 / 6

Spring Semester		Credits / ECTS Credits
IAED 302	Interior Design Studio IV	6 / 10
IAED 322	People and Environment	3 / 5
IAED 342	Sustainable Design for Interiors	3 / 5
IAED 381	Product Detailing	3 / 4
	Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
IAED 390	Summer Practice II	- / 6
IAED 401	Interior Design Studio V	6 / 14
IAED 415	Advanced Detailing Studio	3 / 4
	Elective	3 / 6
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
IAED 402	Interior Design Studio VI	6 / 14
IAED 418	Interior Design: Professional Practice	3 / 4
	Elective	3 / 6
	Restricted Elective	3 / 6

RESTRICTED ELECTIVES

IAED 315	Computerized Presentation Techniques	3 / 6
IAED 391	Special Topics in Interior Design I	3 / 6
IAED 392	Special Topics in Interior Design II	3 / 6
IAED 393	Visionary and Future Environments	3 / 6
IAED 394	TV Set Design	3 / 6
IAED 396	Architectural Photography	3 / 6
IAED 397	Color Theory and Applications	3 / 6
IAED 461	Environmental Management and Sustainable Development	3 / 6
IAED 464	Issues and Themes in Industrial Design	3 / 6
IAED 491	Current Issues in Interior Design I	3 / 6
IAED 492	Current Issues in Interior Design II	3 / 6

GRADUATE PROGRAM

The Department of Interior Architecture and Environmental Design offers M.F.A. program with the possibility of specialization in building science, history, theory and criticism, design theories and methods, and environmental psychology. Students are guided through an intensive program that emphasizes scholarly inquiry, research skills, analysis and constructive criticism. The curriculum provides an interdisciplinary outlook, incorporating knowledge from related disciplines. The graduate studio combines theory and application. The elective courses are chosen through consultation with an academic advisor.

Master of Fine Arts in Interior Architecture and Environmental Design

Admission: Applicants are required to have a Bachelor's degree in a relevant field of design. In addition to the general requirements set forth by the university, admittance to the program is through an interview as well as a portfolio evaluation. The portfolio should represent work done during

undergraduate years and contain those pieces of work the applicants consider their best efforts. All students are expected to be fluent in written and oral English in order to be admitted to the program.

Degree Requirements: After the completion of at least 24 units of course work in two successive terms, the candidates must take two seminar courses in their area of interest and prepare and submit a thesis. The duration of the program is four semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
IAED 501	Graduate Studio I	3 / 7
IAED 502	Graduate Studio II	3 / 7
IAED 511	Research Methods I	3 / 7
IAED 590	Seminar in Research Topics	- / 1
IAED 599	Master's Thesis	- / 56
	Electives (2)	6 / 12
	Restricted Electives (3)	9 / 18

RESTRICTED ELECTIVES

IAED 512	Statistical Analysis	3 / 7
IAED 514	Research Methods II	3 / 7
IAED 543	Environmental Analysis I	3 / 7
IAED 544	Environmental Analysis II	3 / 7
IAED 571	Lighting and Color	3 / 7
IAED 574	Art, Science and Technology	3 / 7
IAED 583	Design Principles and Theories	3 / 7
IAED 585	Design Requirements	3 / 7

Doctor of Philosophy in Interior Architecture and Environmental Design

Admission: Applicants are required to have a Master's degree in a relevant field. In addition to the general requirements set forth by the university, admittance is through an interview given before the beginning of each academic year. The date and place of the interview is announced each year by the university. All students are expected to be fluent in written and oral English in order to be admitted to the program.

Degree Requirements: The minimum course load for the Ph.D. program is 24 credit units. After completion of the courses, the student takes a qualifying examination composed of written and oral components. Upon successful completion of the qualifying exam, the student is designated as Ph.D. candidate and is assigned a dissertation committee. The next step is to prepare and defend a dissertation proposal. Upon a favorable evaluation of the proposal by the dissertation committee, the candidate qualifies for work towards a Ph.D. dissertation. At the completion of the dissertation, a jury composed of five scholars, expert in the relevant field examines the dissertation for a final decision on the degree. All Ph.D. candidates are required to have at least one article accepted for publication in an AHCI, SSCI or SCI indexed journal before the final dissertation defense.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
IAED 501	Graduate Studio I	3 / 7
IAED 502	Graduate Studio II	3 / 7
IAED 511	Research Methods I	3 / 7
IAED 690	Seminar in Advanced Research Topics	- / 1

IAED 699 Ph.D. Dissertation ..... - / 160
Electives (5) ..... 15 / 30

A total of 5 required, restricted elective or general elective courses (24 credits) according to the individual students major.

COURSE DESCRIPTIONS

IAED 201 Interior Design Studio I
Applying fundamental schematics in spatial design problems. Applying interior construction knowledge in interior design specific problem solving. Awareness of human factors in various design settings. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 102. Aut (B. Altay, S. F. Ataylar, N. Ş. Aybar, A. Küçük, I. Özman, S. E. Ural, E. Yörük, D. Yurttaş)*

IAED 202 Interior Design Studio II
Applying fundamental schematics in spatial design problems. Applying interior construction and materials knowledge in interior design specific problem solving. Awareness of lighting factors applications in interior design problems. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ADA 201 or IAED 201. Spr (B. Altay, S. F. Ataylar, N. Ş. Aybar, A. Küçük, I. Özman, S. E. Ural, D. Yurttaş)*

IAED 211 Media for Representation
Computer generated 3D modeling. Using 3D computer visualization technology to create and communicate design ideas. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: ADA 134 or IAED 112. Aut (T. Sonkan Türkkan) Spr (T. Sonkan Türkkan)*

IAED 221 Human Factors
Human factors/ergonomics as a determinant in the design of interior environments. User-centered approach to design. Universal design. Principles of applied anthropometry. Public spaces. Residential spaces. *Credit units: 3 ECTS Credit Units: 4. Aut (B. Altay) Spr (B. Altay, D. Yurttaş)*

IAED 244 Lighting Design
Physics of light. Vision and Perception. Lighting design principles. Artificial light sources. Natural light. Lighting applications. Colour and colour design. *Credit units: 3 ECTS Credit Units: 4. Spr (S. F. Ataylar, N. Olguntürk, S. E. Ural, İ. Yalçın)*

IAED 251 Construction and Materials I
Basic elements and components of a building. Developing surveying skills. Production of construction drawings. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: ADA 131 or FA 132. Aut (N. Ş. Aybar, M. T. Kayasü) Spr (Staff)*

IAED 252 Construction and Materials II
Behavior and properties of building materials. Selection criteria, applications and sustainability concerns. Staircase details. Reflected ceiling plans. Production of construction drawings. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: IAED 251. Spr (N. Ş. Aybar, M. T. Kayasü)*

IAED 290 Summer Practice I
Summer training on site and/or in production techniques. Minimum required time is 4 weeks. *Credit units: None ECTS Credit Units: 6. Aut (T. Sonkan Türkkan) Spr (T. Sonkan Türkkan)*

IAED 301 Interior Design Studio III
Public and semi-public interiors. Inclusive design detailing. Documentation for production. Building construction systems. Construction components. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: IAED 202. Aut (E. Ergin, Ç. İmamoğlu, A. İ. Kılınç, N. Y. Öz, S. Özaloğlu, A. Turgay, İ. Yalçın, S. Yılmazer)*

IAED 302 Interior Design Studio IV
Social public interior spaces. Environmental design. Inclusive design detailing. Documentation for production. Building construction systems. Construction components. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: IAED 301. Spr (E. Ergin, Ç. İmamoğlu, N. Y. Öz, S. Özaloğlu, A. Turgay, İ. Yalçın, S. Yılmazer)*

IAED 322 People and Environment
Environment and social behavior. Environmental perception and cognition. Environmental appraisals. Environmental psychology research methods. Implications for design. *Credit units: 3 ECTS Credit Units: 5. Aut (Ç. İmamoğlu, E. Yörük) Spr (K. Arapgirlioğlu, Ç. İmamoğlu)*

IAED 341 Architectural Acoustics and Fire Safety
Acoustics, noise control and fire prevention in buildings. *Credit units: 3 ECTS Credit Units: 5. Aut (Z. Bora, S. Yılmazer)*

IAED 342 Sustainable Design for Interiors
Concepts of sustainable design. Water use, energy conservation, thermal comfort and indoor air quality. Sustainable services of cold and hot water supplies. Interior design applications of heating, ventilation, sanitation and sewage disposal. Principles of alternative energy. *Credit units: 3 ECTS Credit Units: 5. Spr (Y. Afacan)*

IAED 351 Detailing Studio
Interior architectural detailing. Use of materials. Producing application drawings and within project referencing. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: IAED 252. Aut (M. Özdamar)*

IAED 381 Product Detailing
Detailing problems of products. Detailing of furniture, cabinetry, upholstery, fixtures, etc. Problems related to the nature of materials and production methods. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: IAED 351. Spr (S. Altay)*

IAED 390 Summer Practice II
Summer training in an interior architecture/architecture/design office. Organisation, project developing order, project application, designer/client relationships. Minimum required time is 4 weeks. *Credit units: None ECTS Credit Units: 6. Aut (T. Sonkan Türkkan) Spr (T. Sonkan Türkkan)*

IAED 391 Special Topics in Interior Design I
Topics of special interest. Research and investigation of specific design issues. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Egel) Spr (B. Egel)*

IAED 392 Special Topics in Interior Design II
Topics of special interest. Application of understanding to competency level of design knowledge. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Y. Öz) Spr (N. Y. Öz)*

IAED 394 TV Set Design
TV Set Design. Application of theory into practice. Developing interior design considering TV studio cameras and TV studio light. *Credit units: 3 ECTS Credit Units: 6. Aut (I. Özman) Spr (I. Özman)*

IAED 397 Color Theory and Applications
Basic color terminology. Color systems. Color vision and perception. Color interactions and contrasts. Harmony of colors, color schemes and compositions. Color planning and applications in design and architecture. Color research. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Olguntürk) Spr (S. E. Ural)*

IAED 401 Interior Design Studio V
Design of complex interior architectural spaces. Advanced solutions of spatial planning and layout. Consideration of functional program and user requirements. Standards, codes and regulations. Detailing, materials and furniture. Current issues. Advanced architectural drawing and presentation. *Credit units: 6 ECTS Credit Units: 14, Prerequisite: ADA 302 or IAED 302. Aut (S. Altay, M. Ayparlar, B. Egel, F. E. Kutay, B. Omay, Z. Öktem, B. Tanverdi, E. E. Türkkan)*

IAED 402 Interior Design Studio VI
Design of complex interior architectural spaces. Complete solutions of spatial planning and layout. Consideration of functional program and user requirements. Standards, codes and regulations. Detailing, materials and furniture. Current issues. Advanced architectural drawing and presentation. *Credit units: 6 ECTS Credit Units: 14, Prerequisite: IAED 401. Spr (S. Altay, M. Ayparlar, B. Egel, F. E. Kutay, Z. Öktem, B. Tanverdi, E. E. Türkkan, E. Yörük)*

IAED 415 Advanced Detailing Studio
Building systems and materials. Modular interior systems. Comprehensive and detailed project development. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: IAED 351. Aut (S. Altay)*

IAED 418 Interior Design: Professional Practice
Administration of a major interior design project. Client and trade relations. Codes, government and legal requirements. *Credit units: 3 ECTS Credit Units: 4. Spr (M. Özdamar)*

IAED 461 Environmental Management and Sustainable Development
Sustainable systems and techniques. Innovative system thinking for sustainable development. Practice skills for environment management. Economic and organizational dimensions of environmental decisions. *Credit units: 3 ECTS Credit Units: 6.*

IAED 463 History of Furniture
Understanding historical evolution of furniture design and industry. Developing research skills. Raising awareness of and seeing relations between history and today. *Credit units: 3 ECTS Credit Units: 5. Aut (E. E. Türkkan) Spr (E. E. Türkkan)*

IAED 464 Issues and Themes in Industrial Design
Raising awareness on profession of industrial design. Developing research skills. Production of design solution on an industrial design project. *Credit units: 3 ECTS Credit Units: 6.*

IAED 491 Current Issues in Interior Design I
Innovative planning. Current design issues. Development of advanced design skills. *Credit units: 3 ECTS Credit Units: 6.*

IAED 492 Current Issues in Interior Design II
Specialized issues related to contemporary techniques and materials. Special interior design problem solving. *Credit units: 3 ECTS Credit Units: 6. Aut (S. F. Ataylar)*

IAED 501 Graduate Studio I
Analysis, discussion and evaluation of design problems. Establishing design requirements. Organisational, spatial and environmental criteria for design. *Credit units: 3 ECTS Credit Units: 7. Aut (N. Olguntürk)*

IAED 502 Graduate Studio II
Research on a particular topic. Evaluation of research cases. Developing the criteria for research. Data gathering tools. Evaluating data, findings and discussion. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: IAED 501. Spr (N. Olguntürk)*

IAED 511 Research Methods I
System and methods for information acquisition. Verification of sources. Interpreting information. Hypothesis formulation. Understanding and studying the issues related to interiors. *Credit units: 3 ECTS Credit Units: 7. Aut (M. Pultar)*

IAED 512 Statistical Analysis
Principles of statistical analysis methods. Concepts of data collection and structuring. Tools to deal with large amounts of data and to draw conclusions from such data. *Credit units: 3 ECTS Credit Units: 7. Aut (H. Demirkan)*

IAED 514 Research Methods II
Techniques for crafting a speech and writing an essay. Conducting an actual research project in interior and/or environmental design for delivery of speech and publication. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: IAED 511. Spr (H. Demirkan)*

IAED 574 Art, Science and Technology
Investigating the characteristics of various disciplines that relate to art, science and technology. Correlating to the unity of mankind. *Credit units: 3 ECTS Credit Units: 7. Spr (M. Pultar)*

IAED 590 Seminar in Research Topics
Presentation on the progress of the graduate thesis work. *Credit units: None ECTS Credit Units: 1. Aut (N. Olguntürk) Spr (N. Olguntürk)*

IAED 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (N. Olguntürk) Spr (N. Olguntürk)

IAED 690 Seminar in Advanced Research Topics
Presentation on the progress of the Ph.D. dissertation work. *Credit units: None ECTS Credit Units: 1. Aut (N. Olguntürk) Spr (N. Olguntürk)*

IAED 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (N. Olguntürk) Spr (N. Olguntürk)

DEPARTMENT OF URBAN DESIGN AND LANDSCAPE ARCHITECTURE

B. Batuman (Chair), K. Arapgirlioğlu, D. Baykan, D. Dizdaroğlu, F. Erkip, H. Karaca, A. O. Nalbantoğlu, S. A. G. Tokol.

Part-time: G. Çulcuoğlu, M. Durusu Tanrıöver, U. Ertem, G. Karabay, N. Özdöver.

The design of urban environments requires skills of conceptualization at various scales, proposing solutions, and their implementation. It is also required to develop familiarity with issues such as heterogeneous human populations, dense building stocks, natural and environmental assets, a specialized labor force and a shared urban identity, as well as to build an ability to address these issues in design. Finally, it is necessary to master the appropriate use of natural and artificial materials.

Urban projects, of which landscape design is an integral part, have constituted the most intriguing design products in the world during the last two decades. These projects and their implementation have opened discussions leading to contemporary design theories, indicating that the integration of landscape architecture and urban design will further prosper in the future. Addressing the issues of urban context with those of landscape architecture, the department is the first to offer an undergraduate degree. The growing number of academic staff includes faculty who come from various disciplinary backgrounds including landscape architecture, city planning and architecture.

UNDERGRADUATE PROGRAM

Unlike other programs of landscape architecture, the Department of Urban Design and Landscape Architecture at Bilkent University is affiliated with a design faculty focusing on studios. The design studios and the technical and theoretical courses that make up the curriculum are supported by field trips in order to study various urban contexts as their project sites. These trips range from intra-city daily tours to international summer programs.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ADA 131	Architectural Drawing	3 / 4
ENG 101	English and Composition I	3 / 6
FA 101	Basic Design I	6 / 10
FA 107	Drawing and Visual Expressions	3 / 4
FA 171	Introduction to Art and Culture I	3 / 5
GE 100	Orientation	1 / 1
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ADA 134	Designing with Digital Media	3 / 4
ENG 102	English and Composition II	3 / 6
FA 102	Basic Design II	6 / 10
FA 172	Introduction to Art and Culture II	3 / 5
MATH 101	Calculus I	4 / 7
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ADA 263	History of Built Environment I	3 / 5
ARCH 231	Statics and Strength of Materials	3 / 5
GE 250	Collegiate Activities Program I	- / 1
LAUD 190	Summer Practice I	- / 6
LAUD 201	Design Studio I:Site Design	6 / 10

LAUD 221	Introduction to Urban Concepts	3 / 5
LAUD 251	Introduction to Landscape Theory	3 / 5

Spring Semester Credits / ECTS Credits

ADA 264	History of Built Environment II	3 / 5
GE 251	Collegiate Activities Program II	1 / 1
LAUD 202	Design Studio II: Housing	6 / 10
LAUD 232	Landscape Representation	3 / 4
LAUD 241	Plant Material I	3 / 5
LAUD 252	Site Design Techniques	3 / 5
	Elective	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

HIST 200	History of Turkey	4 / 8
LAUD 242	Plant Material II	3 / 4
LAUD 290	Summer Practice II	- / 6
LAUD 301	Design Studio III: Small Town	6 / 10
LAUD 351	Landscape Construction and Materials	3 / 5
LAUD 371	Analysis of Urban Environment I	3 / 5
	Elective	3 / 6

Spring Semester Credits / ECTS Credits

IAED 322	People and Environment	3 / 5
LAUD 302	Design Studio IV: City Center	6 / 10
LAUD 342	Planting Design	3 / 4
LAUD 372	Analysis of Urban Environment II	3 / 5
	Elective	3 / 6

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

LAUD 390	Summer Practice III	- / 6
LAUD 401	Senior Design Studio I: Open Space Network	6 / 10
LAUD 471	Urban Sociology	3 / 5
LAUD 481	Landscape Ecology	3 / 5
	Elective	3 / 6
	Restricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

LAUD 402	Senior Design Studio II: Graduation Projects	6 / 10
LAUD 404	Senior Design Research	3 / 4
LAUD 418	Professional Practice	3 / 5
	Restricted Elective	3 / 6

RESTRICTED ELECTIVES

ADA 134	Designing with Digital Media	3 / 4
LAUD 232	Landscape Representation	3 / 4
LAUD 312	Advanced Modelling Techniques in C.A.D.	3 / 6
LAUD 314	Presentation Techniques	3 / 6
LAUD 324	Morphology and Topology of Urban Spaces	3 / 6
LAUD 362	Making of Urban Landscape	3 / 6
LAUD 374	History of the Gardens	3 / 6
LAUD 421	Realization of Urban Projects	3 / 6
LAUD 441	Realization of Planting Projects	3 / 6
LAUD 442	Interior Planting Design	3 / 5
LAUD 461	Occupancy in Urban Areas	3 / 6
LAUD 462	Contemporary History of Landscape Architecture	3 / 6
LAUD 463	Design Scenarios for Everyday Spaces	3 / 6
LAUD 472	Recent Issues in Human Geography	3 / 6

LAUD 473	Experiencing the City	3 / 6
LAUD 474	Space, Culture and Identity	3 / 5
LAUD 475	Cinema and Space	3 / 6
LAUD 476	Visual Politics of Space	3 / 6
LAUD 481	Landscape Ecology	3 / 5
LAUD 482	Tourism and Nature Conservation	3 / 6
LAUD 483	Environment Philosophy and Ethics	3 / 6

COURSE DESCRIPTIONS

LAUD 190 Summer Practice I
Summer practice giving students basic knowledge about surveying methods, grading techniques and the basic skills of map reading and recognizing topographic symbols. *Credit units: None ECTS Credit Units: 6. Aut (B. Batuman) Spr (B. Batuman)*

LAUD 201 Design Studio I:Site Design
The first stage of the Vertical Design Studio System composed of three different studios: Concept, Context and Form in which the second, third and fourth year students are enrolled. Basics of site design, i.e., understanding and analyzing the project area, characteristics, open space types in cities, landscape elements and design techniques. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: FA 102. Aut (D. Dizdaroğlu, H. Karaca)*

LAUD 202 Design Studio II: Housing
The second of the Urban Design Studios focusing on small scale site planning and design problems that integrate landscape and urban design issues. Preparation of base plans, analysis of spaces, volumetric evaluations and project brief writing defined as integral phases of a design problem. Frequent presentations and studio critiques to develop oral and graphic skills and techniques. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: LAUD 201. Spr (U. Ertem, A. O. Nalbantoğlu)*

LAUD 221 Introduction to Urban Concepts
A conceptual framework as a design reference that can be used to emphasize order in architecture and urban design. The logic of visual and graphic language, ground rules in visual literacy and various concepts of the physical urban environment. *Credit units: 3 ECTS Credit Units: 5. Aut (G. Karabay)*

LAUD 232 Landscape Representation
Perspective drawing with two vanishing points; orthographic drawing, visual representation of natural and built elements in both conventional and creative means, and any urban design and landscape architecture project at various scales and developing technical skills. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: ADA 131 or FA 131. Spr (H. Karaca, S. A. G. Tokol)*

LAUD 241 Plant Material I
Beginning level lecture and field study course covering basic biological structure of plants, their classification and botanical (Latin) names, plants' visual characteristics, ecological requirements and their design use. *Credit units: 3 ECTS Credit Units: 5. Spr (D. Dizdaroğlu)*

LAUD 242 Plant Material II
The second part of plant material course building a general framework to familiarize the students with the variety of Turkey's flora while understanding effects of climate, topography and soil on plant communities. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAUD 241. Aut (D. Dizdaroğlu)*

LAUD 251 Introduction to Landscape Theory
An introductory lecture-based course that aims to build a theoretical basis to understand meaning and scope of landscape architecture and urban design, the major components of landscape architecture such as environmental conditions, human factors, landform and landscape elements; topography, vegetation, water and built material. *Credit units: 3 ECTS Credit Units: 5. Aut (H. Karaca)*

LAUD 252 Site Design Techniques
Principles of site engineering especially knowledge on site grading. Land surveying, office procedures for calculating cut and fill volumes for a construction project, site drainage and erosion control techniques. *Credit units: 3 ECTS Credit Units: 5. Spr (N. Özdöver)*

LAUD 290 Summer Practice II
Summer practice building a familiarity with plant material and their physical properties, to develop a basic understanding about their propagation and maintenance techniques. Carried out in nurseries for a minimum period of 4 weeks. *Credit units: None ECTS Credit Units: 6, Prerequisite: LAUD 241. Aut (B. Batuman) Spr (B. Batuman)*

LAUD 301 Design Studio III: Small Town
The third of the Vertical Design Studio System composed of three different studios: Concept, Context and Form in which the second, third and fourth year students are enrolled. Complexities of the urban environment in the framework of small scale cities, waterfronts or selected districts of metropolitan cities. Proposal of future scenarios and design solutions for those project areas. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ADA 202 or LAUD 202. Aut (F. Erkip, A. O. Nalbantoğlu)*

LAUD 302 Design Studio IV: City Center
The fourth of the Vertical Design Studio System composed of three different studios: Concept, Context and Form in which the second, third and fourth year students are enrolled. Multi-functionality, transportation network, spatial qualities, changes and center - periphery interaction of core areas of larger cities. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: LAUD 301. Spr (K. Arapgirlioğlu, H. Karaca)*

LAUD 324 Morphology and Topology of Urban Spaces
Discussion and analysis of physical principles, functions, relationships, and physical elements of urban spaces. Various techniques/methods to make a typological and morphological study of urban spaces. *Credit units: 3 ECTS Credit Units: 6. Spr (S. A. G. Tokol)*

LAUD 342 Planting Design
Introduction to planting design and its significance in landscape architecture considering its structural characteristics, visual properties, symbolic meanings, psychological effects and sensual experience. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAUD 241. Spr (H. Karaca)*

LAUD 351 Landscape Construction and Materials
Traditional and innovative use of materials many of which offer sustainable options. Construction methodologies layout and detail developments. Introduction to materials used in landscape construction, their design potential and limitations, design details and construction methods. *Credit units: 3 ECTS Credit Units: 5. Aut (N. Özdöver)*

LAUD 371 Analysis of Urban Environment I
Urban settlements throughout different historical periods. Economic, social and physical structure of cities with the guidance of 20th century urban theories, investigations and evaluation methods. Urban-rural, urbanization-urbanism dichotomies, classification of urban settlements and finally variations in urban form and structure. *Credit units: 3 ECTS Credit Units: 5. Aut (K. Arapgirlioğlu)*

LAUD 372 Analysis of Urban Environment II
A lecture-based course aiming to review several urban analysis techniques. A "laboratory" for students in which they can explore analysis techniques at different scales. Macro readings and geographical analyses applied to different actual urban sites. *Credit units: 3 ECTS Credit Units: 5. Spr (D. Baykan)*

LAUD 390 Summer Practice III
Summer practice carried out in two 3-week stages, the first stage focusing on the application of soft material, planting techniques, plant composition and maintenance processes, and the second stage focusing on the application of hard material, in addition to the preparation of bills of quantity and tender documents. *Credit units: None ECTS Credit Units: 6. Aut (B. Batuman) Spr (B. Batuman)*

LAUD 401 Senior Design Studio I: Open Space Network
The fifth of the Vertical Design Studio System composed of three different studios: Concept, Context and Form in which the second, third and fourth year students are enrolled. Design of social, physical, cultural, ecological and morphological networks in various scales. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: ADA 302 or LAUD 302. Aut (K. Arapgirlioğlu, U. Ertem, G. Karabay)*

LAUD 402 Senior Design Studio II: Graduation Projects
The finale of the Vertical Design Studio System composed of three different studios: Concept, Context and Form in which the second, third and fourth year students are enrolled. Urban design and landscape architecture medium of knowledge gained through the undergraduate education via special topics in selected cities. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: LAUD 401. Spr (D. Dizdaroğlu, F. Erkip, S. A. G. Tokol)*

LAUD 404 Senior Design Research
A seminar format research course to provide a knowledge basis for the Senior Design Studio, and prepare students for a variety of professional careers. Enhancement of skills of critical and analytical thinking and creative problem solving while developing social awareness. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAUD 401. Spr (F. Erkip)*

LAUD 417 Contract Documents
A lecture/studio course studying the technical and practical aspects of organizing the components of a full set of contract documents for a landscape and urban design project. All working drawings, bills of quantity, organization of the specifications and relationship of these components to the conditions of tender and contract prepared and compiled in a portfolio. *Credit units: 3 ECTS Credit Units: 6. Aut (A. O. Nalbantoğlu)*

LAUD 418 Professional Practice
A lecture/seminar course studying the practical aspects of professional practice with its social, legal, technical, ethical and financial factors. Relations between the designer, contractor and client, office management and organization, tendering and contracting procedures and project management and supervision. *Credit units: 3 ECTS Credit Units: 5. Spr (A. O. Nalbantoğlu)*

LAUD 461 Occupancy in Urban Areas
Relationship between people and the physical settings, particularly urban public spaces. Field studies to analyze cases in different contexts. *Credit units: 3 ECTS Credit Units: 6.*

LAUD 471 Urban Sociology
Compulsory fourth year course to provide a better conceptualization of the components of the city. Dynamics of urbanization process and the economic, social, and cultural aspects of urban phenomena. Spatial repercussions of different aspects of the urbanization process in different environments. *Credit units: 3 ECTS Credit Units: 5. Aut (F. Erkip)*

LAUD 472 Recent Issues in Human Geography
Relations between society, space and social science in a changing world. Recent approaches in analyzing the relationships between society and space in different time and space contexts with an emphasis on time-space geography, agency and structure relationships, local/global dynamics, images and symbols in different cultural contexts. *Credit units: 3 ECTS Credit Units: 6.*

LAUD 473 Experiencing the City
Human experience in various urban settings focusing on the nature of private and public spaces. Analysis of spatial and social factors that define the context of urban life and experience with selected cases. *Credit units: 3 ECTS Credit Units: 6.*

LAUD 475 Cinema and Space
Multiple readings of interior and exterior spaces within the framework of the theory of cinematic montage and cinematic imagery. An analogy between cinema and space design, and the eye and the camera. Design as a cinematographic process. Both creative acts are organized in time through space and perceived through time in space. *Credit units: 3 ECTS Credit Units: 6. Aut (S. A. G. Tokol)*

LAUD 481 Landscape Ecology
Ecology, ecosystems, environmental problems, limits of environment in reference to human activities on land; and tools of analysis, synthesis and assessment methods of landscape structure, function, change and processes to achieve sustainable environments. *Credit units: 3 ECTS Credit Units: 5. Aut (K. Arapgirlioğlu)*

LAUD 482 Tourism and Nature Conservation
Protection and conservation concepts related to natural sites; their importance within the overall ecosystem, in urban ecosystems and for the quality of human life. The symbiotic relationship between natural environments and tourism sector, environmental effects of mass tourism, alternative tourism types, recreation forms. *Credit units: 3 ECTS Credit Units: 6.*

FACULTY OF BUSINESS ADMINISTRATION

Ülkü Gürler, Ph.D., Acting Dean
Eyüp Emre Berk, Ph.D., Assoc. Dean
Aydın Örsan Örge, Ph.D., Assoc. Dean

The Department offers undergraduate and graduate programs leading to B.S., MBA, M.S. and Ph.D. degrees.

The main objective of the programs is to develop the skills required to confront the challenges of a changing world. The successful managers of the future should be able to cope with the complexities of change and an economic environment which is best characterized by keen competition. Thus contemporary business education does not only include teaching the techniques of the profession, but aims at developing a vision, flexibility and adaptability to new situations.

The programs' emphasis is on analytical methods and problem solving rather than a mere description of existing practices. Participative learning is emphasized through case analyses, term projects, simulation and classroom discussions. Computer applications, quantitative analysis and behavioral sciences are integrated into the programs to provide for quantitative and qualitative aspects of management with an emphasis on the former. The graduates are equipped with knowledge, skills and analytical thinking necessary to enhance the effectiveness and efficiency of the enterprises that they will serve.

ACADEMIC STAFF

Levent Akdeniz, Associate Professor
Ph.D., Economics, University of Houston, 1996. Corporate finance, computational economics, numerical methods.

Nüfer Yasin Ateş, Assistant Professor
Ph.D., Erasmus University, 2014. Strategy process, Corporate Entrepreneurship and Behavioral Strategy with a Specific Focus on Middle Managers.

Kürşat Aydoğan, Professor
Ph.D., Finance, Syracuse University, 1986. Investments, corporate finance, international finance.

Ceren Aydoğmuş, Instructor
Ph.D., Business Administration, Hacettepe University, 2011. Organizational psychology, marketing research, financial business applications.

Özgür Tolga Baycan, Instructor
B.S., Computer Technology and Information System, Bilkent University, 2002. Project management, programming languages, business applications, networking applications and principles.

Eyüp Emre Berk, Associate Professor
Ph.D., Operations Management, University of Washington, 1996. Manufacturing/operations strategy, health-care management, inventory theory, quality control, revenue management.

Liwei Cao, Instructor
MBA, University of California, San Diego, 2014. Accounting.

Jacques Couvas, Adjunct Senior Lecturer
MBA, Open University, 2000. L.L.M., University of Leicestez, 2003. Strategy, leadership.

Barış Erman Depecik, Assistant Professor
Ph.D., Marketing, Rotterdam School of Management 2017. Brand portfolio management, rebranding, assortment planning.

Ahmet Ekici, Associate Professor
Ph.D., Marketing, University of Nebraska, 2002. Public policy and marketing, relationship marketing, advertising.

Erdal Erel, Professor
Ph.D., Industrial Engineering and Operations Research, Virginia Polytechnic Institute and State University, 1987. Production control and planning, scheduling, design of manufacturing systems.

Güliz Ger, Professor
Ph.D., Marketing, Northwestern University, 1985. Consumer behavior, culture and consumption.

Celile Itır Göğüş, Assistant Professor
Ph.D., Texas A&M University, 2006. Organizational behavior/human resource management.

Lale Gümüşlüoğlu, Assistant Professor
Ph.D., Hacettepe University, 2005. International business, business policy.

Destan Kandemir, Assistant Professor
Ph.D., Michigan State University, 2005. Marketing research, marketing strategy, marketing management and global marketing.

Zahide Karakitapoğlu Aygün, Associate Professor
Ph.D., Social Psychology, Middle East Technical University, 2002. Organizational behavior, sociocultural value orientations, individualism-collectivism.

Timothy Scott Kiessling, Associate Professor
Ph.D., Management/Marketing, University of Oklahoma, 2005, Global mergers and acquisitions; knowledge transfer of MNCs; corporate top management team; global strategic human resource management.

Billy Mark Marcum, Visiting Associate Professor
Ph.D., Finance, University of North Carolina, 1996.

Zeynep Önder, Associate Professor (on leave)
Ph.D., Housing Finance, Cornell University, 1995. Banking, real estate finance, market microstructure.

Dilek Önkal, Professor
Ph.D., Decision Sciences, University of Minnesota, 1988. Judgemental forecasting, decision analysis.

Aydın Örsan Örge, Visiting Assistant Professor
Ph.D., Organizational behavior, University of Kansas, 2005. Organization processes, enterprenership, discourse analysis.

Süheyla Özyıldırım, Associate Professor
Ph.D., Economics, Bilkent University, 1997. Banking theory, financial intermediation.

Tanseli Savaşer, Assistant Professor
Ph.D., International Economics and Finance, Brandeis University, 2006. Financial economics, international finance, market microstructure.

Banu Sultanoğlu, Instructor
Ph.D., Accounting and Finance, Başkent University, 2017. Accounting, auditing.

Fehmi Tanrısever, Assistant Professor
Ph.D., Information, Risk and Operations Management, University of Texas at Austin, 2009. Operations and finance interface, commodity markets, energy economics, start-up operations and finance.

Ayşe Başak Tanyeri, Assistant Professor (on leave)
Ph.D., Finance, Boston College, 2006. Corporate finance, mergers, banking regulation.

Semih Tartaroğlu, Visiting Associate Professor
Ph.D., Finance, Texas A & M University, 2008.

Mehmet Selçuk Uslu, Adjunct Senior Lecturer
Ph.D., Accounting, Ankara Academy of Economic and Commercial Sciences, 1973. Accounting, cost analysis and management

PART-TIME ACADEMIC STAFF

Uğur Akdoğan, Ph.D., Accounting and Finance, Marmara University, 2006.
Nazlı Akman, Ph.D., Accounting and Finance, Başkent University, 2009. International accounting standards, international financial reporting, accounting education.
Alper Bakdur, MBA, Banking and International Finance, City University, 2004.

Murad Bayar, MBA, Yale University, 2000.
Serdar Bilecen, B.S., Electrical and Electronic Engineering, Middle East Technical University, 1987.
Alaattin Ecer, Ph.D., Finance, Ankara University, 2006.
Bora Kıvrak, EMBA, Business Administration, Bilkent University, 2015.
Melike Meterelliyoz Kuyzu, Ph.D., Industrial and Systems Engineering, Georgia Institute of Technology, 2008.
Emir Taşar, B.S., Business Adminintration, Bilkent University, 2007.
Emrah Uyar, Ph.D., Industrial Engineering, Georgia Institude of Technology, 2008.
Forrest Watson, M.A., International Relations, Bilkent University, 2007.

DEPARTMENT OF MANAGEMENT

Ü. Gürler (Acting Chair), L. Akdeniz, N. Y. Ateş, K. Aydoğan, C. Aydoğmuş, Ö. T. Baycan, E. E. Berk, L. Cao, J. Couvas, B. E. Depecik, A. Ekici, E. Erel, G. Ger, C. I. Göğüş, L. Gümüşlüoğlu, D. Kandemir, Z. Karakitapoğlu Aygün, T. S. Kiessling, B. M. Marcum, Z. Önder, D. Önkal, A. Ö. Örge, S. Özyıldırım, T. Savaşer, B. Sultanoğlu, F. Tanrısever, A. B. Tanyeri, S. Tartaroğlu, M. S. Uslu.

Part-time: U. Akdoğan, N. Akman, A. Bakdur, M. Bayar, S. Bilecen, A. Ecer, B. Kıvrak, M. Meterelliyoz Kuyzu, E. Taşar, E. Uyar, F. Watson.

The aim of the Department of Management is to prepare managers for the global business arena with emphasis on computer-based analytical problem solving techniques for decision making and a strong quantitative approach for managing resources.

UNDERGRADUATE PROGRAM

The undergraduate curriculum exposes the student to basic social sciences through courses in economics, psychology, sociology and history. Courses in mathematics and statistics are included to provide the background necessary for technical skills. Basic courses in the functional areas of business are offered in first, second, and third years. In addition, the curriculum provides advanced elective courses in business functional areas to allow students to focus on areas of their choice.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ECON 101	Introduction to Economics I	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MAN 101	Introduction to Business I	3 / 6
MATH 105	Introduction to Calculus I	4 / 7
SOC 101	Introduction to Sociology	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ECON 102	Introduction to Economics II	3 / 6
ENG 102	English and Composition II	3 / 6
MAN 102	Introduction to Business II	3 / 6
MATH 106	Introduction to Calculus II	4 / 7
PSYC 100	Introduction to Psychology	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ECON 221	Introduction to Probability and Statistics I	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MAN 213	Principles of Financial Accounting	4 / 8
MATH 227	Introduction to Linear Algebra	3 / 6
	General Elective	3 / 6

Spring Semester		Credits / ECTS Credits
ECON 222	Introduction to Probability and Statistics II	3 / 6
ENG 206	Business Communications	2 / 5
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
HUM 112	Cultures Civilizations and Ideas II	3 / 6
MAN 256	Introduction to Management Science	3 / 6
MAN 262	Organizational Behavior	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
LAW 313	Business Law	3 / 4
MAN 321	Corporate Finance	3 / 6
MAN 335	Fundamentals of Marketing	3 / 6
MAN 341	Production Management	3 / 6
MAN 361	Organization Theory	3 / 6
Spring Semester		Credits / ECTS Credits
MAN 312	Managerial Accounting	3 / 6
	Major Electives (4)	12 / 24

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
MAN 399	Summer Practice	- / 6
MAN 403	International Business	3 / 6
	General Elective	3 / 6
	Major Electives (3)	9 / 18
Spring Semester		Credits / ECTS Credits
MAN 406	Business Strategy	3 / 6
	General Elective	3 / 6
	Major Electives (3)	9 / 18

MAJOR ELECTIVES

The courses in the elective list can be followed under STARS Academic Units page.

GRADUATE PROGRAM

Master of Business Administration (MBA) Program

The MBA program aims to foster the education of proficient managers and executives who can effectively recognize and "manage" the challenges presented by a continuously changing business environment. The goal is to provide a strong foundation of administrative and conceptual skills to prospective managers who may assume responsibilities of planning, organizing, directing and controlling the operations of public, private, and non profit organizations. The MBA degree can be viewed as extending and enhancing a wide variety of undergraduate experiences, including but not limited to the programs in engineering, economics and social sciences as well as in business. The program's emphasis is on analytical methods and problem solving rather than a mere description of existing practices. Participative learning is emphasized through case analyses, term projects, simulation, and classroom discussions. Computer applications, quantitative analysis and behavioral sciences are integrated into the program to provide for quantitative and qualitative aspects of management. The graduates are equipped with the knowledge, skills and analytical thinking necessary to enhance the effectiveness and efficiency of the enterprises they will join.

Admission: Applicants to the program should have a Bachelor's degree (B.S. or B.A.) and should be proficient in English. Applicants are evaluated on the basis of their GMAT/GRE scores, academic records, letters of recommendation, career goals and an interview.

Degree Requirements: Students admitted to the program will be required to complete a minimum of 48 credit hours of course with a minimum cumulative grade point average of 3.00/4.00.

CURRICULUM

Academic Preparation

Courses		Credits / ECTS Credits
MBA 511	Accounting	3 / 6
MBA 532	Marketing Management	3 / 6
MBA 561	Managing People and Organizations	3 / 6

Compulsory Courses

Courses		Credits / ECTS Credits
MBA 500	Bilcamp	1 / 1
MBA 503	Business Economics	3 / 6
MBA 522	Corporate Finance	3 / 6
MBA 542	Production and Operations Management	3 / 6
MBA 553	Data Models and Decisions	3 / 6
MBA 591	Business Strategy	4 / 8
MBA 592	Business Practice Project	4 / 8
MBA 602	MBA Project	- / 3
	Electives (6)	18 / 36

Master of Executive Business Administration (EMBA) Program

Bilkent Executive MBA program aims to cultivate a strategic perspective in the participants of the program in managing today's global business. Program is designed to build strong executive foundational skill set and an ability to integrate business functional area knowledge to cope with the challenges of the contemporary global business environment.

The program will start with a one week orientation that will be geared towards building soft skills such as working in teams, negotiation, communication and conflict resolution through various activities. The participants will be exposed to foundational courses including management, quantitative methods and financial reporting, marketing and finance. Integrative courses are designed combine strategic material from a number of functional areas and will be thought by multiple instructors. The program concludes with a one week global business application camp and a strategy simulation that will require participants to lead a global company.

The schedule is designed to accommodate the specific needs of the executives. It starts with a three day orientation at the end of September. During the academic year the courses run on Friday afternoons and Saturdays every other week.

Admission: Applicants to the program are required to have a Bachelor's degree (B.S. or B.A.), minimum three years of managerial experience, and proficiency in English sufficient to follow the course material. Applicants should have strong communication and social skills, entrepreneurial and leadership qualities and aim to be top-level executives.

Degree Requirements: Participants admitted to the program will be required to complete a minimum of 41 credit hours of course with a minimum cumulative grade point average of 3.00/4.00.

Dual Master of Business Administration/Master of Science with Tilburg University

The Faculty of Business Administration offers a dual degree-Master of Business Administration/Master of Science (MBA/M.S.) in two years. Students will spend one year at Bilkent University to receive their MBA degree and another year at Tilburg University in the Netherlands to obtain their M.S. degree in the following fields: Financial Management, Information Management, International Management, Logistics and Operations Management, Marketing Research, Marketing Management, Accounting, Strategic Management.

Admission: The application is administered by the Bilkent University Faculty of Business Administration. The applicants with a minimum CGPA of 3.0 out of 4.0 at Bilkent MBA, are interviewed by the faculty members of Bilkent and Tilburg Universities for acceptance. The tuition fee for the M.S. degree at Tilburg University is the regular fee for non-European Economic Area students determined annually. Up to 10 merit-based scholarships are available for the Tilburg M.S. program, which consist of a roughly 40% tuition fee reduction and a monthly allowance of 300 Euros.

MASTER OF SCIENCE and Ph.D. PROGRAMS

The Faculty of Business Administration offers the Masters of Science and the Doctor of Philosophy degrees for those interested in advanced study of the theory and practice of management in three areas **Finance, Marketing,** and **DSOM** (Decision Science and Operations Management).

The mission of the Bilkent M.S./Ph.D. Program in Business Administration is to prepare individuals for research and teaching careers. A high faculty-to-student ratio and active involvement in research throughout the program foster close interaction between students and faculty and accelerate the transition from students to academic. Programs of study designed for the particular needs and research interests of each individual enable the students to master the behavioral, social, economic and mathematical sciences through courses from various departments in Bilkent University. An active exchange program with universities abroad provides additional opportunities for coursework and collaborative research. Visiting scholars and graduate students from abroad add to the diversity of our community.

The research conducted by our faculty covers a broad range of areas of expertise and we welcome graduate students with degrees in a wide range of fields (anthropology, business administration, computing science, economics, engineering, ethnography, mathematics, physics, psychology, statistics etc.).

Master of Science in Business Administration

Admission: Applicants must have a bachelor's degree in business administration, economics, engineering or a related field. They must be fluent in written and oral English, and possess strong quantitative and qualitative skills. All applicants are required to submit GMAT or GRE scores and provide recommendation letters. ALES scores are needed for Turkish applicants. Proficiency in written and oral English must be documented. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements and www.man.bilkent.edu.tr for the particular requirements of the Master of Science programs in business administration.)

Requirements: Students have to complete a minimum of 24 credit hours of course work, write and defend a master's thesis and maintain a cumulative GPA of at least 3.00/4.00. The expected duration of M.S. study is four semesters.

Doctor of Philosophy in Business Administration

Admission: Applicants must be fluent in written and oral English, and possess strong quantitative and qualitative skills. Candidates should submit GMAT or GRE scores and provide recommendation letters. ALES scores are needed for Turkish applicants. Proficiency in written and oral English must be documented. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements and www.man.bilkent.edu.tr for the particular requirements of the Ph.D. program in business administration.)

Requirements: The Ph.D. program consists of a course work of at least 27 credit hours above master's, a qualifying examination, preparation, proposal, and defense of a dissertation based on original research. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The student should maintain a cumulative GPA of 3.00/4.00 throughout the period of study. Course work is tailored according to the field chosen and the specific research needs of the student. The expected duration for Ph.D. study is eight semesters.

COURSE DESCRIPTIONS

MAN 101 Introduction to Business I
This course introduces students to business education. Students will develop a basic notion of 'business' at the beginning of their education, emphasising ethics, globalisation, small business and entrepreneurship. They will be able to identify the main functional areas of business, including management, operations, marketing, finance and accounting, and start to develop an understanding of how they fit together. The course features interactive lectures, documentaries and video cases, and small group discussions. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Ö. Örge) Spr (L. Akdeniz)*

MAN 102 Introduction to Business II
This course carries on introducing students to business computer applications. Students will acquire ICT (Informative Communication Technologies) skills, which they will practice during both in their education and

career life's. Students will be able to prepare advanced documents, evaluate data and perform calculations. In addition, they will be able to conduct simple and complex data analysis using functions and tools in spreadsheet and basic solver applications. Besides, they will gain an insight into automated tasks that can be conducted by writing VBA (Visual Basic for Applications) macros. At the end of the course, students will able to combine their business knowledge with diverse business cases in lab environment. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 101. Aut (C. Aydoğmuş, Ö. T. Baycan) Spr (C. Aydoğmuş, Ö. T. Baycan)*

MAN 211 Principles of Accounting I

This course is especially designed for Law students. The objective is to make them aware of and familiar with financial transactions and information. For this purpose the topics covered in this course are as follows: The accounting environment, basic elements of recording financial transactions, accounting cycle, year end adjustments and closings and the preparation of financial statements. The emphasis will be on the Income Statement and the Statement of Financial Position. Introductory knowledge of how to read financial statements will also be given to the students. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Cao, M. S. Uslu) Spr (L. Cao)*

MAN 213 Principles of Financial Accounting

An introductory accounting course, that covers the accounting environment, basic mechanics of record keeping and reporting of financial statement information. Specifically, the topics covered include the generally accepted accounting principles, the accounting cycle, preparation and reporting of financial statements (balance sheet, income statement, cash flow statement, and statement of shareholders' equity) together with the discussion of individual accounts that are included in those financial statements (i.e. current assets; long-term assets and accounting for depreciation; liabilities and shareholders' equity). *Credit units: 4 ECTS Credit Units: 8. Aut (B. Sultanoğlu, M. S. Uslu) Spr (M. S. Uslu)*

MAN 216 Elements of Finance

An introductory course on the building blocks of financial decision making. Topics include financial system, its functions, institutions and instruments, risk and return, time value of money, valuation of securities, and elements of international finance. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Bakdur) Spr (Staff)*

MAN 256 Introduction to Management Science

Management science is the application of mathematical modeling to decision making in various management contexts. This course introduces students to mathematical model construction, spreadsheet modeling using Excel Solver, and interpretation of Solver output. The topics also include other decision making tools such as decision trees and simulation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 225 or MATH 227. Aut (M. Meterelliyoz Kuyzu) Spr (E. Erel, F. Tanrısever)*

MAN 262 Organizational Behavior

This course focuses on various factors that have an impact on how individuals and groups respond to and act in organizations. Within this context, the course consists of the application of concepts, theories, and empirical results from the behavioral and social sciences to the study of behavior in and around organizations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or SOC 101. Spr (C. I. Göğüş, Z. Karakitapoğlu Aygün)*

MAN 302 Business Forecasting

This course aims to provide the concepts and principles of a variety of forecasting models. Main emphasis is on the establishment of a process for effective forecasting. Within this framework, various smoothing techniques, regression analysis, ARIMA models, and judgmental forecasting issues are discussed in detail. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 221. Aut (D. Önkal)*

MAN 306 Market Research

Regardless of the type of the organization, managers in all functions and at all levels need systematic and dependable information about their operations. More specifically, managers need information about their employees, customers, suppliers, competitors, and macro variables of their environment. In an ever changing and volatile business environment, the task of market research is to provide managers with accurate, reliable, relevant, valid and timely information. In this course, the students will be expose to various research methods that are currently being used in the industry in order to find solutions for problems that various organizations are facing. By the completion of this course, the students should be able to understand the organizational value and context of information gathering, know when to collect primary and secondary data, determine the appropriate data analysis technique, and persuasively communicate/report research results. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 222 and MAN 262. Spr (D. Kandemir)*

MAN 307 Financial Management

MAN 307 is an intermediate level course on the theory and practice of corporate finance. Upon successful completion of the course, students will be able to: master financial vocabulary to communicate effectively with professionals in finance; draw pro-forma financial statements and apply investment rules to make investment decisions; recognize the differing objectives of the firms' stakeholders (such as shareholders, bondholders, managers, employees, customers, suppliers) and evaluate how the differing objectives may affect the decision-making of financial managers; recognize and evaluate the effect of financing decisions on firm value. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321. Spr (B. M. Marcum)*

MAN 312 Managerial Accounting
The aim of the course is to introduce the students to the main issues in management accounting. Special emphasis will be put on decision making at different levels of management, and on data and reports to facilitate the decision making process. Topics covered include: cost volume profit analysis, cost behavior, costing systems, budgeting, unit cost calculations, pricing, variance analysis, responsibility accounting and performance evaluation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 213. Aut (A. Ecer) Spr (B. Sultanoğlu)*

MAN 313 International Accounting and Financial Reporting
Essential knowledge of accounting under International Financial Reporting Standards (IFRS) being applied on a globally consistent basis by developed, emerging and developing countries including Turkey. Major accounting issues in terms of recognition, measurement and disclosure for understanding the rules and techniques of financial accounting on an international basis with a comparison of Turkish Tax Legislation. Understanding the financial reports prepared in accordance with IFRS for publicly traded Turkish companies in Borsa Istanbul (BIST). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 213.*

MAN 321 Corporate Finance
This course aims to introduce the students to the world of finance, through the fundamental concepts, such as time value of money, risk, return, and asset valuation. After taking this course students will be able to measure and analyze the financial performance of a firm, apply the time value of money to solve financial problems, value financial and real asset investments, define and measure risk and rate of return, calculate fair values of bonds and common stocks, and apply capital budgeting techniques. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 213. Aut (K. Aydoğan, T. Savaşer) Spr (A. Bakdur)*

MAN 322 Money and Banking
This course is designed to introduce the theory and practice of money and banking in developing countries. In the first part of the course, money demand and money supply processes and the role of money in an economy will be emphasized. In the second part, the macroeconomics framework will be developed. And finally in the third part, the course will focus on the models of bank behaviour and management. In addition, a wide range of topics from financial institutions to government intervention in financial markets will be covered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 102 and ECON 222. Aut (L. Akdeniz)*

MAN 333 Marketing Principles
An analytical study of marketing as a major business function. Topics include an overview of the marketing system, the marketing concept, market research, market analysis, marketing strategies (segmentation, targeting, positioning), and marketing programs. An examination of how effective marketing strategy and program decisions is based on an analysis of buyer behavior, market structure and competition. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Aydoğmuş) Spr (D. Kandemir)*

MAN 335 Fundamentals of Marketing
The course introduces the students to the fundamental concepts, tools and activities that comprise the marketing function. It overviews the development of marketing thought as well as contemporary issues in marketing. Topics include the marketing concept and orientation, segmentation and positioning, buyer behavior analysis, and marketing mix-product, price, promotion, distribution-decisions. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 101 and ENG 206 and MAN 102. Aut (A. Ekici) Spr (D. Kandemir)*

MAN 341 Production Management
Production management is a functional field of management covering the design, operation, and improvement of the processes and systems employed in the creation and delivery of an organization's products and services. This course intends to be a survey of the operating practices and procedures found in both manufacturing and service delivery firms. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 225 or MAN 256. Aut (E. E. Berk, F. Tanrısever) Spr (F. Tanrısever)*

MAN 361 Organization Theory
This course is to help students obtain in-depth understanding of organizations and organizational effectiveness. By introducing the basic concepts and recent theoretical approaches, the course will help students to develop the capability of understanding, designing, and managing organizations. The course emphasizes both the macro characteristics of organizations such as their structures, technology and environment, and internal processes such as organizational culture, managerial decision making, politics and conflicts. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 262. Aut (N. Y. Ateş, C. I. Göğüş, Z. Karakitapoğlu Aygün)*

MAN 399 Summer Practice
The minimum time for this practice in an organization is four weeks (20 working days). The main objective is to observe a company / institution / organization in an original setting and work on questions relevant to the company / institution / organization on the fundamental areas of Management. *Credit units: None ECTS Credit Units: 6. Aut (A. Ö. Örge) Spr (A. Ö. Örge)*

MAN 401 Managerial Economics
This course introduces economic concepts used in managerial decision making. By the end of the course students will be equipped with basic tools of microeconomics and with experience applying these tools to questions about consumer behaviour, competition among firms, and government policy. Cases and problems will illustrate how economic concepts can be applied to improve corporate strategies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: senior standing. Aut (S. Özyıldırım)*

MAN 403 International Business
International Business differs in important ways from business conducted within national borders. It presents additional critical challenges for managers interested in trade or investments in foreign countries, but it also offers new opportunities in foreign markets. This course emphasizes the use of analytical tools and develops a framework for analyzing the decisions that must be made by organizations interested in doing business internationally. In turn, this framework provides the basis for formulating strategies, structures, and processes that will enable such organizations to succeed in the international business environment. Concepts and knowledge from strategy, international finance, international trade and investment, cross-cultural issues, international politics and law, marketing, human resource management, and other related areas will be combined and focused on how to succeed international business. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335. Aut (L. Gümüşlüoğlu)*

MAN 404 Investment Analysis
The main objective of this course is to help students develop a basic understanding of the theory and practice of investment analysis. The characteristics of financial markets and financial instruments, security trading mechanisms, investment process, pricing models, equity and bond valuation are studied. Students apply what they learn in class to the Istanbul Stock and Bond Markets. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 342 or MAN 321. Spr (S. Tartaroğlu)*

MAN 406 Business Strategy
Business strategy refers to the long-term direction and scope of a firm's activities. This course serves as a comprehensive overview of the analytical tools, methods, and processes of developing, implementing, and evaluating business strategy. From the perspective of top-level management, the course examines how resources and competences of firms are identified and leveraged to create long-term direction and sustainable competitive advantage within their competitive, industry, and macro environmental contexts. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321 and MAN 335 and MAN 341. Aut (T. S. Kiessling) Spr (N. Y. Ateş, T. S. Kiessling)*

MAN 407 Business Plan Development
This course focuses on business plans as a necessary element of starting a business and also prepares the students to participate in business planning in large institutions. The course will go through the process of preparing successful business plans including determining the contents of a plan and reviewing an actual plan. The course will be designed to help the students to incorporate the contents of the core management courses. Upon the completion of the course the students are expected to analyze and prepare the components of a business plan. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321 and MAN 335. Spr (Ö. T. Baycan)*

MAN 410 Innovation Management
Despite the increasing importance of innovation to competitive advantage of organizations in todays' world, few companies master the ability to identify, create and exploit opportunities for innovation on a systematic basis. In this course, all aspects of managing innovation; from recognizing the need and desire to be creative and innovative, using imagination to add value, developing structures, systems and incentives that encourage and implement innovation, will be discussed. The course will center on three themes: ideation/creativity generation techniques, innovation (models, dimensions, degrees and sources of innovation) and strategic management of innovation. In line with these topics, real company cases will be presented and discussed so that students will better understand the significance of leadership and corporate entrepreneurship in managing innovation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 262 and MAN 335. Spr (L. Gümüşlüoğlu)*

MAN 414 Auditing
The primary objective of the course is to distinguish between accounting and auditing through familiarizing the students with the basic auditing concepts. Topics such as types of audits and auditors, audit reports for financial statements, professional ethics, evidence accumulation and verification procedures, internal control and auditing engagements are discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 213 and MAN 312. Aut (E. Taşar) Spr (U. Akdoğan)*

MAN 416 Financial Statement Analysis
This course aims to develop an ability to analyze financial information as an aid to financial decision making. The emphasis will be on the usefulness of information for various groups, such as investor's of the firm, security analysts and creditors. Basic financial statement analysis tools, such as ratio analysis, cross-sectional and time-series analysis, statistical forecasting models will be covered. Part of this course will be devoted to the research and empirical evidence on the impact of financial statement information on asset pricing, efficiency of

the capital markets, debt ratings and corporate restructuring. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 213 and MAN 321. Spr (N. Akman)*

MAN 419 Marketing Strategy and Innovation

Marketing Strategy and Innovation integrates critical aspects of marketing and innovation, and presents marketing as a strategic process driven by value creation for customers. The course focuses on the design and management of all elements of business necessary to define, develop and deliver customer value in the challenging environment of global competition and rapidly changing markets. The course brings together theoretical and practical perspectives with the goal of developing students' skills in conception, development, and execution of a marketing strategy that would allow a firm to serve its customers in a profitable and sustainable way. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335.*

MAN 421 Capital Markets and Institutions

MAN 421 is an introductory course on the theory and practice of financial intermediation. Upon successful completion of the course, students will be able to: analyze how changing economic conditions and regulations are affecting financial institutions in the world and in Turkey; read and interpret financial statements of commercial banks; recognize and analyze the risks that financial institutions face; understand how financial markets (such as bond markets and stock markets) operate. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321. Spr (A. Ecer)*

MAN 422 International Finance

This course introduces financial issues associated with the operation of a firm in the international environment. Specifically, the workings of the foreign exchange markets, the impact of economic policy on exchange rates, the nature of foreign exchange risk, and important aspects of financial management of the multinational corporation will be introduced. The connection to current events as reported in newspapers and journals will be emphasized. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: consent of instructor. Spr (S. Özyıldırım)*

MAN 424 Risk Management

This course aims to introduce the risk management and the derivatives markets. The concept of risk management and the question of why risk management is vital for modem financial institutions will be explored. The topics will include forwards, futures, swaps, options, hedging and portfolio insurance, value at risk. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321. Aut (Staff)*

MAN 425 Corporate Financial Strategy

The primary objective of "Corporate Financial Strategy" is for students to understand the implications of financial theory in real situations (cases) and to be able to analyze and communicate the implications of their analyses to an informed audience. The course outline is organized to include major strategic decisions of corporations such as real options, mergers, restructuring, risk management as well as corporate governance and international finance. A second objective is for students to function in teams for case studies and presentations. A final objective is for students to refine and expand specific skills and use of financial analytical tools in a real-world context. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321.*

MAN 430 Anthropological Marketing

Students learn how to do qualitative research in order to understand markets and consumers. Quoting from a textbook (Mariampolski), "ethnography, with its focus on observed everyday behavior, is quickly becoming the method of choice to identify unmet needs, stimulate novel insights, and create strategies for developing new ideas." The students do research, employing ethical and effective field practices, as well as use the research for marketing and business decisions. The research assignments will also enhance writing and presentation skills. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335.*

MAN 432 Consumer Behavior

A study of the nature and determinants of consumer behavior. Examines how individuals and groups acquire, consume and dispose of goods, and explores the influence of various psycho-sociological factors, such as personality, cognitive characteristics, beliefs, social class and culture on the formation of consumers' attitudes and purchasing behavior. To enhance understanding and prediction of marketplace behavior; and emphasizes the applications to the development, evaluation and implementation of marketing strategies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335 or consent of instructor. Aut (F. Watson)*

MAN 433 Global Marketing and Emerging Markets

Application of marketing concepts and methods to the international marketplace. Problems and decisions involved in marketing across national boundaries are discussed. While focusing on the export marketing, some of the other topics covered include the international environment, export market selection, export market entry strategies, export marketing mix decisions, financing and methods of payment, and the export order and physical distribution. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335.*

MAN 434 Integrated Marketing Communications

This course introduces students to various tools such as advertising, sales promotions, and sponsorships, that marketers use while communicating with their customers. The emphasis rests on strategic planning and

development of marketing communications campaigns, their integration and evaluation. The course combines theory and practice and aims to develop analytical skills necessary for effectively assessing and managing communication needs of companies operating in today's competitive business environment. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335. Spr (B. E. Depecik)*

MAN 436 Services Marketing

The aim of this course is to provide strategic insights to the marketing managers of service firms. To realize the previously given objective, the course focuses on the unique characteristics of service products that differentiate them from manufactured goods and classifies services according to many different variables such as the nature of the service act, method of service delivery. Then, alternative strategies that can be executed to achieve organizational objectives by the marketing managers of different types of service firms are discussed in detail. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335.*

MAN 437 Retail Management

Foundational knowledge of the retail industry. Strategic decisions made by retailers including market, financial, location, and store management strategies. Channel design and management. Retailer activities including the use of big data and analytical methods, assortment planning, pricing, promotions. A discussion of the latest trends in retailing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335. Aut (B. E. Depecik)*

MAN 439 New Product Development

In this course, focus is on the tools and techniques associated with analyzing market opportunities and then designing, testing, and introducing new products and services. Both quantitative and qualitative approaches are covered. In particular, the course covers the new product development process, market entry strategies, how to generate new product ideas, mapping customer perceptions, segmentation, product positioning, forecasting market demand, and product design. The course emphasizes how to incorporate consumers, customers and competitors into all of these aspects of the company's new product development. It is intended for students who are interested in working on new product innovations, both in entrepreneurial firms and in established companies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 335. Aut (D. Kandemir)*

MAN 440 Revenue Management

Revenue management is concerned with two types of demand decision: quality (how to allocate capacity to different market segments, when to withhold a product from sale etc.) and price (how to set prices, how to price across product categories, over time etc.). This course aims to introduce students to the tools and conceptual frameworks of revenue management and its applications in diverse industries such as tourism, hospitality, manufacturing and fashion. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 101 and ECON 225) or (ECON 101 and MAN 256). Aut (E. Uyar) Spr (E. Uyar)*

MAN 444 Special Topics in Finance

The most obvious manifestation of global financial instability is the current banking crisis that began in the U.S. but spread swiftly to Europe, other developed nations, and some developing economies. The creation of exotic financial instruments, the presence of unregulated participants in global markets such as hedge and private equity funds, the failure of rating agencies to properly evaluate novel financial instruments, and the search for higher returns without properly accounting for risk were some of the evident contributors to the crisis, resulting in severe write-offs and even the failure of some of the most visible and highly respected institutions in the financial universe. This course will begin with an extensive and intensive examination of the 2007 crisis of the late '90's and the Turkish crisis of '94. Furthermore, the absence of international financial architecture to prevent global crises, the inability or unwillingness of national regulatory bodies to intervene proactively, and the actions of regulators to mitigate national financial problems will then be examined. *Credit units: 3 ECTS Credit Units: 6.*

MAN 446 Supply Chain Management

This course covers the essential elements of Supply Chain Management, which consist of controlling and coordinating all the activities that take place from the raw material purchasing to the end customer satisfaction; such as order processing, purchasing, material storage and handling, production scheduling, packaging, transportation and setting customer service standards. How these activities are successfully modeled, planned, and controlled in manufacturing and service industries are addressed. The decisions and strategies regarding transport and inventory, which are the most important parts of Business Logistics for a firm, are highlighted. The course is augmented with case studies to facilitate discussion and to gain an understanding of basic principles. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 341.*

MAN 447 Project Management

The role of projects in organization is getting more important as they become the major tool for reaching strategic goals. This course provides an integrative view of project management. Topics include project selection, project organization, budgeting and cost estimation, progress and performance measurement and evaluation, and project auditing. Project planning and control techniques, such as CPM and PERT, are also covered. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. T. Baycan)*

MAN 451 Decision Analysis
This course is designed as an introduction to the basic concepts, principles and methods of decision making under uncertainty; and covers decision trees as a modeling tool. Role and value of information in decision making is discussed, as well as the concept of risk, and modeling risk attitudes with utility theory. Measuring utility functions, and alternatives to utility theory are also discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 221 and MAN 256. Aut (D. Önkal)*

MAN 462 Human Resources Management
In this course, an academic understanding of human resource management (HRM) is aimed to be given to students who have little or no prior knowledge of the area. The development of HRM as an academic field is critically explored in its historical context, emphassing the differences between personnel management and more contemporary approaches such as HRM. Various functions and dimensions of HRM are defined and discussed, by using case studies and real examples both from Turkey and other countries. Current issues around HRM are also explored. The course eventually aims to simulate answers to the following questions: firstly, why HRM is one of the most significant management functions, and secondly, who does HRM in organizations. This course will be suitable for senior students who want to extend their background in HRM before actually going into the business world, whether or not they plan to work as specialists in this area. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 262. Aut (B. Kıvrak) Spr (B. Kıvrak)*

MAN 467 Cross-Cultural Management
This course is designed for persons who expect to do business in an unfamiliar country or interact with people from other cultures. It recognizes the importance of becoming consciously aware of the fundamental cultural differences that determine everyday life as well as business practice. It is based on the literature of cultural anthropology and applies it to such practical matters as negotiation, the role of deadlines and a culture's sense of time, the structure of organizations, business ethics and corruption, stress management, and business etiquette. Specific countries as well as general principles are discussed. Student groups will investigate a culture of their choice and present their findings to the class. Their written reports will be collected into a Cultural Handbook that will be distributed to the class. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HCIV 102 or HUM 112. Spr (J. Couvas)*

MAN 474 European Union and Turkey: Trade and Policies
This is an interdisciplinary course introducing the students to the European Union and Turkey-EU relations. After a review of EU history and institutional and legal framework, emphases will be on external and internal trade law and implementation of the Customs Union Decision between Turkey and the EU. Full membership criteria are also discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 102. Aut (J. Couvas)*

MAN 483 Entrepreneurial Management
The course aims to give additional tools and knowledge to graduating students to create their own business, or to acquire share of already running business or to become top executives who shape the future of companies in which they work. Lectures will be augmented by case discussions. Groups of students will do a term project in which an entrepreneurial example will be evaluated in detail. Throughout the semester, prominent businessmen and top executives will be invited to the class to share their experience through active participation of the students. *Credit units: 3 ECTS Credit Units: 6.*

MAN 485 Real Estate Finance
This course deals with the central issues in real estate finance and investment. Typical policies and procedures used in financing of residential, industrial, and commercial properties are discussed. Topics include methods of measuring rates of return, feasibility and appraisal processes, risk analysis, equity and debt financing vehicles. Real estate investment trusts and mortgage backed securities are also covered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 342 or MAN 321.*

MAN 492 Business Studies and Practice
This course is designed to enable students to connect their theoretical learning in various areas of business and the business world in practice. To that end, the students in this course will find the opportunity to engage with and experience first-hand an actual business that will serve as a "host company". The focus area of this engagement (for example, a business problem, process, or an achievement) will be negotiated and determined in advance among host company officials, course coordinator, and the Faculty management. Following a period of in-class preparation, student teams will then be expected to conduct an applied field study are expected to be supported and contextualized through a general analysis of the host company and the industry in which it operates. In addition to various interim assignments, the end of semester deliverables for the course are a written presentation of the findings in the form of a practicum report, and an oral presentation to be delivered to the course coordinator, company officials. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MAN 321 and MAN 335 and MAN 341.*

MAN 509 International Business
This course will provide an understanding of international business as an essential part of Globalization. The international business environment will be evaluated in economic, cultural, political, and legal aspects to explore how international businesses are initiated and conducted. Economic Integration among nations will be discussed

with emphasis on Europe. Methods of entry into foreign markets via licensing, franchising, joint ventures, coventures, and foreign direct investment will be reviewed providing actual real life examples. *Credit units: 3 ECTS Credit Units: 8.*

MAN 525 Financial Economics
This course covers the theoretical foundations of modern financial economics. The focus is on financial markets and the valuation of financial claims traded in those markets, under discrete time models. Topics analyzed include models of consumption and investment decisions under uncertainty; risk aversion; stochastic dominance; mean variance theory; equilibrium models of asset pricing (CAPM, ICAPM, APT); linear multifactor models; and incomplete markets. *Credit units: 3 ECTS Credit Units: 8.*

MAN 590 Pro-Thesis Seminar
Credit units: None ECTS Credit Units: 1. Aut (A. Ekici) Spr (A. Ekici)

MAN 593 Research Paper I
Credit units: None ECTS Credit Units: 3. Aut (A. Ekici) Spr (A. Ekici)

MAN 594 Research Paper II
Credit units: None ECTS Credit Units: 3. Aut (A. Ekici) Spr (A. Ekici)

MAN 599 Master's Thesis Project
Credit units: None ECTS Credit Units: 56. Aut (A. Ekici) Spr (A. Ekici)

MAN 604 Quantitative Business Research
The course covers various aspects of survey designs and analysis issues including sampling questionnaire design and construction, interviewing techniques and analytical strategies of survey data, a general survey of social science research techniques. Experimental and non-experimental research designs, measurement theory, reliability and validity, and an overview of statistical evaluation procedures are discussed. *Credit units: 3 ECTS Credit Units: 8.*

MAN 605 Qualitative Research
This course aims to introduce students to the philosophical foundations, design, conduct, and presentation of qualitative research. Issues of quality and methods of data collection, analysis, and interpretation will be emphasized. The course focuses on enabling students to experience the research process in the course of learning how to plan, execute, and evaluate qualitative research. Assignments and a term project provide experience and practice in data collection, analysis, and presentation. In this way, the role of various creative skills, including oral and written skills, in gathering, interpreting, and reporting on qualitative data are also emphasized. The seminar aims to provide an opportunity for learning from each other and by interacting with others in the class while students present materials and critically evaluate and discuss the readings. Students are encouraged to develop research relevant to dissertation or other projects of interest. *Credit units: 3 ECTS Credit Units: 8.*

MAN 607 Philosophy and Epistemology of Scientific Inquiry
This seminar aims to introduce students to the philosophical and epistemological foundations of science and scientific inquiry, fundamental issues distinguishing positivist versus post positivist approaches to research, and the types and issues of research design Following a study of philosophy of science, epistemological issues, and alternative approaches, methodology and design (surveys, experiments, interpretive research) issues are discussed. Assignments, presentations, and term papers provide exposure to fundamental issues as well as practice in critical reading and thinking about a) scientific inquiry, b) evaluation ("goodness") of research, and c) research methodology. The seminar provides an opportunity for thinking through and presenting well-developed thoughts about issues of science and research and learning from each other while students present and discuss the readings. *Credit units: 3 ECTS Credit Units: 8.*

MAN 627 Seminar in Corporate Finance
It is a doctoral seminar course covering major theories and empirical studies that have been developed in the area of corporate finance. The aim is to teach a class that will generate research ideas. *Credit units: 3 ECTS Credit Units: 8.*

MAN 628 Advanced Empirical Finance
It is a doctoral seminar course covering major theories and empirical studies that have been developed in the area of investment theory. The aim is to teach a class that will generate research ideas. *Credit units: 3 ECTS Credit Units: 8.*

MAN 629 Seminar in Financial Intermediation
It is a doctoral seminar course covering major theories, recent developments and empirical studies that have been developed in the area of financial intermediation. The aim is to teach a class that will generate research ideas. *Credit units: 3 ECTS Credit Units: 8.*

MAN 633 Seminar in Marketing Strategy
This course is designed to provide doctoral students with a foundation in marketing strategy research. This course will identify, review, and critique a variety of theoretical perspectives that can be applied to areas including firm capabilities, marketing channels, strategic alliances, and firm boundaries. *Credit units: 3 ECTS Credit Units: 8. Spr (A. Ekici)*

MAN 634 Consumer Behavior Theory I
This course deals with the understanding of the behavior, attitudes, preferences and decision making processes of people as consumers and psychological theories underlying consumer behavior. Some strategic implications of consumer preference formation, judgment and decision making are also addressed. Understanding consumers is a critical component of marketing to implement efficient marketing strategies. Principles from psychology as well as other social sciences are integrated to analyze consumer behavior. *Credit units: 3 ECTS Credit Units: 8.*

MAN 636 Consumer Behavior Theory II
This course details with the understanding of the behavior, attitudes, preference and decision making processes of people as consumers and the psychological theories underlying consumer behavior. Some strategic implications of consumer preference formation, judgment and decision making are also addressed. Understanding consumers is a critical component of marketing to implement efficient marketing strategies. Principles from psychology as well as other social sciences are integrated to analyze consumer behavior. *Credit units: 3 ECTS Credit Units: 8.*

MAN 639 Special Topics in Marketing I
This doctoral seminar covers major theories and studies in selected areas in the marketing field. The course reviews historical and contemporary approaches in the area and aims equip students with knowledge useful in generating research ideas. *Credit units: 3 ECTS Credit Units: 8.*

MAN 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (A. Ekici) Spr (A. Ekici)

MBA 500 Bilcamp
This is an extended MBA orientation. It will be used to review some background that is important for the program, as well as team building. It will be run as a one-credit orientation course during the week before classes start in September. Possible skills components to be included are calculus review, basic statistics, intermediate excel (modeling), presentation skills, group skills (team work), research skills, leadership skills and emotional intelligence. *Credit units: 1 ECTS Credit Units: 1. Aut (Staff)*

MBA 502 Macroeconomics
Macroeconomic conditions play important roles in managers ' decision and firm performances. For instance aggregate income, unemployment and inflation affect profitability, borrowing rates and investment plans of the firms. The topics that will be introduced are: economic growth, unemployment, inflation, money demand and supply, interest rates, balance of payments, foreign exchange markets and exchange rates. *Credit units: 3 ECTS Credit Units: 6.*

MBA 503 Business Economics
This course summarize the theory and practice of microeconomics for managers. Theory of the consumer and the firm are the primary areas of the course. In addition, different market structure (perfect competition, monopolistic competition, oligopoly and monopoly), choice under uncertainty and some topics in financial economics will be covered. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Akdeniz)*

MBA 504 Financial Risk Management
This course is a graduate level course focusing on the instrument of financial risk management. After taking this course participants will be able to understand the economic functions of derivatives markets and where they fit within the financial intermediation process. More specically they will develop an understanding of the basic instruments like futures, forwards, options and some commonly used exotic derivatives. The course also aims to develop a working knowledge of the hedging strategies that could be implemented by the instruments introduced in the course. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

MBA 506 Special Topics in Operations Management
This course aims to provide students with the basic theoretical and practical knowledge needed for comprehension of management models in energy markets. Students will understand how liberalized energy markets are organized and operated in the US, Europe and in Turkey. Starting from prerequisite knowledge, students will develop appropriate understanding of energy markets including financial and physical delivery of energy; as well as how risk management can be applied in these markets. Students will also learn about trading, hedging, speculation and arbitrage in financial markets. *Credit units: 3 ECTS Credit Units: 6.*

MBA 507 Special Topics in Managerial Skills
Conflict Management presents conflict management and negotiation theory, strategies, and styles within an employment context. The course will go over a different topic each week. In addition to the theory and exercises presented in class, students practice conflict management with case studies and some simulations that cover

a range of topics. Students also learn how to deal with the difficult situations, which include aggressiveness and emergencies. The course covers conflict management as a first party and as a third party: third-party skills include helping others deal directly with their conflicts, mediation, investigation, arbitration, and helping the system change as a result of a dispute. Learning and grading is based on: readings, case simulations and class discussions, assessments, analysis of the conflicts and writing some short papers. *Credit units: 2 ECTS Credit Units: 4.*

MBA 510 Advanced Competitive Strategy
A comprehensive and integrated exploration of strategic management perspective and skills from a top level executive perspective. Exposition to various analytical frameworks to strategically assess not only the various layers of environment within which firms operate, but also the internal competencies of firms. Based on these analyses, design and development of long-term directions and scope of activities for firms to remain sustainably competitive in their lines of business. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Ö. Örge) Spr (A. Ö. Örge)*

MBA 511 Accounting
In this course, students will be able to aware the need for accounting records and reports and the basic principles underlying the accounting cycle and preparation of financial statements. Emphasis is given to accounting as an aid to managerial decision making. In addition, topics such as budgeting, funds flow and the basics of cost accounting are discussed. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Akman)*

MBA 512 Managerial Accounting
Preparation, analysis, presentation and communication of accounting, financial and business information to provide users of accounting information with the skills necessary to appraise and manage a business. An understanding of how managers within an organization use accounting information in order to plan operations, control activities, and make decisions. Introduction of cost concepts, job-order costing, process costing, cost-volume-profit relationships, activity based and variable costing, segment reporting, profit planning, budgets, standard costs and variance analysis, performance measurement and differential analysis and similar relevant cost information in making alternative choice decisions for different decision-making environments. Emphasis on how accounting acts as an information system and provides data to internal users of a corporation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MBA 511. Spr (M. S. Uslu)*

MBA 513 Financial Statement Analysis
This course introduces the tools of financial and credit analysis. Analysis of the relation between financial accounting data and firm performance is emphasized. Characteristics of accounting ratios and their relations to market and industry factors, time series behavior of earnings and forecasting models are also investigated. *Credit units: 2 ECTS Credit Units: 4.*

MBA 517 Fixed Income Securities
Theoretical and practical aspects of fixed income securities and their markets, specifically the risks of these securities and the tools used for valuation. Concept of risk and time value of money; bond mathematics; analysis of the term structure of interest rates; interest rate derivatives; debt markets and products in Turkey. *Credit units: 3 ECTS Credit Units: 6.*

MBA 519 Financial Institution and Markets
In this course, the history, structure and functions of financial institutions (banks, insurance companies, mutual funds, etc.) as well as central banking are introduced. The existence of money, financial intermediaries, financial markets and the necessity of regulations are discussed within domestic and global context. Topics include why banks and other financial institutions exist, how asset prices are determined, what is the risk and term structure of interest rates and what is efficient market hypothesis. All major markets and their respective financial instruments are studied to develop the necessary quantitative toolset for sensible decision making in an increasingly global economy. *Credit units: 3 ECTS Credit Units: 6.*

MBA 522 Corporate Finance
A course in the theory of corporate finance with emphasis on investment and financing decisions of the firm. Topics include valuation, capital budgeting, capital structure, cost of capital, dividend policy, financial statement analysis, profit planning, financial forecasting, and working capital management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MBA 511. Spr (K. Aydoğan)*

MBA 524 Investment Analysis
Risk and return characteristics of various investment instruments such as common stocks, bonds, convertibles and options are considered. Modern portfolio theory is discussed and related concepts are used in constructing portfolios for individual and institutional investors. Alternative portfolio management strategies and financial analysis and valuation of corporate securities are also covered. *Credit units: 3 ECTS Credit Units: 6.*

MBA 526 International Finance
This course introduces the environment, theory and practice of international finance. The major topics covered are: the foreign exchange market and price elasticities of trade, the Keynesian Model of Income and the trade balance, the Monetary approach to the balance of payments, introduction to capital mobility: The Mundell-Fleming model. In the second part of the course international monetary system, the European monetary system,

financial liberalization and stabilization in LDC's are covered. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Özyıldırım)*

MBA 531 Marketing Research
After a brief review of the examination of marketing information needs and resources including the collection and dissemination of primary and secondary data, this course focuses on quantitative research in marketing. More specifically, this course discusses problem definition, research design, sampling techniques, data collection and analysis. An overview of methods of measuring consumer reactions to project characteristics, effectiveness of advertising, and other promotional devices are also discussed. *Credit units: 3 ECTS Credit Units: 6.*

MBA 532 Marketing Management
Survey of the marketing concept, consumer behavior, segmentation, marketing research, competitive analysis, and marketing decisions involving products, price, distribution and promotion are discussed in this course. Analytical, strategic and decision making aspects are emphasized. Cases are used for application of the principles discussed. *Credit units: 3 ECTS Credit Units: 6. Spr (G. Ger)*

MBA 535 Consumer Behavior I
This course introduces micro aspects of consumer behavior and its implications for marketing strategy. Students will be able to discuss consumer needs and motivations, exploring both the rational and emotional bases of consumer actions. Moreover, students will be able to aware how consumers learn, store and recall information about products, form attitudes and make decisions about consumption activities. *Credit units: 3 ECTS Credit Units: 6.*

MBA 542 Production and Operations Management
This course familiarizes the student with the nature and content of methods of quantitative analysis employed in production/operations management decision making; enables him/her to identify, formulate and solve operations management problems that s/he may encounter in his/her professional careers. Course themes include strategic impact of operations management; global trends/practices in operations management; product/service design and development; design of production and work systems; total quality management; supply chain management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MBA 553. Spr (E. E. Berk)*

MBA 544 Revenue Management
Revenue management has been described as "providing the right product to the right customers at the right time at the right price." More specifically, it is a demand management tool that hepls the firm to manage its interface with the market. This course will enable you to successfully apply revenue management practices to appropriate industries.
Credit units: 3 ECTS Credit Units: 6.

MBA 546 Supply Chain Management
This course introduces the essential elements of Supply Chain Management, which consist of controlling and co-ordinating all the activities that take place from the raw material purchasing to the end customer satisfaction; such as order processing, purchasing, material storage and handling, production scheduling, packaging, transportation and setting customer service standards. Students will be able to aware how these activities are successfully modeled, planned, and controlled in manufacturing and service industries are addressed. They will also discuss decisions and strategies regarding transport and inventory, the most important parts of Business Logistics for a firm. The course is augmented with case studies to facilitate discussion and to gain an understanding of basic principles. *Credit units: 3 ECTS Credit Units: 6.*

MBA 548 Project Management
In this course, students familiarizes the project management area from a management perspective. Topics include project selection, project organization, budgeting and cost estimation, and project auditing. Project planning and control techniques, such as CPM and PERT, are also covered. *Credit units: 3 ECTS Credit Units: 6.*

MBA 551 Probability and Statistics
Uncertainty is a key concept in business decision making. Given the incomplete information in their environments, business decision makers are confronted with the challenging task of making "good" decisions in the face of uncertainty and risk. Probability provides the mathematical language of uncertainty; while statistics provides a toolbox for the collection, analysis and synthesis of data to aid in decision making. Within this framework, this course aims to provide the concepts and principles of a variety of introductory statistical tools and techniques. The emphasis of this course is on the themes of testing hypothesis, correlation and regression, analysis of contingency tables, analysis of variance, and time series. *Credit units: 3 ECTS Credit Units: 6.*

MBA 553 Data Models and Decisions
This course introduces students the techniques of management science and models to think structurally about decision problems, make more informed management decisions, and enhance decision-making skills. Topics include linear, discrete, and non-linear optimization and simulation modeling, as well as multi-criteria optimization. Spreadsheet models and spreadsheet-based software packages will be used extensively. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Erel)*

MBA 558 Marketing Communications
The course will provide students the knowledge and insight to use the marketing communication tools more effectively. The course covers the key strategic and tactical aspects of a large set of communication campaigns that ran across various platforms (e.g., TV, print media, Internet). The course is designed for MBA students who want to i) develop an understanding of the different types of communication tools, ii) analyze the key drivers for successful marketing communications programs, iii) design an effective marketing communication campaign, iv) apply specific tools and approaches to evaluate the effectiveness of communication campaigns from the business, regulatory, social & ethical points of view. In addition, the course also aims to improve team working skills, promote critical and analytical thinking, and enhance decision-making and problem-solving skills. *Credit units: 3 ECTS Credit Units: 6.*

MBA 559 Business Communication
This course aims to provide you with the opportunity to enhance and update your communication skills that will increase your competence in the job market as it has gained greater significance in today's business context. Leading corporations of today seek employees who are effective communicators with good interpersonal skills, that enable beter cooperation and productivity in a business setting, therefore, becoming a professional communicator is important for the international success of corporations and employees. *Credit units: 3 ECTS Credit Units: 6.*

MBA 561 Managing People and Organizations
Managing successfully in the chaotic and dynamic world of 21st Century business demands a wide range of management skills and understanding. This course familiarizes students to these new skills and understandings in its three major components: (1) The Fundamentals of Modern Management: concepts, theories, and models of effective management. (2) Competing by Design: organizational structure as the critical tool for implementing corporate strategies. (3) The Management of Organizational Behavior in order to achieve a competitive advantage. *Credit units: 3 ECTS Credit Units: 6. Aut (C. I. Göğüş)*

MBA 562 Human Resource Management
Human resource management (HRM) is one of the major functional areas in management. It is now widely accepted that all managers need to be aware of HRM to successfully deal with various managerial issues. In this course, it is aimed to give MBA students with little or no prior knowledge of HRM an academic understanding the subject. The development of HRM as an academic field is critically explored in its historical context, with a special emphasis on the differences between personnel management and HRM. Various functions and dimensions of HRM (i.e. recruitment and selection, training and development, performance management, etc.) are defined and discussed, by using case studies and real examples both from Turkey as well as from abroad. Contemporary issues around HRM (e.g. discrimination and diversity, downsizing, industrial relations, etc.) are also explored. Upon successful completion of the course, students will be able to answers to the following questions: firstly, why and how is HRM one of the most significant management functions? and secondly, who does HRM in organizations? *Credit units: 3 ECTS Credit Units: 6.*

MBA 568 Enterpreneurship and Innovation Management
This course covers approaches to the study of entrepreneurship and discusses challenges that companies face in identifying, creating and exploiting opportunities for innovation on a systematic basis. Within this context, family businesses and the private sector development and innovation in Turkey will also be explored. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Bayar)*

MBA 582 New Product Design and Marketing
New products and services are vital to the success of all companies and their brands. However, innovation is risky and most new products fail in the marketplace. Ineffective marketing is the primary cause of new products failures whose financial impact to the economy is significant. Thus, expertise in the marketing and design of new products is a critical skill for all managers, inside and outside of the marketing department. In this course, we focus on the tools and techniques associated with analyzing market opportunities and then designing, testing and introducing new products and services. Both quantitative and qualitative approaches are demonstrated. In particular during the course, students will analyze real case studies and competitive team projects to apply the new product development process, market entry strategies, how to generate new products ideas, mapping customer perceptions, segmentation, product positioning, forecasting market demand, and product design. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Kandemir)*

MBA 591 Business Strategy
Business strategy is concerned with managing the competitive position and long-term development of the enterprise in order to ensure its survival and success. In this capstone course, students will be able to synthesizes the previous training in functional areas to address the evaluation, formulation and implementation of corporate and business level strategies in relation to the firm's environment. Students also acquire familiarity with the principal concept s, frameworks, and techniques of corporate and business strategy and strategic management; gain expertise in applying these concepts, frameworks, and techniques in order to discuss the reasons for good or bad performance by an enterprise; and generate, evaluate and recommend strategy options for an enterprise.

Credit units: 4 ECTS Credit Units: 8, Prerequisite: MBA 503 and MBA 522 and MBA 532 and MBA 542. Spr (T. S. Kiessling)

MBA 592 Business Practice Project

The business practice course will require students to either complete a management consulting project or a business plan for an organization (company, government branch, NGO, or non-profit enterprise). Projects will be completed in groups of three or four. In this course, students will be able to propose a structured analysis, a decision support tool, a report, and/or other deliverables dictated by the organization in their terms of reference with the students. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: MBA 503 and MBA 522 and MBA 532 and MBA 542. Aut (S. Bilecen)*

MBA 595 Project Risk Management

Managing risks is a key element of effective project management in which proactive approaches are crucial. Project managers must assess each risk and develop a response to the risk. In this sense, risk management is one of the best methods of being proactive for project managers. This course introduces learners to widely accepted risk assessment, management, and control practices using effective tools and techniques. *Credit units: 3 ECTS Credit Units: 6.*

MBA 602 MBA Project

This course is designed to guide students to study a business related-research topic. Students must complete a written project during this course. *Credit units: None ECTS Credit Units: 3, Prerequisite: MBA 503 and MBA 522 and MBA 532 and MBA 542. Aut (E. E. Berk) Spr (E. E. Berk)*

MBA 631 Markets and Competition

Competitive Marketing Strategy is a rigorous course that focuses on the vital skills that all business managers need to know in order to create winning strategies as you face competitive forces at the product and service level. The premise of the course is that firms are successful when they implement strategies that create and capture value. Thus, the objectives of the course are to learn how to (a) analyze competition, category, company, customers and consumers in specific marketplace situations; (b) create strategies that maximize competitive advantages in gaining economic profit; and (c) formulate plans to implement those strategies. You'll not just be developing strategy; you will also learn to become a strategy critic when you serve on an executive board examining, questioning and voting on another student team's strategic plan for a case study. In addition, you will gain valuable experience as you fine-tune verbal and written presentation skills. The course consists of lectures and case presentations. Topics covered include both the process and content of strategic action and interaction; measuring and mapping value; strategic models; brands and other major sources of competitive advantage; methods for comparing competitive offers and strategies; scenario analysis; competitive signaling and competitive intelligence. *Credit units: 3 ECTS Credit Units: 6.*

MBA 634 Strategic Behavior and Competition

The dynamics of entry and the impact of global competition, the strategic dynamics of competitive markets, the primary sources of competitive advantage (local and global), managing competitive interactions through cooperation and preemption, bargaining situations, the impact of information distribution, financial implications of strategic economics. The roles of technology, government policies, and business strategies in shaping these rapidly changing markets, paying particular attention to the roles of regulation and competition, and the likely evolution of technology, public policy, and market structures. *Credit units: 3 ECTS Credit Units: 6. Spr (S. Özyıldırım)*

MBA 672 Leadership for International Managers

This course aims at famializing students with the knowledge and skills for recognizing leadership patterns and developing competencies and attitudes that will enhance their own competitiveness in the corporate arena and contribute to developing their personal managerial styles. It combines management theory and practical tools used by managers to carve a leading role for their organizations - Whether commercial enterprises or not for-profit organizations - in the global environment, taking into consideration the impact of cultural diversity and the increasing importance of the emerging markets on drawing and implementing international strategies successfully. *Credit units: 2 ECTS Credit Units: 4.*

MBA 673 International Business Strategy

Business conducted internationally entails the consideration of a far greater range of variables and associations than business conducted in the home country. Accordingly, in this course, students are able to learn their environment, markets, institutions, challenges, strategy, and operations of international and cross-cultural business. Upon conclusion of this course, students should: (a) become sensitized to the urgency and challenges of international business for the contemporary enterprise; (b) have substantial understanding of fundamentals of international business with respect to major world markets, their environments and consumers; (c) understand basic managerial requirements for the successful performance of firms in international business; (d) be able to fit in quickly and perform in the international business operations of any firm. *Credit units: 2 ECTS Credit Units: 4.*

MBA 679 Managing Through Social Media and Networks
The course will examine the value of social media and networking to managers and companies, looking at this phenomenon from different angles-business, socio-economic, political, technological, regulatory. Guest speakers with experience on the subject will complement the understanding of social communications and interactions. The aim for the completion of the course is that students, individually or in small groups, will develop a business project in which social media will play a key role. *Credit units: 3 ECTS Credit Units: 6. Spr (J. Couvas)*

EMBA 502 EMBA Project
This applied course enables participants to put into practice the various functional area knowledge that they gained in their courses. With a macro-level strategic focus, this application is designed to enable participants to think about how their learning experiences in the program could be leveraged to identify and initiate business change and strategic improvement avenues in their own business and managerial contexts. *Credit units: None ECTS Credit Units: 3.*

EMBA 515 Foundations of Organizational Management
This course serves as a general overview of managerial issues in modern business organizations. Structured around distinct organizational management domains, the course emphasizes the importance of effectively managing 1) employees (individuals and teams/groups), 2) organizational processes (motivation, leadership, communication, and learning), and 3) macro organizational design issues (structure and culture). The course also aims to serve as a platform for participants to start reflecting on their ongoing managerial practice, and comparing and connecting their practical managerial experience with the theoretical knowledge on organizational management that they are going to be exposed to in the course. *Credit units: 5 ECTS Credit Units: 12. Aut (A. Ö. Örge)*

EMBA 516 Competitive Strategy
The main purpose of the course is to develop knowledge skills and abilities concerning the fundamentals in strategic management. The general objectives of the course are to introduce to the key principles of strategic of management, develop an understanding of the concepts, skills, and abilities that make strategies successful, develop an awareness of the critical importance of industry and competition analysis, develop knowledge and skills for evaluating strategic options in corporate growth decisions, involve in a variety of activities that will develop the ability to apply the concepts. *Credit units: 5 ECTS Credit Units: 12.*

EMBA 521 Business Law
The participants of this course will learn the legal system and how to use legal advise for managerial decisions. Topics covered include principals of obligation law, concepts of "obligational relationship"' and "obligation", sources of obligations, formation and validity of legal transactions; particularly contracts, representation, torts and unjust enrichment. Basic concept of commercial enterprises law and negotiable instruments law, Partnerships and corporations, different aspects of public companies, legal issues related to competition, Principals of bankruptcy law, forcing of payments of debts, order of payment, forced sale and bankruptcy, Legality, sources and application of the criminal laws. General theory of crime; elements of crime, criminal responsibility; punishment, new perspectives in criminal law, especially in commercial criminal law area. *Credit units: 3 ECTS Credit Units: 7. Spr (M. Ç. Manavgat)*

EMBA 525 Managing Systems Effectively
One of the key responsibilities of today's global managers is to orchestrate the multitude of actors, resources and processes of business value creation systems. Based primarily on an operational perspective, this course aims to shed light on and integrate various interdependent facets of value creation to instill in participant a holistic and practice-oriented appreciation of issues in modern business systems management. With this goal the course examines key topics including supply chain, operations and logistics management; strategic human resource management; and, IT and managerial reporting processes. *Credit units: 3 ECTS Credit Units: 7. Aut (B. Sultanoğlu)*

EMBA 535 Foundations of Quantitative Methods and Financial Reporting
This course is built around fundamental quantitative and reporting tools to help executives become informed and strategic users of the managerial data supplied to them. To that end, participants are first introduced a framework for thinking about problems involving uncertainty and, building on this framework, and developing quantitative tools for analyzing and interpreting data. This analytical framework is also supported by various spreadsheet applications for managerial use. Building on this analytical foundation, participants then learn how to examine accounting records and reports and the basic principles underlying the accounting cycle and preparation of financial statements, with a general focus on how accounting can be used as an aid to strategical managerial decision making. *Credit units: 5 ECTS Credit Units: 12. Aut (B. Sultanoğlu)*

EMBA 545 Foundations of Financial Management
Participants of this course will develop a basic understanding of the financial management issues and problems in business organizations. To this end, the participants are first introduced the general functioning of the aggregate macroeconomic environment, and how and through which channels international financial environment affects the local economy. The course then covers the role and functioning of the capital and money markets as a device

for the allocation of resources, the channeling of investable funds, and reallocation of risk. Finally, the course involves a basic introduction to financial mathematics and how financial securities are priced. Topics covered include interest rates, basic financial instruments, stock and bond pricing, concepts of return and risk and how they affect the managerial decision making process. *Credit units: 5 ECTS Credit Units: 12. Spr (K. Aydoğan)*

EMBA 546 Strategic Financial Management

This course is designed around the question of how to create value for your company and increase financial performance through strategic decisions such us investing in real assets with a through understanding of the risks involved, optimal mix of financing and how it relates to the markets and people, how to allocate financial resources among various stakeholders. *Credit units: 3 ECTS Credit Units: 7. Aut (A. B. Tanyeri)*

EMBA 547 Decision Analysis

This course integrates the managerial decision making process under uncertainty and many stakeholders through strategic financial decisions. Founded on descriptive and prescriptive approaches, it covers models in decision making, heuristics and biases, individual versus group decision making and tools for decision support. *Credit units: 2 ECTS Credit Units: 5. Aut (Staff)*

EMBA 555 Foundations of Marketing Management

This course is crafted around the core elements and tools of marketing , such as market-focused culture, customer and competitor analysis, value delivery, pricing, relationship management, brand management, marketing communication and marketing analytics. For these purposes, the participants are introduced various frameworks to better understand and manage the nature and determinants of consumer behavior, branding, and sales management techniques. The course also provides opportunities for participants to reflect on and apply the course contents in their own business and managerial contexts. *Credit units: 5 ECTS Credit Units: 12. Spr (A. Ekici)*

EMBA 556 Managing Markets, Growth and Change

In today's increasingly complex and dynamic global business environment, one haunting management challenge is to continually nurture market responsiveness and adaptation as key business competences. To help participants address these challenges, the course aims to examine various processes through which successful business organizations monitor, internalize, and respond to market dynamics. With this focus, the course examines topics such as market research; marketing strategy; new product development; innovation; business growth management; and, organizational change management. *Credit units: 5 ECTS Credit Units: 12. Spr (A. Ö. Örge)*

FACULTY OF ECONOMICS, ADMINISTRATIVE, AND SOCIAL SCIENCES

Alp Erinç Yeldan, Ph.D., Acting Dean
Saime Özçürümez Bölükbaşı, Ph.D., Assoc. Dean

The Faculty of Economics, Administrative, and Social Sciences comprises five academic departments:

- Economics
- History
- International Relations
- Political Science and Public Administration
- Psychology

The Departments of Economics, International Relations, Political Science and Public Administration, and Psychology offer programs leading to Bachelor's, Master's, and Doctor of Philosophy degrees, while the Department of History has only a graduate program leading to M.A. and Ph.D. degrees. In addition, the Faculty contributes to interdisciplinary graduate programs that offer M.S. and Ph.D. degrees in the area of Neuroscience.

ACADEMIC STAFF

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Ph.D., Physics, Bilkent University, 1999. Visual Perception, Cognitive Neuroscience.

Hasan Tolga Bölükbaşı, Assistant Professor
Ph.D., Sociology, McGill University, 2007. Political Economy, European Politics, Comparative Politics.

Selver Buldanlıoğlu Şahin, Assistant Professor
Ph.D., Political Science, University of Canterbury, 2008. Contemporary International interventions, Security sector reform, democratisation, peace building after conflict, politics and society of the Balkans and Southeast Asia.

Berrak Burçak, Assistant Professor
Ph.D., Near Eastern Studies, Princeton University, 2005. Ottoman History.

Aaron Michael Clarke, Assistant Professor
Ph.D., Psychology, North Dakota State University, Centre for Visual Neuroscience, 2010.

Jennifer Corbett, Assistant Professor
Ph.D., Cognitive Science, The University of British Columbia, 2007. Visual perception: Perceptual averaging/ensemble encoding; Visual stability; Visual attention, working memory, and executive functions; Spatiotemporal integration; Segmentation and grouping; Multisensory interactions.

Alev Çınar, Visiting Professor
Ph.D., Political Science, University of Pennsylvania, 1998. Nationalism, Gender Studies, Urban Studies.

Çerağ Esra Çuhadar, Associate Professor
Ph.D., International Relations, Syracuse University, 2004. Negotiations and Third Party Intervention, Foreign Policy Analysis, Political Psychology.

Nuh Aygün Dalkıran, Assistant Professor
Ph. D., Managerial Economics and Strategy, Kellog School of Management, Northwestern University, 2012.

Katja Doerschner, Associate Professor (on leave)
Ph.D., Experimental Psychology, New York University, 2006. Perception of surface material, including color, in complex environments, perception of shape and motion.

Özer Ergenç, Visiting Professor
Ph.D., History, Ankara University, 1979. Ottoman Socio-economic History.

Fatma Tahire Erman, Associate Professor
Ph.D., Environmental Psychology, City University of New York, 1993. Rural to urban migration, squatter housing and gender.

Berk Esen, Assistant Professor
Ph.D., Government, Cornell University, 2015. International Political Economy, Democratization and Authoritarian Regimes, State-building, Comparative Historical Analysis, Political Economy of Development, Turkish Foreign Policy, Middle East and Latin American Politics.

Nilgün Fehim Kennedy, Instructor
Ph.D., Sociology, Middle East Technical University, 2005. Sociology.

Tore Fougner, Associate Professor
Ph.D., International Relations, Keele University, 2002. Global Political Economy, Global Governance, International Relations Theory, Critical Theory, Gender, Labour.

Onur Gökçe, Senior Lecturer
B.S., Political Science, Ankara University, 1962. Turkish Foreign Policy, Diplomatic Language.

Ioannis N. Grigoriadis, Associate Professor (on leave)
Ph.D., Turkish Politics, University of London, 2005. Turkish Politics, European Politics.

Gül Günaydın, Assistant Professor
Ph.D., Social and Personality Psychology, Cornell University, 2013. Interpersonal cognition, impression formation, close relationships and mental representations of close relationship partners, affect regulation.

Serdar Ş. Güner, Associate Professor
Ph.D., International Relations, University of Geneva, 1990. Game Theory, Foreign Policy Analysis and Conflict Resolution.

Refet Soykan Gürkaynak, Professor
Ph.D., Economics, Princeton University, 2004. Monetary economics, financial economics, international economics.

Jale Gürzumar, Instructor
MBA, Middle East Technical University, 1986. Business administration.

Kevin Edward Hasker, Assistant Professor
Ph.D., Economics, Northwestern University, 1998. Auction markets, applied microeconomics.

Banu Helvacıoğlu, Adjunct Senior Lecturer
Ph.D., Political Studies, Queen's University, 1988. Politics of identity, European concepts, political theory.

Metin Heper, Professor
Ph.D., Public Administration, Syracuse University, 1971. Turkish politics, comparative state politics and bureaucracy.

Clemens Maximilian Hoffmann, Assistant Professor (on leave)
Ph.D., International Relations, University of Sussex, 2010. Historical Sociology, International Relations Theory, State Formation, Environment, African Politics, Ottoman Empire, Turkish Foreign Policy.

Hande Ilgaz, Assistant Professor
Ph.D., Child Development, Lehigh University, 2011. Children's cognitive, language and social-cognitive development.

Başak İnce, Assistant Professor
Ph.D., Political Science, University of London, 2008. Turkish politics, Comparative politics.

Pınar İpek, Assistant Professor
Ph.D., International Relations, University of Pittsburgh, 2003. International Political Economy, Energy Security, Turkish Political Economy, European Union Energy.

Onur İşçi, Assistant Professor
Ph.D., History, Georgetown University, 2014. Diplomatic History, Cold War Studies, Imperial/Soviet Russian History, Ottoman/Turkish Foreign Affairs.

Aida Just, Associate Professor
Ph.D., Political Science, SUNY Binghamton, 2005. Comparative politics behavior, public opinion.

Daniel Just, Associate Professor
Ph.D., Comparative Literature, New York University, 2005. Sociology of Literature, political theory, Cold War culture.

Mehmet Kalpaklı, Associate Professor
Ph.D., Turkish Literature, University of Washington/İstanbul University, 1992. Ottoman literature and cultural history, Near Eastern languages and literature, modern Turkish literature, theory of literature, use of computers for humanities.

Tarık Kara, Assistant Professor
Ph.D., Economics, University of Rochester, 1996. Game theory, social choice theory, mathematical economics.

Türkan Mine Kara, Instructor
Ph.D., Economics, Hacettepe University, 2002. Methodology in economics, history of economic thought, economic development.

Emin Karagözoğlu, Assistant Professor (on leave)
Ph.D., Economics, Maastricht University, 2010. Non-cooperative Game Theory, Experimental Economics, Behavioral Economics, organizational Economics.

Mehmet Nedim Karakayalı, Associate Professor
Ph.D., Sociology, University of Toronto, 2003. Social theory, cultural studies.

Mirali Khatibi Tabatabaei, Assistant Professor
Ph.D, Psychology, KU Leuven, 2014. Cognitive bias in the processing of painful facial expressions.

Sırrı Hakan Kırımlı, Associate Professor
Ph.D., History, University of Wisconsin-Madison, 1991. Russian and Soviet Studies, History of the Crimea, Volga-Ural Region, and the Caueasus.

Burçin Kısacıkoğlu, Assistant Professor
Ph.D., Johns Hopkins University, 2016. Macroeconomics, Financial Economics, Monetary Economics.

Mehmet Akif Kireçci, Assistant Professor
Ph.D., University of Pennsylvania, 2007. Middle Eastern Modernization; Orientalism.

Edward Kohn, Associate Professor
Ph.D., History, McGill University, 2000. US History, 20th century US foreign relations; Theodore Roosevelt.

Semih Koray, Visiting Professor
Ph.D., Mathematics, Boğaziçi University, 1980. Mathematical economics.

Seçkin Köstem, Assistant Professor
Ph.D., Political Science, McGill University, 2016. International Political Economy, Regional and Rising Powers, Russia, Eurasia.

Paul Latimer, Assistant Professor
Ph.D., History, Sheffield University, 1982. Medieval European history.

Sang Seok Lee, Assistant Professor
Ph.D., University of Oxford, 2014. Macroeconomics.

Syed Fahri Mahmud, Visiting Associate Professor
Ph.D., Economics, McMaster University, 1986. Econometrics, applied econometrics, macro economics.

Jacob Alex Munneke, Assistant Professor
Ph.D., Cognitive Psychology. Vrije Universiteit Amsterdam, 2010. Visual attention, Visual working memory, Value-driven cognition, Binocular vision, Psychopathy, Visual search & Cognitive Neuroscience.

Can Emir Mutlu, Assistant Professor (on leave)
Ph.D., University of Ottowa, 2013. Critical security studies, International political sociology, technology, practices, and materialities of global mobility reglines.

Bilin Neyaptı, Associate Professor
Ph.D., Economics, University of Maryland, 1997. Macroeconomics, monetary economics, institutional economics.

Çağla Ökten Hasker, Associate Professor
Ph.D., Economics, Northwestern University, 1999. Industrial organization, economics of competition and anti-trust, applied microeconomics.

Saime Özçürümez Bölükbaşı, Assistant Professor
Ph.D., Political Science, McGill University, 2005. Comparative politics, European Union politics, politics of immigration and asylum.

İbrahim Özgür Özdamar, Assistant Professor
Ph.D., Political Science, University of Missouri-Columbia, 2006. International Relations Theory, Foreign Policy Analysis, Research Methods, American Foreign Policy, Black Sea Politics.

Oktay Özel, Assistant Professor
Ph.D., History, University of Manchester, 1993. Ottoman socio-economic history, demographic changes, methods and problems in historical writings.

Abdürrahim Özer, Instructor
M.A., International Relations, Bilkent University, 2008.

İbrahim Mert Öztürk, Instructor
Master of International Affairs and Public Policy, Bilkent University, 2004.

Cavit Pakel, Assistant Professor (on leave)
Ph.D., Economics, University of Oxford, 2012. Econometrics.

Fitnat Banu Pakel, Assistant Professor (on leave)
Ph.D., Economics, University of Oxford, 2012. International Trade, Industrial organization.

Ayşe Özgür Pehlivan, Assistant Professor (on leave)
Ph.D., Pennsylvania State University, 2011. Microeconomics, international trade, empirical industrial organization, applied microeconometrics.

Evgeniy Radoslavov Radushev, Visiting Assistant Professor
Ph.D., History, Bulgarian Academy of Sciences, 1982. Ottoman diplomatics and paleography, Ottoman socio-economic, political and ethnocultural history.

Hüseyin Çağrı Sağlam, Associate Professor
Ph.D., Economics, Université Catholique de Louvain, 2003. Macroeconomics.

Ezgi Sakman, Instructor
Ph.D., Social Psychology, Middle East Technical University, 2016. Attachment System and its Activation, Functionality of Insecure Attachment in Cultural Context.

Selin Salman Engin, Instructor (on leave)
Ph.D., Social Psychology, Middle East Technical University, 2014. Family dynamics, coparenting, maternal sensitivity, intervention programs for (co)parenting.

Zeki Sarıgil, Associate Professor
Ph.D., Political Science, University of Pittsburgh, 2007. Turkish Politics, comparative Politics.

Norman Stone, Professor
M.A., History, Cambridge University, 1965. Central European and Russian History, Military History, Economic Systems.

Zerrin Tandoğan, Instructor
Ph.D., Anthropology, Hacettepe University, 1991. Social anthropology, international migration, multi-cultural relations, research ethics, student mobility.

Fatma Taşkın, Associate Professor
Ph.D., Economics, Boston College, 1987. International economics, macroeconomics.

Ann Marie Thornton, Instructor
M.Phil., French Literature, University of Exeter, 1994. Eighteenth-century France, the Enlightenment.

David E. Thornton, Assistant Professor
Ph.D., University of Cambridge, 1991. Medieval history of the British Isles. Anglo-Saxon, Norse and Celtic.

Sübidey Togan, Professor
Ph.D., Economics, Johns Hopkins University, 1972. International economics.

Timothea Toulopoulou, Visiting Associate Professor
Ph.D., Neuropsychology, University of London, 2001. Abnormal Psychology, Biological Psychology, Neuropsychology, Schizophrenia, Behavioral genetics.

Mirza Trokic, Assistant Professor
Ph.D., Economics, McGill University, 2013. Econometric Theory, Time Series Analysis, Bootstrap Techniques.

Dimitri Tsarouhas, Associate Professor
Ph.D., Politics, The University of Sheffield, 2005. European Integration, Political Economy, EU-Turkey Relations, Comparative European Politics.

Meral Uğur Çınar, Assistant Professor
Ph.D., Political Science, University of Pennsylvania, 2012.

Burcu Ünüvar, Instructor (on leave)
M.S., Applied Economics and Finance, Copenhagen Business School, 2003.

Kenneth Weisbrode, Assistant Professor
Ph.D., History, Harvard University, 20th Century American diplomatic history.

Paul Andrew Williams, Assistant Professor
Ph.D., Political Science, University of California, Los Angeles, 1997. International Relations Theory, International Political Economy, Global Environmental Politics.

Alp Erinç Yeldan, Professor
Ph.D., Economics, University of Minnesota, 1988. International economics, development macro-economics, macroeconomic modeling.

Kemal Yıldız, Assistant Professor
Ph.D., Economics, New York University, 2013. Microeconomic theory, Mechanism Design, Choice Theory, Matching Theory.

Mehmet Taner Yiğit, Associate Professor
Ph.D., Economics, University of North Carolina, Chapel Hill, 1999. Macroeconometrics, monetary economics.

Luca Zavagno, Assistant Professor
Ph.D., History, University of Birmingham, 2007. Byzantine History, Medieval History.

PART-TIME ACADEMIC STAFF

Selin Akyüz, Ph.D., Political Science, Bilkent University, 2012.
Ömer Altay, M.A., Economics, Essex University, 1974.
İnci Apaydın, M.S., Operations Research, Middle East Technical University, 1989.
Özlem Ataoğlu, M.S., Psychology, University of Southampton, 2011.
Tuğba Bayar, Ph.D., International Relations, Otto Friedrich University, 2014.
Onur Bilginer, Ph.D., Political Science, University at Albany, 2015.
Gonca Biltekin, Ph.D., International Relations, Bilkent University, 2014.
Esen Çağlar, M.A., Public Administration and International Development, Harvard University, 2003.
Can Eyüp Çekiç, Ph.D., History, Bilkent University, 2016.
Süleyman Kürşat Çınar, Ph.D., Political Science, Ohio State University, 2015.
Gül Çorbacıoğlu Aksak, M.S., Sociology, Middle East Technical University, 2008.
Humberto Deluigi, M.A., Archaeology, Bilkent University, 2015.
Nahide Işık Demirakın, Ph.D., History, Bilkent University, 2015.
İsmail Hakkı Doğankaya, Ph.D., Logistics, Dokuz Eylül University, 2009.
Ferhat Emil, M.A., Economics, Northeastern University, 1984.
Kudret Emiroğlu, B.A., International Relations, Ankara University, 1979.
Merve Ermemiş, M.S., Industrial and Organizational Psychology, Kingston University, 2011.
Burcu Feyzullahoğlu, M.A., History, Bilkent University, 2014.
Sebastien Flynn, M.A., History, Bilkent University, 2015.
Carlos Hernandez Ferreiro, Ph.D., Social and Political Sciences, European University Institute, 2005.
Zeynep Kantur, Ph.D., Bilkent University, 2015.
Ali Hakan Kara, Ph.D., Economics, New York University, 2002.
Göktuğ Kara, Ph.D., International Relations, Bilkent University, 2008.
Müzeyyen Karabağ, M.A., History, Bilkent University, 2013.
Mehmet Barış Kuymulu, Ph.D., Cultural Anthropology, CUNY Graduate Center, 2014.

Fatma Özden Mercan, Ph.D., Department of History and Civilization, European University Institute, 2016.
Bahar Onar, M.A., Economics, Rice University, 2003.
Onur Önol, Ph.D., Medieval and Modern History, University of London.
Nedret Öztan, Ph.D., Clinical Psychology, Ankara University, 1996.
Necdet Pamir, B.S., Petroleum Engineering, Middle East Technical University, 1980.
Abdullah Umut Parmaksız, Ph.D., Sociology, University of Bristol, 2015.
Hasibe İnci Rösch, Ph.D., University of Washington, 1984.
Özlem Sefer, Ph.D., Political Science, Ankara University, 2014.
Mustafa Anıl Taş, M.A., Applied Economics, Finance and Operations Research, Bilkent University, 2008.
Nil Tekgül, Ph.D., History, Bilkent University, 2016.
Gözde Turan, Ph.D., International Relations, Bilkent University, 2015.
Melike Ünal, Ph.D., Department of History, Bilkent University, 2016.
Pınar Ünal, M.A., Economics and Finance, Boğaziçi University, 2010.
Mehmet Süha Ünsal, M.A., History, Akdeniz University, 1996.
Sezen Yaraş, Ph.D., Political Science, Bilkent University, 2016.
Tarık Tansu Yiğit, M.A., History, Ankara University, 2013.
Mustafa Eray Yücel, M.A., Economics, Bilkent University, 2000.

GENERAL SOCIAL SCIENCE COURSES

SOC 101 Introduction to Sociology
Introduces students to the subject matter, major concepts, and theoretical approaches of sociology. Includes readings in the works of both classical and modern theorists. Emphasis is on social organization and stratification, community, power, social change. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Çorbacıoğlu Aksak, N. Fehim Kennedy, J. Gürzumar, D. Just, M. B. Kuymulu, A. U. Parmaksız, H. İ. Rösch, Ö. Sefer, S. Yaraş) Spr (G. Çorbacıoğlu Aksak, N. Fehim Kennedy, D. Just, H. İ. Rösch, Ö. Sefer, S. Yaraş)*

HIST 200 History of Turkey
This course focuses on aspects of Turkey's history with an emphasis on research. It is designed as an interactive course with the objective to investigate events, chronologically short historical oeriods, as well as historic representations. *Credit units: 4 ECTS Credit Units: 8. Aut (C. E. Çekiç, N. I. Demirakın, K. Emiroğlu, M. Karabağ, F. Ö. Mercan, A. Özer, İ. M. Öztürk, M. S. Ünsal) Spr (C. E. Çekiç, K. Emiroğlu, F. Ö. Mercan, A. Özer, İ. M. Öztürk, M. Ünal, M. S. Ünsal, T. T. Yiğit)*

DEPARTMENT OF ECONOMICS

R. S. Gürkaynak (Chair), Ş. P. Akyol, H. Berument, N. A. Dalkıran, K. E. Hasker, T. Kara, T. M. Kara, E. Karagözoğlu, B. Kısacıkoğlu, S. Koray, S. S. Lee, S. F. Mahmud, B. Neyaptı, Ç. Ökten Hasker, C. Pakel, F. B. Pakel, A. Ö. Pehlivan, H. Ç. Sağlam, F. Taşkın, S. Togan, M. Trokic, B. Ünüvar, A. E. Yeldan, K. Yıldız, M. T. Yiğit.

Part-time: Ö. Altay, İ. Apaydın, E. Çağlar, F. Emil, Z. Kantur, A. H. Kara, B. Onar, M. A. Taş, P. Ünal, M. E. Yücel.

Economics is the study of the behavior of economic units, institutions and systems and the choices that they make with respect to the allocation of scarce resources between production and consumption. It is concerned with a wide range of problems that directly affect society: the causes of unemployment and inflation, productivity and economic growth, foreign debt and trade links, and the role of government in market economies.

UNDERGRADUATE PROGRAM

The program leading to the Bachelor's degree in Economics combines training in technical economics with opportunities for a broad and balanced undergraduate education. The program aims to give the students a solid grounding in modern economic theory and accompanying skills necessary for independent and critical thinking which will allow them to acquire an understanding of the Turkish and the world economy. The aim is achieved through a flexible curriculum which is structured to provide the basic social science and quantitative toolbox necessary for all economists in the first two years, followed by a student-tailored curriculum in the last two years during which the students choose a track of study they prefer to complete under economics. These tracks cover all general economics fields including Academics Economics Track which aims to prepare students for a highly quantitative graduate study, Macroeconomics Track which emphasizes topics about the workings of the macroeconomy such as monetary and international economics, Microeconomics Track which focuses on the decision making of individuals and firms in depth, Managerial Economics Track which capturing the synergy issues between management and economics, and finally a General Economics Track which allows the students to explore cross tracks during their studies. All of these general tracks are supported by a range of free electives allowing students to becoming well-rounded social scientists and furthermore university graduates.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 123	Introduction to Computing and Programming	3 / 6
ECON 101	Introduction to Economics I	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 105	Introduction to Calculus I	4 / 7
TURK 101	Turkish I	2 / 2
	Unrestricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
ECON 102	Introduction to Economics II	3 / 6
ENG 102	English and Composition II	3 / 6
MATH 106	Introduction to Calculus II	4 / 7
TURK 102	Turkish II	2 / 2
	Unrestricted Elective	3 / 6
	100 Level Social Science Elective	3 / 6

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ECON 203	Microeconomic Theory I	3 / 6
ECON 205	Macroeconomic Theory I	3 / 6

ECON 221	Introduction to Probability and Statistics I	3 / 6
ECON 225	Mathematics for Economists	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HCIV 101	History of Civilization I	3 / 6

Spring Semester Credits / ECTS Credits

ECON 204	Microeconomic Theory II	3 / 6
ECON 206	Macroeconomic Theory II	3 / 6
ECON 222	Introduction to Probability and Statistics II	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HCIV 102	History of Civilization II	3 / 6
HIST 200	History of Turkey	4 / 8
	Restricted Elective	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

ECON 301	Econometrics I	3 / 6
ECON 363	History of Economic Thought	3 / 6
	Economics Elective	3 / 6
	Restricted Elective	3 / 6
	Unrestricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

	Economics Electives (2)	6 / 12
	Restricted Elective	3 / 6
	Unrestricted Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

ECON 399	Summer Training	- / 6
	Economics Elective	3 / 6
	Restricted Elective	3 / 6
	Transdisciplinary Senior Project	3 / 6
	Unrestricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

	Economics Electives (2)	6 / 12
	Restricted Elective	3 / 6
	Unrestricted Electives (2)	6 / 12

ELECTIVE REQUIREMENTS

Regardless of the track a student has chosen, the elective composition of each student should adhere to the following quotas:

1. One 100 level social science elective.
2. Five restricted electives.
3. Eight unrestricted electives.
4. Six Economics electives.
5. One Transdisciplinary Senior Project.

MINOR PROGRAM

The Minor program in Economics is offered to students who are interested in economics but hold primary interests in other fields. Economics is the study of the allocation of resources and provides an understanding of a very wide range of issues that one faces both in their daily lives and in their careers. By arming the students with the theoretical toolkit as well as the basics of empirical

analysis, and allowing the application of this expanded toolbox in a field elective course, the Minor program in Economics promotes the intellectual growth of the individual student and contributes to them becoming better citizens as well as better professionals. The minor is not only useful for students in fields other than economics who may wish to continue their education with a graduate degree in economics but also for those who wish to prepare for a MBA, graduate studies in other social sciences including law, international relations, public policy and quantitative analysis, as well as those who just want to have a better understanding of the world they are living in.

Prerequisite Courses:

MATH 102 Calculus II or MATH 106 Introduction to Calculus II or MATH 114 Multi Variable Calculus

One of the below requirements

* ECON 101 Introduction to Economics I and ECON 102 Introduction to Economics II
* ECON 103 Principles of Economics
* ECON 107 Principles of Microeconomics and ECON 108 Principles of Macroeconomics

CURRICULUM

Courses		Credits / ECTS Credits
ECON 203	Microeconomic Theory I	3 / 6
ECON 204	Microeconomic Theory II	3 / 6
ECON 205	Macroeconomic Theory I	3 / 6
ECON 206	Macroeconomic Theory II	3 / 6
	ECON 222 or ECON 301	3 / 6
	Elective (Any 300 or 400 level ECON Course)	3 / 6

GRADUATE PROGRAM

Graduate programs in economics aim to train students to enable them to carry out independent research. For this purpose, the programs are designed to ensure that the students get a solid background in both economic theory and the techniques used in empirical research. While the Department offers both M.A. and Ph.D. degrees, the M.A. degree is considered, in principle, as an intermediate step that is passed en route to the Ph.D. The core requirements common to both programs leave little room for choosing the courses to be taken in the first year, but the students are offered considerable flexibility as to their choice of the fields of specialization later on.

Students admitted to graduate studies in the department are expected to have a strong background in undergraduate level economics and some training in mathematics and statistics. Sufficient (though not necessarily a pre-condition) background would consist of an undergraduate degree in Economics, a year-long calculus sequence that includes multivariate analysis, a course in linear algebra, and a course in probability and statistics. (Also refer to the “Graduate Admissions” section in the introduction of this catalog for the general graduate admission requirements.)

Master of Arts in Economics

The curriculum aims to prepare the students toward a Ph.D. degree. However, elective courses and a thesis study in the 2nd year gives the students the opportunity to over take practical training, preparing them for jobs in the government or private sector.

Prospective students must have completed Bilkent University’s requirements for a Bachelor of Arts degree in Economics or approximately equivalent training. Since students will be required to take the same courses as the Ph.D. candidates, similar preparation in mathematics and statistics is generally expected. Degree requirements for Master of Arts in Economics are:

1. The core curriculum for Master of Arts in Economics degree must be successfully completed. The courses in the core curriculum for Master of Arts in Economics include the graduate level Mathematics Review course (ECON 500), Microeconomic Theory (ECON 503-504),

Macroeconomic Theory (ECON 505-506), Mathematics for Economists (ECON 515-516), Probability and Statistics (ECON 509-510), Research Paper (ECON 595-596) sequences, two elective sequences, and Pro-Thesis Seminar (ECON 590) and the Master's Thesis (ECON 599) courses.

2. A Master's thesis must be submitted and successfully defended.
3. A grade point average of at least 3.00 must be maintained for the duration of Master's level work.

CURRICULUM

Courses		Credits / ECTS Credits
ECON 503	Microeconomic Theory I	4 / 7
ECON 504	Microeconomic Theory II	4 / 7
ECON 505	Macroeconomic Theory I	4 / 8
ECON 506	Macroeconomic Theory II	4 / 8
ECON 509	Probability and Statistics I	4 / 6
ECON 510	Probability and Statistics II	4 / 6
ECON 515	Mathematics for Economists I	3 / 7
ECON 516	Mathematics for Economists II	3 / 7
ECON 591	Masters Pre-Thesis Seminar I	- / 1
ECON 592	Masters Pre-Thesis Seminar II	- / 1
ECON 595	Research Paper I	- / 1
ECON 596	Research Paper II	- / 1
ECON 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	Electives (2)	6 / 12

Dual Master of Arts/Master of Science in Economics with Tilburg University

Bilkent University and Tilburg University offer a joint Master's program with degrees granted from both universities to serve the needs of today's modern business world. The flexibility of the program allows students to specialize according to their needs and aspirations beyond the boundaries of a traditional master's program. This joint initiative allows participants to benefit from a wider range of expertise from three different departments, two different universities and two different cultures. The competitive business environment demands specialization that builds on a strong foundation, of which the pillars are sound theoretical knowledge and strong analytical skills. Serving this need, the program offers not only the quantitative rigor, but also the application oriented specialization in highly demanded fields.

The program is a two years dual Master's program. Full time students spend their first year at Bilkent University and their second at Tilburg University. Part-time students have the option to complete their education in Turkey in two years. Students are expected to take 13 to 15 courses and write two Master's thesis. The initial year of the program in Bilkent University sets the groundwork and provides the participants with necessary skills to continue towards the second year in Tilburg University where they specialize in one alternative field. The two Master's theses are completed at the end of the last year, each approved by individual committees in both universities. After the completion of the program the students are granted an M.A. in Economics at Bilkent University and an M.S. degree in one of the following fields at Tilburg University: Economics, Mathematical Economics and Econometric Methods, Operations Research and Management Science, Quantitative Finance and Actuarial Sciences.

Doctor of Philosophy in Economics

The Ph.D. program in economics is a program requiring the attainment of scientific competence in conformity with international scientific standards. Admission to the doctoral program is by written

application and an evaluation by the department. It is expected that admitted students will be adequately prepared in calculus, linear algebra, and statistics. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

All students take a common core curriculum at the outset and later branch out in the desired fields of specialization. The fields may be chosen from fiscal economics, international economics, macroeconomics, mathematical economics, monetary economics, and econometrics. Well-prepared students should anticipate spending approximately two years in course work and another two years in seminars, independent study, and dissertation research. While exceptional progress may make a three-year program feasible, some types of research programs will require at least five years to complete.

A candidate for the Ph.D. degree must:

1. Successfully complete the core curriculum for Ph.D. degree in Economics. The courses in the core curriculum for Ph.D. degree in Economics include the graduate level Mathematics Review course (ECON 500), Microeconomic Theory (ECON 503-504), Macroeconomic Theory (ECON 505-506), Mathematics for Economists (ECON 515-516), Probability and Statistics (ECON 509-510) sequences, two elective sequences, and Pro-Thesis Seminar (ECON 590) and the Ph.D. Dissertation (ECON 699) courses.
2. Successfully complete the course requirements for Ph.D. degree by earning at least 24 credits from the courses listed under “Graduate Electives”. (Some graduate courses offered by other departments may be counted towards this requirement.)
3. Show competence in two comprehensive examinations in macroeconomics and microeconomics within the first three semesters after being admitted to the Ph.D. program.
4. Submit a detailed thesis proposal while taking the ECON 699 course and give a seminar on this work.
5. A paper based on the candidate’s thesis must be accepted or published in a reputable journal before the dissertation can be defended.
6. Submit and successfully defend a dissertation that represents a contribution to knowledge in the field.

Candidates must be in residence for a minimum of three years including the period spent on the Master of Arts program.

CURRICULUM

Courses		Credits / ECTS Credits
ECON 691	Ph.D. Pre-Thesis Seminar I	- / 1
ECON 692	Ph.D. Pre-Thesis Seminar II	- / 1
ECON 695	Research Methods in Economics I	3 / 6
ECON 696	Research Methods in Economics II	3 / 6
ECON 699	Ph.D. Dissertation	- / 160
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
	Electives (6)	18 / 36

During each semester of the second year at least three credit units of electives must be taken. The Ph.D. candidate may also take elective courses for credit in the third and fourth years of study. These electives may include courses from other departments or institutions as well as courses offered by the Department. There is no upper or lower limit on the number of such courses.

COURSE DESCRIPTIONS

ECON 101 Introduction to Economics I
Introduces microeconomic concepts and analysis, supply and demand analysis, theories of the firm and of individual behavior, competition and monopoly, welfare economics. Application to problems of current economic policy. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Kara, Ç. Ökten Hasker) Spr (Ç. Ökten Hasker)*

ECON 102 Introduction to Economics II
An overview of macroeconomic issues: the determination of output, employment, unemployment, interest rates, and inflation. Monetary and fiscal policies are discussed as well as international economic issues. Introduces basic models of macroeconomics and illustrates principles with the experience of Turkish and foreign economies. *Credit units: 3 ECTS Credit Units: 6. Aut (R. S. Gürkaynak) Spr (R. S. Gürkaynak, B. Kısacıkoğlu)*

ECON 103 Principles of Economics
Introduces the basic concepts of micro and macro economics, supply and demand analysis, and economic theories. The implications of economics in regards to social issues and the role of economics in the field of communication and advertising are discussed. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Gürel, H. B. Karabudak) Spr (E. Gürel, H. B. Karabudak)*

ECON 105 Principles of Economics I
Introduction to basic microeconomic concepts. What is microeconomics all about? Economists' approach to current microeconomics issues at the individual household and firm level. Government's micro policies in providing incentive for production, consumption, and technology choice. Current debates on firm behavior, "new economy", and issues of privatization and efficient use of resources. Market organizations, welfare and the firm objectives. *Credit units: 3 ECTS Credit Units: 5. Aut (N. Özkaramete Coşkun) Spr (N. Özkaramete Coşkun)*

ECON 106 Principles of Economics II
An overview of macroeconomic issues. The concept of the gross national product and its determination. Theories of macroeconomic equilibrium and government policies to effect the gross national product, employment, investment, and foreign trade. Current issues on the "global economy", international economic organization and Turkey's role in a changing world macroeconomic environment. *Credit units: 3 ECTS Credit Units: 5. Aut (N. Özkaramete Coşkun) Spr (M. Siyahhan)*

ECON 107 Principles of Microeconomics
Introduction of core microeconomic concepts, focusing on application of these principles in current events. Main topics include demand and supply analysis, firm behavior and the studying of market structures and their welfare analysis. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Güven, T. M. Kara, M. N. Solakoğlu, M. T. Yiğit) Spr (B. Onar)*

ECON 108 Principles of Macroeconomics
Introduction to core macroeconomic concepts, focusing on their application to current economic events. Main topics include determination of output, inflation, interest rates, employment and unemployment. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Onar, M. A. Taş) Spr (T. M. Kara, M. N. Solakoğlu)*

ECON 203 Microeconomic Theory I
This course is the first part of an intermediate level microecenomics sequence. Consumer theory, theory of the firm, and partial equilibrium theory are studied in depth. Applications of the partial equilibrium model to public finance and trade are also covered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 101 and MATH 106) or MATH 102 or MATH 114. Aut (N. A. Dalkıran, K. E. Hasker) Spr (Ş. P. Akyol)*

ECON 204 Microeconomic Theory II
This course is the second part of on intermediate level microeconomics sequence. Topics covered are: general equilibrium, welfare economics, monopoly, imperfect competition, externalities and public goods, uncertainty and information, and game theory. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 203. Aut (K. Yıldız) Spr (K. E. Hasker, K. Yıldız)*

ECON 205 Macroeconomic Theory I
This course is the first part of an intermediate level macroeconomics sequence. Besides the analysis of national income determination, inflation and unemployment, analysis of aggregate supply and growth theories will be introduced. Within the frameworks of basic business cycle models, demand side equilibrium, and the IS/LM models (including its open economy version) fiscal and monetary policy effectiveness will be studied. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 102 and MATH 105) or MATH 102 or MATH 114. Aut (Z. Kantur) Spr (Z. Kantur)*

ECON 206 Macroeconomic Theory II
This course is the second part of the intermediate macroeconomics sequence and it focuses on microfoundations in order to study macro models. Among the subjects are the consumption and investment theories, inflation and unemployment trade-off, and fiscal and monetary policy design and institutions with regards to open economy macroeconomics, exchange rate models and current account dynamics that are grounded in the intertemporal

optimization problem of the representative agent will also be introduced. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 205. Aut (S. S. Lee, B. Neyaptı) Spr (B. Neyaptı, H. Ç. Sağlam)*

ECON 207 Economics Theory for Engineers
This course is designed to introduce Engineering students to the fundamentals of economic analysis. It provides an introduction to micro and macroeconomic principles and concepts. The course also introduces the students to the cove topics of intermediate level of microeconomic analysis: analysis of the consumer, the firm, and the market. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 225. Aut (Ş. P. Akyol) Spr (Staff)*

ECON 221 Introduction to Probability and Statistics I
Descriptive statistics. Fundamental concepts of probability. Combinatorial methods. Conditional probability. Random variables, univariate and bivariate distribution. Expectation, variance, covariance and correlation. Some commonly used discrete and continuous probability distributions, the law of large numbers and the central limit theorem. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Apaydın, S. Kadayıfçılar) Spr (S. Kadayıfçılar)*

ECON 222 Introduction to Probability and Statistics II
Sampling and sampling distributions. Introduction to inference. Point and interval estimation. Hypothesis testing. Small sample distributions (t, X^2, F). Introduction to analysis of variance, regression and distribution free methods. Applications using statistical computer programs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 221 or MATH 119 or MATH 264 or PSYC 202. Aut (S. F. Mahmud) Spr (İ. Apaydın, S. F. Mahmud)*

ECON 225 Mathematics for Economists
Multivariate calculus, constraint optimization, Hessians, implicit function theorem, difference equations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 106. Aut (K. E. Hasker, H. Ç. Sağlam) Spr (T. Kara)*

ECON 301 Econometrics I
Introduction of linear multiple regression model, inference, hypothesis testing; and maximum-likehood methods. Illustration from economics and application of these concepts to economic problems will be emphasized. The course covers Gauss-Markov assumptions and violation of the assumptions such as heteroskedasticity, serial correlation and errors variables. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 101 and ECON 102 and ECON 222) or ((ECON 207 or (ECON 203 and ECON 204)) and (MATH 230 or MATH 255 or MATH 260 or MATH 262)). Aut (H. Berument, F. Taşkın) Spr (F. Taşkın)*

ECON 302 Econometrics II
Identification and estimation of simultaneous equation models. Advanced topics such as Generalized Least Squares, instrumental variables, non-linear regression techniques and limited dependent variable models. An introduction to time-series analysis such as stationary and nonstationary processes, VARs, unit roots, and cointegration. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 301. Spr (H. Berument)*

ECON 322 Monetary Economics
Basic models of money and monetary economics; the role of expectations; asset pricing models with special reference to equities and the term structure of interest; the Phillips curve; banking and financial intermediaries, monetary and fiscal policies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 206. Spr (H. Berument)*

ECON 323 Economics of Monetary Union
Contemporary issues of monetary integration; the European Monetary Union experience; Euro zone; monetary and fiscal policies for monetary union targets; the Maastrich Criteria; Central Bank Independence and Price Stability. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 206. Aut (Ö. Altay)*

ECON 331 International Economics I
Theory of international trade and applications in commercial policy. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 201 or ECON 204. Aut (S. Togan)*

ECON 332 International Economics II
Adjustment in international economic relations with attention to foreign exchange markets, balance of payments, and the international monetary system. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 206. Spr (S. Togan)*

ECON 351 Fiscal Economics I
First and second best fiscal theory. Incidence models. Economic response to taxation. Quantitative analysis of economic effects of fiscal instruments and fiscal changes. Government finance statistics; tax and expenditure structures; the budget and government financing; fiscal management in Turkey and abroad. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 201 or ECON 204. Aut (S. F. Mahmud) Spr (S. F. Mahmud)*

ECON 363 History of Economic Thought
The main topic of this course is the developments in the theoretical aspects of economics, after the marginal utility revolution. The context starts from 1870's with the contributions of major economists to marginal utility theory and applications. It proceeds with general and partial equilibrium analyses. Finally, Keynesian income

determination, Monetarism, New Classical economy and post-Keynesian approaches are examined. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 203 and ECON 205. Aut (T. M. Kara) Spr (T. M. Kara)*

ECON 399 Summer Training
The course aims at giving third-year students a chance to have practical training in industrial, business or research settings, typically conducted during semester breaks under the guidance and approval of the student's academic advisor. *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

ECON 400 Analytical Writing for Economist
For students in the department of economics, writing analytical and effectively is important. Thinking, writing and presenting effectively are increasingly becoming the determinants of success in the professional world. The course aims at developing the analytical writing and presentation skills of the students and emphasizes the discussion, presentation and conveying of ideas in the field of economics. The coursework will consist of the writing exercises and presentations of discussions in economic topics and issues. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 and ECON 206. Aut (E. Çağlar)*

ECON 402 Seminar in Macroeconomic Policy
The course aims to develop the student's skills to undertake an independent research project in the area of microeconomics. The structure of the course is designed to improve student's presentation and writing skills. The course outline includes a comprehensive reading list in microeconomic theory and policy issues. he students are required to gain familiarity with the topics through weekly in-class discussions, presentations and written reports. Furthermore the students are required to demonstrate proficiency in a strand of literature chosen from the assigned reading list, formulate an academic hypothesis and complete a research report as part of the course requirements. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 and ECON 206. Spr (F. Taşkın)*

ECON 403 Issues in Public Finance
Introduces fundamentals of deficit financing. The role of the bureaucracy and its relations with the government is discussed with an emphasis on the role of the Treasury and its functioning. New orientalism in government financial management, government balance sheet approach, expenditure management and control issues are other topics that are covered in this course. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 206. Aut (F. Emil)*

ECON 409 Contemporary Issues in Turkish Economy I
Contemporary problems confronting the Turkish economy, structural adjustment reforms and macroeconomic policies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 205. Aut (H. Berument)*

ECON 428 Public Sector Governance
This course is about theoretical and practical aspects of quality and performance management in provision of services within the public sector. In this regard, the course will attempt to inform the students about the pros and cons of new public management culture. The dynamics which changed the "public administration culture" to "public sector management" will be explored. Strategic and performance management and what they mean to public sector, public sector management reforms including financial management, personal management, quality management, audit issues and citizen participation in decision making process will be elaborated. No prerequisites are necessary. *Credit units: 3 ECTS Credit Units: 6. Spr (F. Emil)*

ECON 432 Turkish and World Economy in the 20th Century
Growth and developments in Turkey and the World from World War I to present. The application of economic analysis to historical issues. Topics: Great Depression, the interwar period, the developments in Soviet type economies since 1917, the Bretton Woods System, the collapse of the Bretton Woods System, the collapse of communism, Turkish economy during the Great Depression and thereafter. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 202 or ECON 206. Aut (F. Emil) Spr (F. Emil)*

ECON 433 Industrial Economics I
This course will survey the current thinking and issues in industrial organization and regulation. The objectives of the course are both to examine in some depth how firms behave in a market economy, and to review some basic forms of state intervention in modern capitalist economics. The course will provide some background on firm behavior and, the legal environment in which they operate, and will review the rational and experience of antitrust and competition policies. The second semester will concentrate on the regulation of private monopolies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 201 or ECON 204 or ECON 207. Spr (Staff)*

ECON 439 Game Theory I
This course is an introduction to the theory of games. Games theory provides a set of analytical tools that can be used to model the interactions of decision-makers (consumers, firms, politicians, government, etc). The course introduces the basic theory of noncooperative game theory. A variety of applications will be discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 or ECON 207 or MATH 223 or MATH 225 or MATH 242. Aut (T. Kara, K. Yıldız) Spr (K. E. Hasker)*

ECON 442 Application of Graph Theory to Economics
Credit units: 3 ECTS Credit Units: 6.

ECON 443 Advanced Economic Theory
Special topics in micro and macroeconomics. Topics include inflation and unemployment, theories of macroeconomic policies, economic stabilization, theories of the consumer and the firm welfare and general equilibrium analysis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 201 and ECON 202) or (ECON 204 and ECON 206). Aut (S. S. Lee)*

ECON 444 Bargaining Theory and Experiments in Economics
Our objective is to introduce students (with potentially different majors) the key concepts in bargaining, major approaches used in modelling/studying bargaining (e.g.. cooperative and noncooperative game theory, experimental economics, behavioral economics, social psychology), interactions between these approaches, special topics in bargaining, and current trends / future directions in bargaining research. We hope that, by the end of the course, students will have a decent and up-to-date knowledge about the research on bargaining; and some students may even come up with good research questions. Due to the interdisciplinary nature of the topic, the course will adopt multiple methodologies. First, the (game) theoretical foundations will be presented. Experimental and behavioral methods will follow to complement students' understanding. Occasionally, research on bargaining behavior in social psychology and management will also be covered. Since practicing bargaining contributes to a better understanding of the topic, we will occasionally conduct in-class and field experiments. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 or ECON 207.*

ECON 446 Networks in Economics: Theory and Applications
The course deals with how network structures shape economic outcomes and influence the behavior of economic agents. The course will introduce the students to analytical models and applications of strategic network formation, job market networking, exchange and bargaining on networks, diffusion on networks, diffusion on networks and games on networks. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 or ECON 207 or MATH 223 or MATH 225 or (MATH 241 and MATH 242).*

ECON 448 Economics of Information
The aim of this course is to analyze asymmetric information in markets and organizations. Selective topics from mechanism design, contract theory, principal-agent problems, global games and information aggregation will be covered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204 and ECON 225. Spr (N. A. Dalkıran)*

ECON 453 Theories of Economic Growth and Development I
Introduction to modern theories of growth; the neoclassical growth model; the golden rule of accumulation; transitional dynamics and the steady state; exogenous versus endogenous growth modeling; sources of growth and the convergence of nations; empirics of growth. Introduction to endogenous growth. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 201 and ECON 202) or (ECON 204 and ECON 206).*

ECON 455 Institutions and Development
A synopsis of earlier development theories. Analysis of the linkages between economic development and macroeconomic institutions in the framework of "New Institutional Economics". Empirical analysis of institutional designs that are related to fiscal and monetary policy making are introduced. Specifically, economic effects of fiscal decentralization; budgetary rules and procedures; central bank independence and inflation targeting are examined. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 202 or ECON 206) and ECON 222. Aut (B. Neyaptı)*

ECON 457 Alternative Theories of Growth and Distribution
The classical, neoclassical and the new theories of growth and their implications for development macroeconomics with a direct focus on issues of distribution. The determinants of the wealth of nations and also the appropriate national policies to achieve sustained and stable growth. The economic machine regarded as being in motion towards its long run (steady state) equilibrium, in all its giant complexity with many interrelated markets and different agents, classes and institutions. Examination of the recent evidence on the stylized facts and empirical regularities of economic growth across nations. Study of traditional models of growth that were designed to explain these facts through various hypotheses, and focus on the interlinkages between growth and distribution as envisaged through alternative paradigms. Study of the necessary ingredients of endogenous sources of growth and look at the seminal endogenous growth models; focusing, in particular, on the role of technological change and the market structure. Study of alternatives to the neoclassical vision of the economy and contrast the structure and implications of models based on Marxian and (Neo)-Ricardian growth. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 203 and ECON 205. Aut (A. E. Yeldan)*

ECON 459 Health Economics
This course is designed to introduce upper level undergraduate students in economics to the field of Health Economics. The provision and production of health care have different characteristics and incentives from other consumer goods making health related markets a unique topic for study. This course will cover a number of topics including basic economic concepts important for the study in health economics, why health is different

from other good, aspects of the health care market in Turkey, health care in other countries, as well as discussing the importance of health for development and some basic economic evaluation techniques. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 204.*

ECON 464 Global Trading
The course focuses on the details of the global currency trading, mainly on trading in the foreign currency spot market. Buying and selling patterns, as well as volatility behavior in the market will be presented. A special focus on technical analysis in the foreign exchange market, including Japanese Candlesticks and Fibonacci numbers along several other tools, will be discussed. Determining and interpreting both short and long term movements in the global currency markets will be explored. The course will include a discussion of the world's major currencies and the distinct characteristics of each currency market. The discussions will include not only theoretical analysis but will also include practical global currency trading and allow students to practice such real world issues through on hand exercises. These exercises will be carried out using up-to-date trading platforms, such as Trademaster and the likes. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ECON 101 or ECON 107) and (ECON 102 or ECON 108). Aut (P. Ünal) Spr (P. Ünal)*

ECON 500 Mathematics Review Course
The course is designed to maintain and develop amiliarity with the mathematical tools used in the Masters and Ph.D. Program in the department of Economics. This course is designed to help students master an important set of mathematical skills necessary to study economics. It will cover basic concepts from calculus, linear algebra, optimization, and mathematical analysis, which will be used in the first year courses. *Credit units: 3 ECTS Credit Units: 6. Aut (N. A. Dalkıran)*

ECON 503 Microeconomic Theory I
Theory of production. Theory of consumption. General equilibrium. Fundamental welfare theorems, externalities, public goods, and second best analyses. *Credit units: 4 ECTS Credit Units: 7. Aut (T. Kara, K. Yıldız)*

ECON 504 Microeconomic Theory II
Theory of general competitive equilibrium. Topics include existence of equilibrium, computational techniques, core of the economy, stability, uniqueness of equilibrium, and empirical general equilibrium models. *Credit units: 4 ECTS Credit Units: 7. Spr (N. A. Dalkıran)*

ECON 505 Macroeconomic Theory I
A wide-ranging survey of modern macroeconomic theory with an emphasis on the necessary mathematical tools and the dynamic methods. Focuses on competitive equilibrium, optimality, dynamics of equilibria, economic fluctuations, long-run growth, technological progress, life-cycle aspects and economic policies. *Credit units: 4 ECTS Credit Units: 8. Aut (H. Ç. Sağlam)*

ECON 506 Macroeconomic Theory II
Stochastic models of economic fluctuations. Rational expectations. The effectiveness of monetary and fiscal instruments. Uses of general equilibrium econometric models for forecasting and policy simulations. Multi-country models and the international transmission mechanism. *Credit units: 4 ECTS Credit Units: 8. Spr (S. S. Lee)*

ECON 509 Probability and Statistics I
Introduction to probability. Random variables and its distribution. Expectation, moments and moment generating functions. Conditional probability and expectations. Transformations of random variables, and order statistics. Stochastic convergence and central limit theorem. Sampling distribution. Point estimation, method of moments and maximum likelihood. Large and small sample properties. Sufficiency. Interval estimation. Testing of hypotheses - MP, UMP, UMPU, GLR, LM and Wald tests. *Credit units: 4 ECTS Credit Units: 6. Aut (M. Trokic) Spr (Staff)*

ECON 510 Probability and Statistics II
Ordinary Least Squares: basic assumption, estimation and tests of hypotheses, the coefficient of determination, prediction, functional forms, the problem of choosing between them and specification tests, multicollinearity. Dummy Variables, testing structural change, estimating the prediction error variance and pooling cross-sectional and time-series data. Lagged dependent variables, binary dependent variables. Autocorrelation and heteroscedasticity. Simultaneous equations; identification and single-equation estimation techniques. *Credit units: 4 ECTS Credit Units: 6. Spr (M. T. Yiğit)*

ECON 511 Econometrics I
Theory and applications of time series models. Topics include ARMA and VARMA models, , Trend-Cycle decomposition, Unit roots, Cointegration, Structural change, GARCH, Regime switching and threshold models, Statespace form and Kalman filters, and specialized topics such as Fractional Integration and I(2) models. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 510. Aut (M. Trokic)*

ECON 512 Econometrics II
Theory and application of existing micro-econometric techniques, econometrics of panel data, and Monte Carlo simulation. Topics include Discrete regression models, Censored and Truncated regression, Models with self-

selectivity, Disequilibrium models, Count Data, Duration models, Static panel data analysis, Dynamic panel data analysis, Non-stationary panel methods: Panel unit roots and cointegration, PanelVAR, Monte Carlo and bootstrap. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 510. Spr (M. T. Yiğit)*

ECON 513 Game Theory I
Game theoretic approaches to economics, strategic decision-making, discussion of contemporary issues in economic design. *Credit units: 3 ECTS Credit Units: 6.*

ECON 515 Mathematics for Economists I
Use of various mathematical structures in economic theory. Order structures, metric structures, linear algebraic structures. Calculus for economists. Unconstrained optimization. Constrained optimization, Lagrangean and Kuhn-Tucker multipliers, linear programming. Difference and differential equations. Correspondences. Fixed point theorems. *Credit units: 3 ECTS Credit Units: 7. Aut (S. Koray)*

ECON 516 Mathematics for Economists II
The contraction mapping theorem. Theorem of the maximum. Dynamic programming under certainty. Measure theory and integration. Stochastic dynamic programming. Modes of convergence and laws of large numbers. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: ECON 515. Spr (S. Koray)*

ECON 521 International Economics I
Theory of international trade and applications in commercial policy. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 504.*

ECON 541 Economics of Labor Market
Core topics in the field of labor economics as well as empirical methods for applied microeconomic analysis. *Credit units: 3 ECTS Credit Units: 8, Prerequisite: ECON 504 and ECON 510.*

ECON 561 Topics in Microeconomic Theory I
The subject matter of this course will vary from year to year, according to the interests of the instructor. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Koray)*

ECON 563 Topics in Macroeconomic Theory I
The subject matter of this course will vary from year to year, according to the interests of the instructor. *Credit units: 3 ECTS Credit Units: 6.*

ECON 564 Topics in Macroeconomic Theory II
Continuation of ECON 563. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ECON 563.*

ECON 575 Monetary Economics I
The analysis of the empirical methods, such as optimal control theory and vector autoregression that widely used in monetary models and some basic models that explore the relationship between output, money and interest rates are studied. The role of exchange rates within the course of monetary policymaking is also analyzed in details. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Kısacıkoğlu)*

ECON 591 Masters Pre-Thesis Seminar I
This is a course where students will attend a series of lectures presented by faculty members and/or invited academics and submit written reports on the papers presented. *Credit units: None ECTS Credit Units: 1. Aut (Ç. Ökten Hasker)*

ECON 592 Masters Pre-Thesis Seminar II
This is a course where students will attend a series of lectures presented by faculty members and/or invited academics and submit written reports on the papers presented. *Credit units: None ECTS Credit Units: 1. Spr (Ç. Ökten Hasker)*

ECON 595 Research Paper I
Credit units: None ECTS Credit Units: 1. Aut (Ç. Ökten Hasker)

ECON 596 Research Paper II
Students read, discuss and present research papers in particular areas. An in-depth study of an appropriate question and completion of a paper of high quality. *Credit units: None ECTS Credit Units: 1. Spr (Ç. Ökten Hasker)*

ECON 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

ECON 691 Ph.D. Pre-Thesis Seminar I
This is a course where students will attend a series of lectures presented by faculty members and/or invited academics and submit written reports on the papers presented. The students working on their dissertation are expected to present the outcome of their research and submit a research paper of publishable quality. *Credit units: None ECTS Credit Units: 1. Aut (Ç. Ökten Hasker)*

ECON 692 Ph.D. Pre-Thesis Seminar II
This is a course where students will attend a series of lectures presented by faculty members and/or invited academics and submit written reports on the papers presented. The students working on their dissertation are expected to present the outcome of their research and submit a research paper of publishable quality. *Credit units: None ECTS Credit Units: 1. Spr (Ç. Ökten Hasker)*

ECON 695 Research Methods in Economics I
This is a course whare students will complete a research project with the full-time guidance and tutoring of a group of faculty members. The students will learn alternative research methods used in economics and apply them to a research question, with the goal of completing an academic paper at the end of the course sequence. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. Ökten Hasker)*

ECON 696 Research Methods in Economics II
This is a course where students will complete a research project with the full-time guidance and tutoring of a group of faculty members. The students will learn alternative research methods used in economics and apply them to a research question, with the goal of completing an academic paper at the end of the course sequence. *Credit units: 3 ECTS Credit Units: 6. Spr (Ç. Ökten Hasker)*

ECON 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Staff)

DEPARTMENT OF HISTORY

M. Kalpaklı (Acting Chair), A. Beyatlı, Ö. Ergenç, M. A. Kireçci, E. Kohn, P. Latimer, O. Özel, A. Özer, İ. M. Öztürk, E. R. Radushev, N. Stone, A. M. Thornton, D. E. Thornton, K. Weisbrode, L. Zavagno.

Part-time: C. E. Çekiç, H. Deluigi, N. I. Demirakın, K. Emiroğlu, B. Feyzullahoğlu, S. Flynn, M. Karabağ, F. Ö. Mercan, O. Önol, N. Tekgül, M. Ünal, M. S. Ünsal, T. T. Yiğit.

The Department of History functions mainly as a graduate department, offering M.A. and Ph.D. programs in the areas of Ottoman, American, and European histories. At the undergraduate level, the department offers both compulsory and elective courses in History of Civilization (HCIV 101/102) for the students of other departments and faculties, and provides preparatory courses for the entering graduate students entering the Department of History, some of which are also offered as electives for senior undergraduates of other departments.

MINOR PROGRAM

History is the academic study of past societies by means of written sources. An understanding of history is important for all students. Familiarity with the past of one's own country, as well as that of other countries, is obviously essential for both one's own identity but also for a full appreciation of the increasingly global atmosphere of the twenty-first century. Without a sense of history, we are nothing!

The new minor program in history is intended to teach the main skills of historical research while providing a strong background in the three main areas taught by the History Department: students will undertake a study of Ottoman history from the classical period to the early twentieth century, as well as research about medieval and modern Europe and the history of the USA. Emphasis is placed on independent thinking and critical analysis of sources and ideas rather than mere memorization of names and dates.

The minor courses in history form part of the History Department's preparatory year for its master's students. These courses are specifically designed for students with no previous experience of studying history and are already popular as electives among students from undergraduate departments. The minor program is open therefore to applicants with a sufficient CGPA from any department. Students who are considering a graduate degree in history are encouraged to apply, and those in social sciences and humanities who wish to support their major field with a broader historical knowledge will also find the history minor useful. However, the minor program requires no prior, specialist experience of studying history or related disciplines, and it will therefore be of interest to those students who simply wish to improve their knowledge of history, as well as those who have a more long-term interest in history as an academic field.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
HIST 411	Ottoman History: 1300-1600	3 / 6
HIST 412	Ottoman History: 1600-1914	3 / 6
HIST 418	Modern Europe (1453-1914)	3 / 6
	Electives (3)	9 / 18

GRADUATE PROGRAM

The Department of History offers graduate programs in Ottoman, European and American history, leading to Master's and Ph.D. degrees. Emphasis is placed on preparing students to be able to undertake independent research in these particular fields. The graduate program involves a preparatory year designed to give students the background knowledge, skills and language proficiency which will

enable them ultimately to make original research with primary source materials. Since profound historical research can only be carried out through the use of primary source materials, it is necessary for students to acquire the relevant linguistic and paleographic skills.

Master of Arts in History

The program is designed to concentrate on the areas of Ottoman History, European History and the History of the United States.

The preparatory year prior to the Master's program provides a background in Western and Turkish history. The first year in the Master's program features specialized courses in Ottoman History, European History, and the History of the United States. Students should by then have acquired a solid knowledge in history so as to be able to raise questions concerning more specific historical themes. During the second year the student begins to write his/her Master's thesis under the supervision of an advisor. During the Master's program the student is expected to submit papers at the end of each semester.

Admission: Graduates from all departments may apply to this program. An undergraduate degree in History is not a prerequisite for entering the M.A. program. All students entering the graduate program in history must take one year of preparatory courses before they begin to take Master's level courses of the department. Therefore, graduates from the Faculties of Management, Engineering or Science, as well as those from Humanities and Social Sciences Faculties who are interested in history are also eligible to apply for admission. Students admitted should have passed the English Language Test (level equivalent to internet based TOEFL 87). (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Degree Requirements:

1. Completion of at least 24 graduate-level credits after a preparatory year.
2. Within the program there are three tracks: Ottoman History, European History, and American History. Elective and Restricted Elective courses appropriate to each track will be designated within the curriculum below.
3. Students of Ottoman History must demonstrate competence in Ottoman Turkish and one modern language other than English or Turkish.
4. Students of European History and the History of the United States must demonstrate competence in one modern language other than English or Turkish.
5. A Master's thesis must be submitted and accepted.
6. A grade point average of at least 3.00 must be maintained for the totality of Master's level work.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
HIST 507	Methodology in History I	3 / 7
HIST 508	Methodology in History II	3 / 7
HIST 599	Master's Thesis	- / 56
HIST 692	Pre-Thesis Seminar	- / 1
*	Elective	3 / 6
**	Restricted Electives (5)	15 / 30

* Any 5XX or higher level course at least 3 credits.

** Any 5XX or higher level HIST course at least 3 credits.

Doctor of Philosophy in History

To enter the Ph.D. program a candidate is required to have completed an M.A. program in History, and passed the entrance exam for his/her specific major area of the doctoral program. Applicants with M.A. degrees from other programs at Bilkent or other universities are also subject to the same requirements for admission into the doctoral program. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Among the degree requirements is a minimum of 24 credit units of graduate level course work beyond the course work completed at the Master's level, to be determined by the advisor and the departmental chair for each doctoral candidate. To meet the course requirements, the candidates may take the graduate level history courses that they have not previously taken and, if necessary, graduate level courses from other departments. For those who have taken graduate courses elsewhere, the department may apply for permission from the director of the graduate school (the Institute) to grant partial or full-credit for such courses. The candidate may also take language courses as recommended by his/her advisor. The candidate is expected to have participated in seminars offered on source materials. Within the program there are three tracks: Ottoman History, European History, and American History. Courses appropriate to each track will be designated within the curriculum below.

Candidates in Ottoman history are required to undergo language examinations in one of the Western languages (French, German, Latin, Ancient Greek, Italian) and in one of the Middle Eastern languages (Arabic, Persian) in reading proficiency prior to the comprehensive exams.

After the completion of a minimum of 24 credits of course work, the candidate is eligible to take the written and oral comprehensive exams. The first part of these examinations evaluates the candidate's expertise in the relevant field/period. The second part is tailored to each particular students' research proposal for the dissertation. The candidate must prepare a doctoral dissertation embodying original research and must successfully defend it in a final exam before a committee of the faculty before the end of the fourth year of the doctoral program unless an extension is granted. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The dissertation has to represent a substantial contribution to the historical knowledge in one of the particular fields of study.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
HIST 693	Pre-Thesis Seminar	- / 1
HIST 699	Ph.D. Dissertation	- / 160
*	Elective	3 / 6
**	Restricted Electives (7)	21 / 42

* Any 5XX or higher level course at least 3 credits.

** Any 5XX or higher level HIST course at least 3 credits.

COURSE DESCRIPTIONS

HCIV 101 History of Civilization I
Provides background to the origins of early Western civilizations: deals with the nature and spread of the earliest civilizations in the Ancient Near East and the development of civilization in classical and medieval Europe, concerning their political, social, economic and religious life; focuses on the globalization process of the civilization to be culminated in Western Europe. *Credit units: 3 ECTS Credit Units: 6. Aut (H. Deluigi, S. Flynn, M. A. Kireçci, J. Morin, A. M. Thornton, L. Zavagno) Spr (H. Deluigi, S. Flynn, J. Morin)*

HCIV 102 History of Civilization II
Provides background to the origins of modern Western civilization: deals with the development of European society from around AD 1500 until the present, concerning the political, social economic and religious life of the

West during that period. *Credit units: 3 ECTS Credit Units: 6. Aut (O. Önol, T. T. Yiğit) Spr (C. V. Gates, M. A. Kireçci, O. Önol, A. M. Thornton, D. E. Thornton, L. Zavagno)*

HIST 200 History of Turkey
This course focuses on aspects of Turkey's history with an emphasis on research. It is designed as an interactive course with the objective to investigate events, chronologically short historical oeriods, as well as historic representations. *Credit units: 4 ECTS Credit Units: 8. Aut (C. E. Çekiç, N. I. Demirakın, K. Emiroğlu, M. Karabağ, F. Ö. Mercan, A. Özer, İ. M. Öztürk, M. S. Ünsal) Spr (C. E. Çekiç, K. Emiroğlu, F. Ö. Mercan, A. Özer, İ. M. Öztürk, M. Ünal, M. S. Ünsal, T. T. Yiğit)*

HIST 203 History of Turkey
This course is designed to have students who already took a 2 credit history course to fulfill the overall 4 required credits for the subject. ıt focuses on aspects of Turkey's history with an emphasis on research. It is an interactive course with the objective to investigate events, chronologically short historical periods, as well as historic representations. *Credit units: 2 ECTS Credit Units: 4.*

HIST 209 History of Turkey
The course focuses on aspects of Turkey's History with an emphasis on research. It is designed as an interactive course with the objective to investigate events, chronologically short historical periods, as well as historic representations. *Credit units: 4 ECTS Credit Units: 8. Aut (B. Feyzullahoğlu) Spr (B. Feyzullahoğlu)*

HIST 313 Classical Arabic I
Basic grammar of Classical Arabic. The main tenses. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Beyatlı)*

HIST 314 Classical Arabic II
Basic grammar of Classical Arabic. Irregular grammatical forms. Reading of simple religious and legal texts. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Beyatlı)*

HIST 315 Advanced Classical Arabic I
Reading and grammatical interpretation of Classical Arabic texts. *Credit units: 3 ECTS Credit Units: 6.*

HIST 316 Advanced Classical Arabic II
Reading and grammatical interpretation of Classical Arabic texts. *Credit units: 3 ECTS Credit Units: 6.*

HIST 401 Ottoman Turkish and Paleography I
Course on Arabic script and Ottoman grammar. *Credit units: 4 ECTS Credit Units: 8. Aut (N. Tekgül)*

HIST 402 Ottoman Turkish and Paleography II
Course on Arabic script and Ottoman grammar. Reading exercises on printed Ottoman texts. *Credit units: 4 ECTS Credit Units: 8. Spr (N. Tekgül)*

HIST 411 Ottoman History: 1300-1600
Classical period of the Ottoman Empire. Economic, political and religious institutions. Ottoman economic system. Relations with its European neighbors. *Credit units: 3 ECTS Credit Units: 6. Aut (O. Özel)*

HIST 412 Ottoman History: 1600-1914
Ottoman Empire in decline. Political, economic and ideological developments at the capital as well as in the provinces. Nationalism among non-Muslims and Muslims. Administrative and political reforms during the eighteenth and nineteenth centuries. *Credit units: 3 ECTS Credit Units: 6. Spr (O. Özel)*

HIST 413 Byzantine History I: 324-1025
Foundation of the Eastern Roman Empire, development of Byzantine institutions, relations of the Byzantine Empire with the East and West. Cultural and religious developments. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Zavagno)*

HIST 414 Byzantine History II: 1025-1453
Deterioration of the Byzantine land regime. Feudalization. Penetration of Turks into Anatolia and its impact on Byzantium. Latin conquest of Constantinople. Relationship between Byzantium and Anatolian Turkish principalities. Conquest of Constantinople. *Credit units: 3 ECTS Credit Units: 6. Spr (L. Zavagno)*

HIST 416 Medieval British History
Formation of the medieval English state from its Anglo-Saxon beginnings to the 14th century, tracing the developments in central and local government, its politics, social structure and its interaction with the rest of the British Isles and the Continent. *Credit units: 3 ECTS Credit Units: 6.*

HIST 417 Medieval Europe (500-1500)
This course traces the history of western Europe from the fall of the Roman Empire to the Renaissance, and deals with the main political, social and religious changes during that period. *Credit units: 3 ECTS Credit Units: 6. Aut (D. E. Thornton)*

HIST 418 Modern Europe (1453-1914)
The course seeks to deal, selectively with the historiography of major themes in the political, social intellectual and religious history of Europe from the Renaissance to the eve of the emergence of the national state system characteristic of the twentieth century. *Credit units: 3 ECTS Credit Units: 6. Spr (L. Zavagno)*

HIST 431 History of the United States until the Reconstruction
Basic history of the United States from the colonial period up to the Civil War, designed to orient students to more detailed information. Characteristic problems of early American political, economic and intellectual history during the nation-building process. *Credit units: 3 ECTS Credit Units: 6. Aut (K. Weisbrode)*

HIST 432 History of the United States from the Reconstruction
Basic history of the United States from 1865 up to the modern times, designed to orient students to more detailed information. Characteristic problems of American political, economic and intellectual history in the process of its emergence as a world power. *Credit units: 3 ECTS Credit Units: 6. Spr (K. Weisbrode)*

HIST 481 Latin for Medieval and Early Modern History I
Introduction of Medieval Latin to those graduate students who wish to specialize in Medieval as well as Early European History. Emphasis on both grammar and reading. *Credit units: 3 ECTS Credit Units: 6.*

HIST 490 Field Related Seminar
This is non-credit course, directed by the student's academic advisor, which will run in each of the semesters of the History Department Preparatory Year, designed to ensure that the students is doing or has done the necessary relevant courses for his or her field and that the students is otherwise prepared for his or her Master of Arts Program or Doctor of Philosophy Program. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

HIST 4413 Venice between the Byzantines and the Ottomans(ca.300-ca.1700 CE)
The historical interaction between the Republic of Venice and the two most important Mediterranean polities in the Medieval and Modern Era: the Byzantine and the Ottoman Empire. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Zavagno)*

HIST 5513 Venice between the Byzantines and the Ottomans (ca. 300 - ca. 1700 CE)
The historical interaction between the Republic of Venice and the two most important Mediterranean polities in the Medieval and Modern Era: the Byzantine and the Ottoman Empire. *Credit units: 3 ECTS Credit Units: 7. Aut (L. Zavagno)*

HIST 501 Ottoman Paleography I
Advanced reading exercises on Ottoman documents. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: HIST 401. Aut (Ö. Ergenç)*

HIST 502 Ottoman Paleography II
Advanced reading exercises on Ottoman documents. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: HIST 402. Spr (Ö. Ergenç)*

HIST 505 Ottoman Rule in Southeast Europe I: 1354-1600
Local Balkan monarchies (Bosnians, Bulgarians, Serbs) and the growing feudalization of the region. Ottoman expansion and the foundation of the First Ottoman Empire. Interregnum and the Second Ottoman Empire. Social and economic developments. Administration and land regime. Urban and rural structure. Vassal and tributary states. The unique case of Dubrovnik. *Credit units: 3 ECTS Credit Units: 7. Aut (E. R. Radushev)*

HIST 506 Ottoman Rule in Southeast Europe II: 1600-1878
Islamic culture and heterodox Islamic movements in Southeast Europe. Decline of the Ottoman Empire. Military and fiscal transformation and its impact on Ottoman Balkans. The Siege of Vienna in 1683 and the political and social effects of the Ottoman defeats. The rise of non-Muslim middle class and education. The struggle for independence of Balkan people and the "Eastern Question". *Credit units: 3 ECTS Credit Units: 7. Spr (E. R. Radushev)*

HIST 507 Methodology in History I
Basic methods in historical research. The history of historiography. Main traditions and currents of historical thought. *Credit units: 3 ECTS Credit Units: 7. Aut (O. Özel)*

HIST 508 Methodology in History II
Main methods and approaches in historical research. Problems of historical research using primary sources. Source typology, and text criticism and analysis. *Credit units: 3 ECTS Credit Units: 7. Spr (P. Latimer)*

HIST 511 Ottoman Social and Economic History I
Ottoman Beylik as a frontier state. Hegemony in Anatolia and the Balkans. The Battle of Ankara and struggle for Revival. The conquest of Constantinople. The definitive foundation of the classical Ottoman Empire. Ottoman Empire as a world power. Internal disorders. Social, economic and religious institutions. *Credit units: 3 ECTS Credit Units: 7. Aut (Ö. Ergenç)*

HIST 512 Ottoman Social and Economic History II
The periods of transition and modernization of the Ottoman state and society. The detonation of the Ottoman classical socio-economic structure. The weakening of central authority. The ayans. Early attempts of modernization. Influence of the "Enlightenment" ideas on emergence of nationalist currents among non-Muslim communities. Tanzimat. *Credit units: 3 ECTS Credit Units: 7. Spr (Ö. Ergenç)*

HIST 517 Ottoman Millet System
Legal and social status of non-Muslim communities in the Empire, their cultural life and ecclesiastic organizations. The evaluation of the Christian and Jewish communities after the decree of "Tanzimat" in 1839 and after the Congress and Convention of Paris in 1856 will be discussed in this course. *Credit units: 3 ECTS Credit Units: 7. Aut (E. R. Radushev)*

HIST 518 Introduction to Ottoman Diplomatics
History and development of the field of archival research. Archives and archival sources in Turkey. Development of the field of Ottoman diplomatics. Types and classification of Ottoman documents. Internal structure of Ottoman official correspondence, decrees and diplomas prior to the Tanzimat period. Ottoman official documentation in the period of reform until the dissolution of the Ottoman Empire. *Credit units: 3 ECTS Credit Units: 7. Aut (Ö. Ergenç)*

HIST 520 Sources of Ottoman Social and Economic History II
The Ottoman land regime. Social and legal changes throughout the Ottoman period. Reading and analysis of sources such as *berats*, *mühümmes*, *sicils*, *tahrirs*, *temettüats* and *vakfiyyes* . *Credit units: 3 ECTS Credit Units: 7. Spr (O. Özel)*

HIST 524 US in the Vietnam Era
This course is designed to give students in the Master's program in American history an in-depth look at the history of Vietnam War. The course will focus on the period roughly 1945-1975. In addition to the war itself, other topics for discussion will include the Cold War, the Civil Rights movement, the counter culture and the legacy of the war in the 1990s. *Credit units: 3 ECTS Credit Units: 7. Spr (E. Kohn)*

HIST 526 Advanced Ottoman Diplomatics
Historical development and characteristics of ottoman diplomatics, focusing particularly on the bureaucratic-institutional mechanisms that produced diverse genres in the Ottoman central bureaucracy. Particular emphasis will be made on changing priorities of the central government over periods of time from the 'classical' period to the Tanzimat. *Credit units: 3 ECTS Credit Units: 7. Spr (Ö. Ergenç)*

HIST 527 Feudalism: East and West I
Examination of the origins and development of the diverse modern concepts of 'Feudal' and 'Feudalism' from late medieval and early modern legal theory, through the Enlightenment and Marxism down to modern times. It will go on to deal with the elements of these concepts as historical phenomena in medieval and early modern Europe, and in the Byzantine and Ottoman Empires. *Credit units: 3 ECTS Credit Units: 7.*

HIST 529 Bulgaria under the Ottoman Rule: History and Sources
Medieval Bulgarian state before the Ottomans. Ottoman conquest - from "Bulgarian Empire" to Ottoman Rumelia. Turkish colonization in Bulgaria: ahis, gazis, dervishes, and yürüks in the early colonization process. Demographic structure of Bulgarian lands under Ottoman rule. Ottoman towns and Turkish settlements in the rural area. Administrative division of Rumelia, communication system and trade routes. Conversion to Islam in urban and rural areas. Islimization process in Bulgarian lands as a contemporary myth. Ottoman culture in Bulgaria. Sources for the study of the Ottoman rule in Bulgarian lands. *Credit units: 3 ECTS Credit Units: 7.*

HIST 537 US Civil War and the Reconstruction
An intensive examination of the United States from 1848 to 1877. Investigation of the causes of the Civil War; the military, social, and political history of the war; and the conflict over emancipation and Southern political power during the Reconstruction. *Credit units: 3 ECTS Credit Units: 7.*

HIST 540 Warfare and Violence in Stuart Britain 1603-1807
The course discuses in a Europe-Wide context, both violent disorder in general and warfare in particular (the war of the three kingdoms, the Dutch invasion of 1688 and the Jacobite wars) in the British isles in the seventeenth and eighteenth centruies, it also deals, with the British struggle against the French revolutionary and Napoleonic states. *Credit units: 3 ECTS Credit Units: 7.*

HIST 558 US Politics and Culture Since 1945
From the red scale to Vietnam, and from the Reagan revolution to the Clinton implacament, American Politics have been about more than just elections. Religion, culture, value and ideas combine to both reflect and shape the politics of the day. This class will look at American politics and culture since 1945 to the present, stressing the unique American influence that continue to shape politics today. *Credit units: 3 ECTS Credit Units: 7.*

HIST 560 Major Issues in Medieval and Early Modern Economies
Study of the main transformations in the economies of Europe and the Near East from late Roman times to the mid-seventeenth century. Examination of the disappearance of monetary economy, emergence of manorialism,

and trade life in the Mediterranean basin. Development of markets and the domination of Atlantic economy. Price inflation. Reasons and consequences of these developments. *Credit units: 3 ECTS Credit Units: 7. Aut (P. Latimer)*

HIST 567 History and Literature in the Ottoman Empire
Chronicles in the from of literary works. Analysis and interpretation of historically significant literary works of Ahmedi, chronicles of Aşıkpaşazade and Oruç, MustafaÂli's Menâkib ül-Hünerverân, Mecâlis ün-Nefâis and Tezkires. *Credit units: 3 ECTS Credit Units: 7.*

HIST 569 Cultural History of the Ottoman Empire I
Analysis of the cultural history of the Ottoman Empire from 1453 to the period of Turkish Republic. Topics include social and cultural structures of the Ottoman Empire, language, literature and artistic tradition, and analysis and interpretation of some significant works (divan's, biographies of poets, kaside's, memoir's). *Credit units: 3 ECTS Credit Units: 7.*

HIST 573 New Era/New Deal (1920-1945)
This course is designed to give students in the masters program in US history an in-depth look at the history of and historical literature about the period 1920-1945. Major topics will include the Jazz Age, the Roaring's, the Great Depression, Franklin Rooselvelt's New Deal and World War II. *Credit units: 3 ECTS Credit Units: 7. Aut (E. Kohn)*

HIST 577 US Military and Diplomatic History
An intensive examination of American military and diplomatic history from the colonial period to the present with a focus on historiography. Topics may include colonial wars in North America, the wars of the United States, war and American society, treaties with European nations and with Native Americans, imperialism and anti-imperialism, relationism, and the cold war. *Credit units: 3 ECTS Credit Units: 7. Aut (K. Weisbrode)*

HIST 581 Latin for Medieval and Early Modern History III
Reading and interpretation of Medieval historical documents in Latin. Selection of documents relevant to the socio-economic history of Europe like registers, bills, treaties, monastic writings. *Credit units: 3 ECTS Credit Units: 7. Aut (P. Latimer)*

HIST 589 History of Arab Nationalism in the Middle East
This course explores the birth, triumph and fall of Arab nationalism in the Middle East. The course focuses on historical events, political leaders and movements all of which defined and shaped the nature of the movement. Concepts such as Arabism, Arab unity, Arab nationalism are among the terms that we will investigate along with their contextualization in different regions of the Middle East by various actors. Factors which contributed to the development and/or decline of the Arab nationalist movement will be examined are: colonialism, the dissolution of the Ottoman Empire, the World War I and WW-II, the emergence of the State of Israel, the Egyptian Revolution and the rise of Al-Nasser, Islamic resurgence and the recent incidents in the region. The ideological links between Arab nationalism and modern radical movements will also be examined. *Credit units: 3 ECTS Credit Units: 7. Spr (M. A. Kireçci)*

HIST 593 Seminar in English History I
Major themes in the history of the British Isles during the Medieval and Early Modern periods (c. 500 - c. 1600). A broadly chronological survey tailored to the research interests of the participants. *Credit units: 3 ECTS Credit Units: 7. Aut (D. E. Thornton)*

HIST 595 Seminar in American History I
Independent work on the history of the United States in the nineteenth century. *Credit units: 3 ECTS Credit Units: 7.*

HIST 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

HIST 605 History of Ottoman Diplomacy
This course provides our students with a focused survey and analyses of Ottoman diplomatic history from the beginning to the end of the Empire. The course shall look at the ways in which Ottomans conducted diplomacy, granted concessions and enacted agreements during different time periods, as well as the historical development of institutions that practiced diplomacy. Our focus will be on the diplomatic interactions and the social, economic, political, and cultural contexts in which they take place. When powerful, the Ottomans dictated their will on their rivals but starting from the early 18th century the Ottomans had to negotiate with other powers and employed non-Muslims who spoke foreign languages in the service of the government ,eventually creating a new office, Hariciye Nezareti. The course will evaluate several important turning points in the history of the Ottoman Empire by specifically looking at the diplomatic relations which defined these important moments i.e. among several others, the Ottoman-Russian and Ottoman-Iranian wars, the Berlin Congress, Refugee Problems, the Balkan Wars and World War I. The intensified practice of diplomacy, public diplomacy and the influence of Ottoman reforms on its relations with foreign powers during the nineteenth century will also be scrutinized. The diplomatic

efforts of the founding cadres of the Turkish Republic after the World War I and during the National Struggle for Independence will also be dealt with.
Objectives of the Course: (1) to analyze the process through which the Ottoman Empire enacted its diplomatic relations, (2) to gain a historical insight about the legacy of Ottoman and European diplomatic relations from the 14th to the 20th centuries, (3) to develop a better understanding of the internal and external dynamics of the ways Ottoman diplomatic strategies (4) to gain insight about the important events in the history of Ottoman relations with Europe, Asia, Russia and other parts of the world. *Credit units: 3 ECTS Credit Units: 7.*

HIST 670 Topics in the History of Communism 1847-1953
This course takes the outstanding moments and writers in the history of Communism. It starts of course with Marx and the Communist Manifesto, and proceeds through the construction of Capital and the International to a discussion of the emergence of socialism especially in France and Germany. It moves on to a consideration of Lenin's adaptation of Marx to fit the world of Imperialism, and the position of large semi-capitalist states such as Russia (and later China). The success of the Bolsheviks in Russia alone is discussed, and then the emergence of the USSR as a super-power, especially with the Second World War. The course ends with the death of Stalin in 1953. *Credit units: 3 ECTS Credit Units: 8.*

HIST 692 Pre-Thesis Seminar
Through meetings between MA student and adviser, allows student course selection (restricted electives, electives, additional courses) to be discussed and controlled. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

HIST 693 Pre-Thesis Seminar
Through meetings between Ph.D. student and adviser, allows student course selection (restricted electives, electives, additional courses) to be discussed and controlled. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

HIST 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Staff)

HIST 701 British Societies 1793-1901
The course treats of the perticular histories, i.e. social, cultural, economic, religious, political, etc., of the nations and regions of the British Isles in the nineteenth century. *Credit units: 3 ECTS Credit Units: 7.*

HIST 702 Modern Middle East since 1800
The Middle East stands at the focal point of International System and claims quite a big deal of our current political debates, a situation which is going to last for several years to come. Most of the current political issues surrounding the Middle East have roots in the complex and complicated history of the region, which suggest the necessity of a historical framework. This course is designed to fill that gap. Modern Middle East Since 1800 explores history of the modern Middle East since 1800. The geography and the concept that we call 'the Middle East' emerged mainly in parallel with the dissolution of the Ottoman Empire. A specific attention therefore will be given to what was there before the region had turned into its present form, what we know as the *Middle East.* The course is organized around themes and chronological events, surveying a wide range of issues: Themes that we will investigate include but are not limited to the rise of European Empires, Napoleonic invasion of Egypt, the notions of decline, modernization and colonization; Constitutionalism, nationalism, Abdulhamid and Islamism, the Committee of the Union and Progress, partitioning of the Ottoman lands after the World War I and the emergence of the new state system in the post war era. Historical and contemporary interactions between the Middle East and Europe will also be underlined. Among the central questions we will examine are the response from Ottoman societies to the challenges of colonialism and secular modernism; and, the clash between outside and local forces. Studying the history of the region will shed a better light on our understanding of the most recent developments in the region (i.e. crisis revolving around Arab Spring countries) and, help us better contextualize future challenges. Students will be exposed to original source materials that frame the key issues in the modern Middle East and engage in non-partisan discussion through written and oral presentations. *Credit units: 3 ECTS Credit Units: 7.*

HIST 705 History of Russia: From Tsardom to Empire
Course content begins with the founding of the first Russian state and continues to the Eastern question and Russo-Turkish war 1877-1878. The course will introduce the student to the basic facts of Russian history paying attention to the following key periods: origins of Russia-Kievan Rus; Mongol Invasions and Mongol-Tatar suzerainty of the Golden Horde; the rise of the princes of Moscow and Moscovite Tsardom; imperial Russia under the Romanov dynasty. Special attention will be devoted to Ottoman-Russian relations and to imperial Russian policy in the Balkans. *Credit units: 3 ECTS Credit Units: 7.*

HIST 707 The United States and the Second World War
A research seminar on the history of U.S involvement in the Second World War. Topics include American isolationism, the decision to intervene, wartime strategy, operations and diplomacy, leadership and relations with Allies, the “home front” the war economy, and impact of the war upon American society and culture. *Credit units: 3 ECTS Credit Units: 7.*

HIST 708 European Migration to the Ottoman Empire and Early Republican Turkey
The course aims at giving an overview of European Migration to the Ottoman Empire up to Early Republican Times (1930ies). Jewish immigrants of 15th century Spain, the Levantines, renegades, and converts to Islam, reformers in different areas in the 18th and 19th centuries up to German intelligentsia migrating to the Republic of Turkey during World War II will be dealt with. Biographies of selected persons from different backgrounds will be introduced. Within the framework of the course, migration theories will be subject of discussion; selected primary sources will be studied and analysed. *Credit units: 3 ECTS Credit Units: 7. Aut (M. A. Kireçci)*

HIST 710 Topics in Modern European History 1870-1970
This course will take the most significant episodes of modern European (and in part world) history with a view to encouraging students’ interpretive abilities. The topics will be Imperialism around 1890, the "Great Depression" of the later nineteenth century and what it meant, the spread of parliamentary constitutionalism, the rise of Socialism and of a new Political Catholicism. Minority nationalism will be examined, and the rise of Fascism and Communism. The course ends with the attempt to create a new Europe after 1947, and the involvement of the USA. *Credit units: 3 ECTS Credit Units: 8. Aut (N. Stone)*

HIST 713 History of European Integration
This Seminar explores the history of the European movement from a political, social, economic and cultural perspective from the interwar period through the end of the Cold War. Topics include alternate visions of Europe, the histories of European institutions and legal regimes, the trajectory of ’widening’ and deepening, the relations between European integration and the Cold War, biographies of the principal figures in the European movement (Briand, Monnet, Schuman, Spinelli, Delors, etal), and legacies of European federalism in present -day relations of the EU with wider world. *Credit units: 3 ECTS Credit Units: 7. Spr (K. Weisbrode)*

HIST 714 Central Eastern Europe (1815-1945)
This course will cover assorted topics in the modern history of Central Europe, extending from the later nineteenth century to 1970, with the possibility, for IR students, of studying the late-Communist period. The area involved stretches from Poland to the Balkans, but the students will be able to concentrate on countries that are of particular interest to them, e.g. Yugoslavia or Hungary. Some themes of great importance will be treated: the failure of parliamentary Liberalism (the 1890’s and 1930’s), the treatment of questions of nationalism and minority rights throughout the period; the rise of left-wing and political-Catholic parties; the relationship of agriculture and economic development; and the extraordinary cultural flourishing associated with ’Vienna 1900’ but also extending to Prague and particularly Budapest; the process of Communist take-over. With the exception of some memoirs, the existing English-language literature should be adequate for the course. *Credit units: 3 ECTS Credit Units: 8. Aut (N. Stone)*

DEPARTMENT OF INTERNATIONAL RELATIONS

A. E. Yeldan (Acting Chair), E. Aydınlı, A. Bilgiç, H. P. Bilgin, S. Buldanlıoğlu Şahin, B. Esen, T. Fougner, O. Gökçe, S. Ş. Güner, C. M. Hoffmann, P. İpek, O. İşçi, S. H. Kırımlı, S. Köstem, C. E. Mutlu, İ. Ö. Özdamar, N. Stone, D. Tsarouhas, P. A. Williams.

Part-time: T. Bayar, G. Biltekin, İ. H. Doğankaya, C. Hernandez Ferreiro, G. Kara, N. Pamir, G. Turan.

International Relations (IR) is a relatively new discipline. Its importance, however, has been rapidly growing in recent decades. All of us are affected by the international environment and by foreign policy decisions. International issues are becoming increasingly significant, complex, and diversified. We often read and hear about such issues as the Arab-Israeli conflict, the Aegean dispute, the post-Cold War period, the European Union, arms control negotiations, and problems of international trade and finance. All these issues lend themselves to conflicting interpretations and competing alternative solutions. In order to grasp the significance of these contemporary problems, we need to have not only a certain degree of specialized knowledge about the geographical regions in question, but also some theoretical understanding of International Relations.

Career opportunities in the field increase as Turkey's foreign relations diversify. The diplomatic service and other sectors of public bureaucracy continue to be an important source of employment. In addition to this, the media, private sector, professional organizations, and universities need increasing numbers of specialists in international affairs.

UNDERGRADUATE PROGRAM

The undergraduate program is comprised of a broad set of integrated courses designed to provide the training and perspective necessary for future career responsibilities in the field of International Relations. These courses emphasize increased competence in IR specialties such as International Law, Diplomatic History, Politics of International Economy, Foreign Policy Analysis, Global Issues and Area Studies. The teaching objectives are to maintain the crucial balance between theory and practice and to ensure that every student is exposed to the latest understanding of all the key IR issues and to the conceptual and analytical frameworks underlying them.

The core set of courses provides the fundamentals of the field of IR while a wide variety of elective courses, to be taken from the department as well as from the Departments of Political Science, Economics and Management, permits students to develop a program that will meet personal needs and special career interests.

For students who choose to pursue a more advanced degree in the field, the Department offers a Master's degree program and a doctoral degree program with considerable flexibility for graduate students to develop specialized academic programs to suit their needs and interests.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ECON 107	Principles of Microeconomics	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
HCIV 101	History of Civilization I	3 / 6
POLS 101	Introduction to Political Science I	3 / 6
SOC 101	Introduction to Sociology	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CS 121	Introduction to Computer Tools	3 / 6
ECON 108	Principles of Macroeconomics	3 / 6
ENG 102	English and Composition II	3 / 6

HCIV 102	History of Civilization II	3 / 6
IR 101	Introduction to World Politics	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
IR 205	Diplomatic History	3 / 6
IR 227	Research Methods in International Relations	3 / 6
MATH 264	Statistics for Social Sciences	3 / 6
PHIL 243	Social and Political Philosophy I	6 / 12

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
IR 236	20th Century World Politics	3 / 6
LAW 210	Basic Concepts of Law	3 / 4
PHIL 244	Social and Political Philosophy II	6 / 12
PSYC 102	Introduction to Social Psychology	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
IR 303	International Law	3 / 6
IR 335	International Relations Theory	3 / 6
IR 338	Politics of International Economy	3 / 6
	General Elective	3 / 6
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
IR 305	International Organizations	3 / 6
IR 333	Foreign Policy Analysis	3 / 6
	General Elective	3 / 6
	Restricted Elective	3 / 6
	Unrestricted Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
IR 399	Summer Training	- / 6
IR 439	Turkish Foreign Policy	3 / 6
	Restricted Elective	3 / 6
	Unrestricted Electives (3)	9 / 18

Spring Semester		Credits / ECTS Credits
	Restricted Electives (2)	6 / 12
	Transdisciplinary Senior Project	6 / 12
	Unrestricted Elective	3 / 6

In addition to elective courses offered by the Department of International Relations, students are allowed to take electives from the departments of Economics, Political Science, Psychology, Faculty of Law, Management and/or Philosophy or foreign language courses, among others.

Bilkent-Binghamton Dual Diploma Program in Global and International Affairs

The dual diploma program Bilkent-Binghamton, SUNY bachelor's degree in Global and International Affairs (GIA) offers students at Bilkent University a unique program of interdisciplinary study in International Relations, History, Economics and other fields yielding high-level substantive knowledge and analytical skills for careers requiring global perspectives on international issues of various kinds. This four-year program includes full-time enrolment for four semesters at Binghamton University, the SUNY doctoral campus most noted for its undergraduate excellence, its comprehensive internationalization, and its history of fruitful association with Turkish universities. Students in the program must

meet all of the requirements for a Bachelor's degree both at Binghamton University and at Bilkent University. According to the residency requirement of the GIA program, students must spend at least 4 semesters at Bilkent University and at least 4 terms at the Binghamton University. After the first year spent at Bilkent University, the student may decide which of the following years will be spent at which campus. Although degree recipients receive two diplomas, one from each institution, both diplomas refer to the degree as jointly awarded, and no student can receive the degree or either of the diplomas without satisfying the academic requirements of both institutions.

To be able to start the program, students must achieve a satisfactory score, specifically a 550 or better (plus a score of 4 in the written part) on the U.S. Test Of English as a Foreign Language (TOEFL) (overall score 82 on the internet based with no less than 20 for each section - listening, reading, speaking, and writing) or with no less than 5.5 for each section overall score 6.5 on International English Language Testing System (IELTS). It is not possible to start the program without having a satisfactory score in one of these exams.

Minimum credits for the joint Bachelor's Degree in Global and International Affairs is 126 (minimum of 50 credits from Binghamton)

Following is the first and remaining year courses to be taken at Bilkent University.

FIRST YEAR (Bilkent University)

Autumn Semester		Credits / ECTS Credits
CS 121	Introduction to Computer Tools	3 / 6
ECON 107	Principles of Microeconomics	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
HCIV 101	History of Civilization I	3 / 6
POLS 101	Introduction to Political Science I	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ECON 108	Principles of Macroeconomics	3 / 6
ENG 102	English and Composition II	3 / 6
HCIV 102	History of Civilization II	3 / 6
IR 101	Introduction to World Politics	3 / 6
MATH 264	Statistics for Social Sciences	3 / 6
TURK 102	Turkish II	2 / 2

REMAINING YEAR (Bilkent University)

Autumn Semester		Credits / ECTS Credits
HIST 200	History of Turkey	4 / 8
IR 399	Summer Training	- / 6
	Restricted Electives (2)	6 / 12
	Unrestricted Electives (3)	9 / 18

Spring Semester		Credits / ECTS Credits
	Restricted Electives (3)	9 / 18
	Unrestricted Electives (2)	6 / 12

(Binghamton University)

Binghamton will specify which courses are to be made available to students in this program in a given year. Binghamton also provides advising prior to students' arrival in Binghamton and during their stay to ensure that they enroll in courses appropriate to their individual academic and personal backgrounds, needs, and interests. Following is a minimum credit breakdown by category (please note that some of these credits will be satisfied with courses taken at Bilkent):

Political Science: 32 credits

History: 32 credits

Economics: 9-12 credits

Research Methods: 6-8 credits

General Education: 36 credits (some of which will be satisfied with courses taken in above categories)

Writing 111: 4 credits (to be taken during students' first semester of Binghamton)

MINOR PROGRAM

The minor degree program in International Relations offers Bilkent University students with an interest in world politics a solid basis for understanding world politics in a globalizing world as well as Turkey's international relations. The minor degree program is made up of four must courses: Introduction to World Politics, 20th Century World Politics, Foreign Policy Analysis, and International Relations Theory. Students also take three elective courses of their own choosing. The Department offers a wide variety of courses, all of which are open to minor degree students (subject to availability).

Prerequisite Courses: IR 101 Introduction to World Politics

CURRICULUM

Courses		Credits / ECTS Credits
IR 236	20th Century World Politics	3 / 6
IR 333	Foreign Policy Analysis	3 / 6
IR 335	International Relations Theory	3 / 6
	Electives (3)	9 / 18

GRADUATE PROGRAM

Master of Arts in International Relations

Admission: Prospective students must have completed the Bilkent University requirements for a Bachelor of Arts degree in International Relations or equivalent training. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Degree Requirements: A completed program must satisfy the following criteria:

1. Completion of at least 24 units of credit course work. The seven required courses include the following: International Relations Theory, Issues in Turkish Foreign Policy, Pre-Thesis Seminar, Academic Practices, Fundamentals of Social Research Design, Research Methods and Academic Publication Ethics, and Master's Thesis. The five elective courses can be selected from the offered graduate courses each semester.
2. Completion of an M.A. thesis proposal before the start of the second year.
3. An M.A. thesis must be submitted to and approved by the thesis defense committee.
4. A cumulative grade point average of at least 3.00 must be maintained for the totality of Master's level work.

Master of International Affairs and Public Policy (MIAPP)

The curriculum of the Master of International and Public Policy (MIAPP) is designed to provide students with a broad analytical background in the major fields of international affairs and European integration, combined with a specific focus on the newly emerging issues of governance and globalization. The program of study requires 60 units of graduate credits and is completed in two semesters with an extra preparation period up to two semesters of full-time attendance without the requirement of submitting a Master's thesis.

By underlining updated knowledge and skills essential to careers in international, private, and public sectors, the program responds to new professional opportunities at home as well as abroad.

The program addresses the fundamental issues of the post-Cold War era, globalization, public governance, corporate governance and European integration with an approach that incorporates scholarly perspectives and practical experience.

Requirements for Application: An undergraduate degree in international relations is not a prerequisite for admission. Graduates of other disciplines are also eligible and are encouraged to apply.

CURRICULUM

Courses		Credits / ECTS Credits
ECON 507	Economics for International and Public Affairs I	3 / 6
ECON 508	Economics for International and Public Affairs II	3 / 6
ENG 406	Graduate Writing and Presentation Seminar	3 / 5
IR 543	International and Public Policy Decision Making	3 / 8
IR 547	International Politics	3 / 8
IR 572	European Union Integration, EU and OECD Economies	3 / 8
IR 574	Turkey's International Relations	3 / 8
IR 594	International Law and Organizations	3 / 8
IR 629	Global Political Economy	3 / 8
MAN 509	International Business	3 / 8
MIAPP 501	Term Project	- / 24
	Restricted Electives (8)	24 / 48
	Unrestricted Electives (2)	6 / 12

Restricted Electives: All 5XX or higher-level courses with at least 3 credits.

Unrestricted Electives: All 3XX or higher-level courses with at least 3 credits.

Doctor of Philosophy in International Relations

The doctoral program at Bilkent IR is a highly specialized program. Its purpose is to develop the skills of doctoral candidates in international political analysis and to increase their capacity to conduct research on theoretical issues, international security studies, strategic studies, comparative foreign policy, international political economy, regional integration, global environmental problems, international law, peacekeeping and conflict resolution as well as area studies such as the European Union, the Balkans, Russia, the Middle East, Central Asia and the Caucasus. The program is reserved for a limited number of students who are qualified and committed to spend several years conducting intensive research. The program is particularly suitable for students who wish to pursue an academic career.

Degree Requirements: Students accepted to this program must complete at least 26 credit hours of course work (prerequisite course not included in this total is IR 501 International Relations Theory, which is a prerequisite for IR 621 Current Debates in International Relations Theory). Students may take elective courses from other departments in accordance with IR Ph.D. curriculum requirements. A cumulative grade point average of at least 3.00 must be maintained for the totality of Ph.D. coursework. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The doctoral program must be completed in at most 12 semesters.

COURSE DESCRIPTIONS

IR 101 Introduction to World Politics
This course introduces students to international relations by presenting the basic concepts, approaches and major contemporary currents in world politics. The purpose of the course is to provide students with a framework for analysis whereby they can understand and evaluate international phenomena. It covers a wide range of topics including security issues such as war, terrorism, diplomacy and arms control; ecological issues such as climate change and resource depletion, and economic issues such as development, world trade and globalization. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Aydınlı, T. Fougner) Spr (E. Aydınlı, T. Bayar, P. İpek)*

IR 205 Diplomatic History
Diplomatic history from the Peace of Westphalia until World War I. *Credit units: 3 ECTS Credit Units: 6. Aut (S. H. Kırımlı) Spr (S. H. Kırımlı)*

IR 227 Research Methods in International Relations
This course aims to introduce the students how to design an IR research paper and gradually write one throughout the semester. The students are familiarized with the basic concepts of research philosophies and methods such as formulation of a good research question, a theory, hypotheses and data collection & analysis techniques. The course does not only focus on theory but also makes the students acquainted with applied and empirical research. For that purpose, students get first hand experience on how to do library research by actually going to the library and meeting with a library advisor. Overall, the objective of the course is to build a basic background in students who are later in their training expected to write good research papers. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Esen, S. Ş. Güner) Spr (S. Ş. Güner)*

IR 236 20th Century World Politics
This course introduces students to critical events and dynamics of the 20th Century, including but not limited to the League of Nations, inter-war period, World War II, United Nations, Cold War, (super-power conflict and the Non-Aligned Movement), Détente; Second Cold War, the revolutions of 1989 and post-Cold War challenges to the international system. *Credit units: 3 ECTS Credit Units: 6. Aut (O. İşçi) Spr (O. İşçi)*

IR 303 International Law
The first part of a comprehensive survey of international law as the normative factor in international relations, to be continued in IR 304. The basic legal concepts are described and explained, together with a view of prospective developments. Rules of law are considered in their political, economic and cultural contexts, while emphasizing their normative character and the elements of legal reasoning. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Turan) Spr (T. Bayar)*

IR 305 International Organizations
A comprehensive study of the development of international organization and its role in the contemporary world. The central part of the course deals with the United Nations, its structure, performance and prospects, both in the maintenance of peace and in the economic and social field. Then specialized agencies and the regional organizations are treated on a descriptive basis. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Buldanlıoğlu Şahin, D. Tsarouhas) Spr (D. Tsarouhas)*

IR 311 Russian History
A survey of Russian History from the rise of Kievan Confederation (9th century) to the Bolshevik Revolution. Focus will be on reform, revolution, ideology and society. *Credit units: 3 ECTS Credit Units: 6.*

IR 322 International Protection of Human Rights
Analyzes the concept of human rights firstly at the domestic level and then shifts the focus to the international level. During these analyses minority rights are also analyzed from the point of the treaties signed by the Ottomans and the Turkish Republic. The turning point in the protection of human rights at the international level commences by the U.N. Due to this all the developments in the U.N. and also in the Council of Europe in this particular field are analyzed in detail. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Bayar) Spr (T. Bayar)*

IR 331 War, Peace and Security
This course is about three concepts that have been at the core of thinking about world politics, namely: 'war', 'peace' and 'security'. By introducing a wide variety of intellectual traditions and contemporary ideas on these three core concepts to students, this course aims to provide a comprehensive basis for understanding the dynamics of world politics. The general objectives include the development of oral, written and research skills as the course requires students to become able to read, absorb and critically assess a large amount of complex (and at times contradictory) material. The subject-specific objectives of the course include the ability to discuss the causes and significance of war, alternative meanings and practices of peace, and contending conceptions and practices of security. *Credit units: 3 ECTS Credit Units: 6.*

IR 333 Foreign Policy Analysis
The making and implementation of foreign policy in theory and practice. The theoretical literature on foreign and security policymaking. Case Studies. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Biltekin) Spr (S. Köstem, İ. Ö. Özdamar)*

IR 335 International Relations Theory
This course provides students with a comprehensive introduction to contemporary international relations theory. No prior knowledge of international theory is expected. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IR 101. Aut (A. Bilgiç, S. Ş. Güner) Spr (T. Fougner)*

IR 338 Politics of International Economy
The aim of this course is to provide students with a comprehensive introduction to International Political Economy (IPE) as a field of study. The course focuses on recent developments and current trends in the world political

economy, various theoretical IPE-perspectives, as well as more specific topics such as international monetary affairs, global finance, foreign debt, international trade, global production, foreign direct investment, transnational corporations, and development. *Credit units: 3 ECTS Credit Units: 6. Aut (P. İpek, S. Köstem) Spr (P. İpek)*

IR 349 International Relations in Movies

This course will use movies to understand and explain international issues. Through classroom discussions, readings and films that deal with international issues, we will analyze how these films shed light on international affairs, how they show us different perspectives on such issues and deepen our understanding. We will see 6 to 8 movies during the semester and discuss how the content of the movie relates to what you have learned in your studies in international relations. In these movies and readings, we will focus on issues like foreign policy making, war, terrorism, ethnic conflict, identity, environmental issues, revolutions, civil wars, foreign intervention, international institutions, espionage, Cold War and so on. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Ö. Özdamar)*

IR 350 Negotiation and Mediation in Politics

This course focuses on both the theory and practice of negotiation and mediation concerning legal and political conflicts. The course covers a wide range of issues concerning negotiations including the different theories of bargaining, different outcomes of negotiations, processes of negotiation, psychological dynamics affecting negotiations, effective communication strategies, the role of language, culture, and power in negotiations, and the role of third parties in negotiations. An important part of the class is devoted to teaching the applied negotiation and mediation skills to students. Towards this end the students will carry out negotiation simulations and role plays related to various legal and political negotiations. In addition to the role plays and simulations, the course will also discuss several negotiation cases in detail including the negotiations over the Turkish Constitution, Cyprus, and Jerusalem. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. E. Çuhadar)*

IR 351 Globalization

The focus of this course is globalization-a concept encompassing the transnational linkages that increasingly characterize today's world. As an introductory course, the aim is to develop a base of knowledge, analytical skills, and a vocabulary of concepts useful both for understanding globalization and for further engagement with the multi-dimensional concerns of International Relations. It also aims to analyze and predict the emerging dynamics of global politics, not necessarily only related to international patterns but to include as well transnational and domestic politics. In the course we will examine "global" theories that seek broadly to explain the patterns of interaction and conflict that are likely to dominate our world in the near and longer-term; try to situate globalization in historical context; and look at the relationships between globalization and culture, people flows across state borders, nationalism and ethnicity, security, democracy, religious fundamentalism, gender, the environment, and economics. Finally, we will consider these concepts by looking at their interaction in the Turkish case. *Credit units: 3 ECTS Credit Units: 6.*

IR 352 Environmental Issues and Ecological Sustainability

The course will explore environmental issues such as energy, water resources, global warming, climate change, natural disasters, food production, and biodiversity at local, national and international levels. Students will analyze how these issues affect not only the environment, but also the economy, the health and wellbeing of people, the lives of other organisms, and the future of the planet. The class will co-create experiences to gain an appreciation of policies and protocol to shape a more sustainable ecological future. The course begins with students analyzing their *ecological footprint,* followed by an audit of Bilkent University's resource management policies. Through a review of regional and national media sources, the class will identify environmental issues important to the city of Ankara, and more generally to Turkey. Based on research and findings, teams will select an issue to investigate, analyzing challenges and opportunities to develop a proposal for the resolution of a selected issue. *Credit units: 3 ECTS Credit Units: 6.*

IR 353 Energy Security and Foreign Policy

This course examines the challenge for energy security in relation to foreign policy analysis. The course has three parts. The first part outlines the continuities and changes in the global energy market to underline the emerging challenges in securing energy supplies, access to resources and the environment. The second part presents different theoretical approaches to facilitate a conceptual framework in analyzing how energy security relates to foreign policy. The third part focuses on selected issues and cases to analyze and discuss energy security and foreign policy in the light of the different conceptual frameworks presented in the second part of the course. *Credit units: 3 ECTS Credit Units: 6.*

IR 354 Introduction to Middle East Politics

This is an introduction course to key issues in domestic and regional politics in the Middle East which aims to provide an overview of the main political developments of the region, and acquaint students with a major center of world affairs. In this course students will be introduced to the complexity of the Middle East and its politics, while attempting to understand the dynamics that shape the region. In addition, students will explore key conceptual frameworks through which the Middle East is studied and understood. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

IR 355 Public Policy Making in the European Union
This course is about policy processes in the EU. It is designed to equip students with knowledge, skills and research experience to analyze the challenges in the EU decision-making process. During the lectures, we will try to understand the policy making process in the EU by touching on the most complicated policy areas. Specific focus will be put on the current financial crisis and contemporary debates on the future integration of the EU. At the end of this course, students should be familiar with the complex EU policy making and policy implementing processes with a capacity to examine supranational policy problems and controversies, as well as to develop solutions in the field. The participants of the course will be able to analyze the political environment of European public policy and form effective strategies. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Tsarouhas)*

IR 356 International Development Assistance
Analyses of the historical evolution and our theoretical understanding of development assistance. Its role in foreign policy and main elements of the practice of international development assistance (actors, policy paradigms and modalities of intervention), through a methodology combining analysis and access to real-life examples and practitioners. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Hernandez Ferreiro) Spr (C. Hernandez Ferreiro)*

IR 357 Identity and Conflict
Ethnic, religious, and national identity formations of individuals, groups, and states. Structural mechanisms and dynamics of these identities and their role in contemporary conflicts through the lens of conflict analysis and resolution filed. Case studies to provide a better conceptualization of the topics. *Credit units: 3 ECTS Credit Units: 6.*

IR 399 Summer Training
This course refers to the internship course which will need to be satisfied with an internship to be conducted during the summer of the end of the third year in the program. The course will be a non-credit (0 credit) course to be marked as S or U. To be satisfied by undertaking 20 days of internship during the summer and the submitting a report based on the experience. *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

IR 413 Game Theory and International Politics
This course is designed to study rational behavior related to conflict. Substantively, it focuses on strategic rationality underlying 1. bargaining; 2. deterrence; 3. surprise attack. *Credit units: 3 ECTS Credit Units: 6. Spr (S. Ş. Güner)*

IR 439 Turkish Foreign Policy
Analysis of Turkish Foreign Policy from the beginning of the Republic until 1950. *Credit units: 3 ECTS Credit Units: 6. Aut (O. Gökçe) Spr (O. Gökçe)*

IR 441 Latin American Politics
A general introduction to Latin American politics and society. The dominant regional patterns across the continent, both historically and in contemporary times, and the national variations in terms of political and societal developments. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Esen)*

IR 454 International Environmental Politics
This course will focus on applying divergent theoretical approaches (realism, neoliberal institutionalism, domestic politics, epistemic communities, critical theory, feminism, etc.) to analysis of the causes, consequences, and resolvability of a representative range of international environmental political issues, from disputes relating to transboundary water shortages and degradation to global common property resource issues (especially ozone layer depletion, acid rain, and global warming). *Credit units: 3 ECTS Credit Units: 6.*

IR 464 History of the Cold War
The history of the cold war spans 1946-1991. This course is designed as an explanation of major cold war events, and foreign policies of the superpowers, as well as those of their respective allies; the socio-economic trends that influenced thaws and eventually caused the end of the cold war. *Credit units: 3 ECTS Credit Units: 6.*

IR 470 International Terrorism and Transnational Crime
This course is designed to give students a comprehensive understanding both conceptual and practical of the topics of international terrorism and transnational crime. On the conceptual side, the theories, origins, definitions, forms, strategies/tactics, international relations and countering strategies of international terrorism and transnational crime will be explored. On the practical side, we will have guest speakers who are active counter terrorism/organized crime professionals, as well as having the opportunity to visit relevant departments of the national and military police commands. The course will be run on a lecture/seminar basis, and will include a simulation activity of an international terrorist act, which will involve the participation of all class members. *Credit units: 3 ECTS Credit Units: 6.*

IR 472 Diplomatic Language and Translation
The purpose of this course is to familiarize the student with diplomatic language, which is different from the language used in ordinary life. The difference stems mostly from the terms and expressions used that have a meaning other than those found in dictionaries. The course is an introduction to the art of communication and finesse employed in the diplomatic profession and as such, should be taken only by those who are interested in

seeking employment in the Ministry of Foreign Affairs. *Credit units: 3 ECTS Credit Units: 6. Aut (O. Gökçe) Spr (O. Gökçe)*

IR 477 Political Economy of Natural Resources

This course introduces students to the importance of natural resources in the international political economy. It explores: how previously marginal actors on the energy scene, such as China, India, Russia, Turkey and their Caucasian and Central Asian neighbors, have become more central; the extent to which European Union energy requirements are driving this shift; how this shift is reshaping multinational business strategies; how ethnic conflict and terrorism are posing salient risks to major hydrocarbon supplies and supply lines; and the degree to which the need to preserve environmental integrity will ultimately limit fossil-fuel consumption. *Credit units: 3 ECTS Credit Units: 6.*

IR 492 Gender in International Relations

The aim of this course is to highlight the role played by gender in world politics. The course locates a concern with gender in the broader context of International Relations as a field of study, and seeks to uncover and critically assess the gender dimension of key IR-issues such as war, peace, security, international political economy, development, and human rights. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

IR 493 European Union

This course is designed to introduce the students to the history, institutions and policies of the European Union. It aims to develop an understanding of the basic dynamics of the European integration with a view of national and global contexts in which the EU has evolved towards an “ever closer union”. The course does not require previous study on the EU. *Credit units: 3 ECTS Credit Units: 6.*

IR 494 Causes and Prevention of War

This course examines the causes and prevention of war. The goal is to discover and assess why interstate and intrastate (civil) wars take place and how to prevent or at least control them. The first part of the course focuses on theoretical aspects of war and in the second part we aim to empirically understand war through the study of various case studies. The two world wars, ethnic cleansing in states such as Rwanda are only a couple of the cases we cover. By the end of the course students will be familiar with basic theories of causes of war and cases associated with them. Finally, an assessment of the possible causes of wars of the future, namely terrorism follows with a focus on possible means to prevent such wars. The course objective is to involve the students in an in-depth examination of war through discussion of extensive readings, class presentations and critical essay writing. *Credit units: 3 ECTS Credit Units: 6.*

IR 495 World Energy Politics

Energy resources and their geographical distribution. Advances in energy technologies. reference and alternative scenarios on energy. Supply and demand. Factors and actors effecting the oil prices. Major actors in the energy scene (States, organisations, etc). Main principles of energy policy. Energy policies and strategies of principal actors (U.S., Russian Federation, E.U., China and others). Concept of the energy security. Turkey’s resources and energy policies. Will Turkey be an energy bridge? The importance of international relations on energy policies. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Pamir) Spr (N. Pamir)*

IR 4005 Issues in International Political Economy

This graduate seminar course explores a series of issues central to the field of International Political Economy (IPE). While the exact focus is contingent on the contemporaneous disciplinary and policy agendas, as well as on the research interests of the participants, the course is centrally concerned with integrating theory and practice in a thorough and critical engagement with both IPE as an academic field of study, and various substantive aspects of the current world political economy. *Credit units: 3 ECTS Credit Units: 6.*

IR 4109 Issues for Turkey in Global Political Economy

This course is designed to introduce you to the issues important for the Turkish Republic in the global political economy. The course topics are grouped through a historical overview of the political economy of Turkey in relation to structural economic transformations and political developments in the globalization process. The course is divided into three sections. Section one introduces the relationship between politics and economics of Turkey between 1908 and 1960s. The issues covered in section one are state-led development and important substitution industrialization. Section two examines the economic cries and market liberalization period between 1970 and 1991. This issues covered in section two are chronic inflation, financial cries, privatization, export-led economic growth, and foreign debt. Section three will cover student presentations on a topic that are related to the twin processes of regionalization, specifically accession to the EU, and globalization in Turkey. *Credit units: 3 ECTS Credit Units: 6. Aut (P. İpek)*

IR 4114 Religion and IR Theories

The proposed course aims at increasing our understanding of how religion shapes international relations. The main topic of the course is the integration of religious subject matter into conceptual frameworks ranging from realism to liberalism and constructivism. The main question is how does religion translate into international politics. Hence, theoretical and empirical views are blended together. The subject matter covers whether religious actors can act as strategic actors, whether religions can have variable impact upon war and the

likelihood of war in addition to analyses of international politics through the prism of religion and the interaction between secular and religious forces at global level. *Credit units: 3 ECTS Credit Units: 6.*

IR 4115 Turkey's International Relations and the Middle East

This course is designed to orient the student about Turkey's conduct of domestic and foreign policy with respect to the Middle East from both an historical and international relations perspective. The course will span from the end of WW I to contemporary times, with focus on mainly the Israel -Arab conflict, change and continuity, what factors play a role in the shaping of relations in the Middle East and how vital national interests are safeguarded. *Credit units: 3 ECTS Credit Units: 6.*

IR 4116 International Logistics

The course provides all of the concepts of international logistics with a special focus on management of international trade operations. The philosophy of international logistics and important international trade elements will be thought within the light of logistics management approaches. It aims to perceive the students the international logistics management and implementations and documentations of international trade. Within this scope, it has been targeted to introduce various sub concepts collectively through the baseline of international logistics and global marketing along with the processes for the entities of foreign trade management to enable students to understand the effects of the international logistics on international economy and relations. The course begins with the general explanations of international supply chain management in line with international logistics infrastructure and continues with the main implementations of international trade. The course also includes international transportation and security issues along with the competitive support of international logistics within the context of theoretical knowledge. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. H. Doğankaya) Spr (İ. H. Doğankaya)*

IR 4120 Globalization, Development and the Environment in World Politics

Hurricanes in the Americas, droughts in Africa, excessive pollution in China and other weather extremes and environmental challenges undermine our current forms of social, economic and political organisation in the international system and their capacity to maintain nature as a basis for human life on this planet in the future. Continuing processes such as global warming, looming water scarcities and resource conflicts beg questions about the relationship between world politics and nature in general. Can development be redefined in more sustainable ways or do we need to rethink our notions of growth and progress more fundamentally? This course investigates these questions by looking at the actors and issues implicated in the relationship between globalisation and environmental change in world politics. It engages with competing theoretical perspectives about the drivers of environmental change and its relationship to International Relations, Security and the Global Political Economy. The course begins with an overview over the debates about the relationship between nature, society and world politics before looking at key actors and more specialized debates. The course will proceed by contextualizing these general debates within a variety of specific case studies from around the world and discuss the potential for more sustainable forms of international development. *Credit units: 3 ECTS Credit Units: 6.*

IR 4121 Intervention in International Relations

This course examines the theory and practice of intervention in international relations. We will begin with an analysis of the historical, conceptual and normative aspects of intervention. Our discussions will center on the objectives, means and ends of intervention in situations of intra-state violence. We will also analyse the changes brought about by the end of the Cold War and the intensification of globalisation. We will then continue with more specific case studies and examine the circumstances and consequences of intervention. Investigation of these points will facilitate a deep understanding of the key themes and trends in the discourse and conduct of intervention as well as a critical discussion of the changes and continuities in arguments and practices over time. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Buldanlıoğlu Şahin)*

IR 4123 Environment, Climate Change and Sustainable Development

The main objective of the course is to analyse the concept of sustainable development in theory and practice specifically focusing on the interactions between the public domain, business world and the world we live in. Past and present strategies for promoting sustainable development, resistance to the concept, and some alternative conceptions and theoretical underpinnings of the notion of sustainable development will set the basis of discussions while the implications of the concept in politics of various sectors such as energy, transport, environment, agriculture and natural resource management will be explored. In particular the course will help the students to establish a connection between economic development and environment in terms of sustainability in the long-term and will help them to understand why international economic competition has and will have a continuous and pressing sustainability dimension. Topics like fast growth, production patterns, and population change will be reformulated from an environmental point of view allowing for critical thinking for future. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Kara)*

IR 4124 European Union Foreign Policy

This course aims to provide students with a theoretically informed understanding of the European Union's various foreign policy tools, objectives and behaviour. It examines the place foreign policy occupies in different theoretical approaches to European integration; the historical evolution of different foreign policy tools through which the European Union pursues its international affairs; various foreign policy objectives of the Union and the evolving relations between the European Union and the rest of the world. *Credit units: 3 ECTS Credit Units: 6. Spr (Staff)*

IR 4125 Contemporary Debates in Geopolitics
The study of the relationship between space, the political and power through the examination of identity-based, territorial, political, socio-economic, and cultural dynamics with a focus on 'critical geopolitics,' a school of thought that emerged in the 1980s that challenges hegemonic ways of seeing and representing such as in foreign policy discourse. *Credit units: 3 ECTS Credit Units: 6.*

IR 4126 International Climate Diplomacy
Ongoing negotiation process on global climate change, including its structure, key actors and their interests, issue areas, and history. Progress made over the course of negotiations thus far, and prospects for addressing remaining challenges of climate change. *Credit units: 3 ECTS Credit Units: 6.*

IR 4127 Citizenship and Identity in the European Union
Consideration of why the creation of identity is important in the EU and how common identity among societies can be created in a sui generis Union. Focus on main themes that are related with European identity such as citizenship, legitimacy, democracy and public sphere and also an analysis about the relationship between economic crisis in the EU and the identity. *Credit units: 3 ECTS Credit Units: 6.*

IR 4143 International and Public Policy Decision Making
This course aims at a gentle introduction of students into formal political theory. It is basically divided into two parts: individual decision-making theory and game theory. The first part concentrates on individual preferences and choice including decision making under certainly and risk, cardinal utility, subjective probability, the calculus and paradoxes of voting, and mispresentation of preferences. The second part includes two-person mixed-motive games, coalitional-form games, concepts of equilibrium such as iterated elimination of dominated strategies and backward induction, Nash and subgame-perfect Nash equilibrium. These analytical tools would serve as nuts and bolts for the student to go beyond mere description of political events, either domestic or international, and to construct their own explanations of puzzling choices at those levels. *Credit units: 3 ECTS Credit Units: 6.*

IR 4147 International Politics
This course offers an introduction to the study of international politics. It aims to first provide the historical, conceptual, and theoretical tools and lenses for analyzing behavioral and institutional patterns in the international system, and then to use these analytical means in exploring major international issues and events. Particular emphasis will be given to topics of international security, such as major power rivalries, the impact of globalization on security, and the management of low intensity conflicts. Government experts and practitioners will be invited as quest lectures for certain specific issues, such as international terrorism and regional geostrategy. *Credit units: 3 ECTS Credit Units: 6.*

IR 4174 Turkey's International Relations
This course will first examine the structural and historical determinants of Turkish foreign policy, with an emphasis on the foreign policy decision-making mechanism, as well as the sources of change and continuity. This will be followed by first, a general exploration of the dynamics of the sub-system/region in which Turkey is located, and then more in-depth analyses of Turkey's particular relations with different geographical regions, such as Europe, Eurasia, the United States, and the Middle East. Some experts from the Turkish foreign ministry, as well as public figures with experience and expertise on relevant issues, will provide guest lectures. *Credit units: 3 ECTS Credit Units: 6.*

IR 5115 Transnational Security
Various conceptualizations of security to develop a comprehensive understanding of the transnational challenges facing states and other actors as well as prospects for transnational cooperation. Reconsideration of theoretical positions, approaches, and tools used in security studies from a transnational perspective. New perspectives and policy suggestions to address the most hard-pressing problems of a transnational nature. *Credit units: 3 ECTS Credit Units: 8. Spr (E. Aydınlı)*

IR 5116 International State-Building
Dynamics of contemporary policy and practice of state-building interventions through relevant academic and policy literature on sovereignty, stateness and state 'failure? or 'fragility? and specific cases of international state-building interventions. Major theoretical approaches and recent experiences of intervention for constructing knowledge and evaluating the effectiveness and outcomes of the prevailing policy approaches devised as a solution to the problem of weak governance as a source of global insecurity. *Credit units: 3 ECTS Credit Units: 8.*

IR 5119 Issues for Turkey in Global Political Economy
International/global political economy with a focus on issues important for Turkey through a historical overview of the political economy of Turkey in relation to structural economic transformations and political developments in the globalization process. Relationship between the institutional legacy of the early modernization, industrialization during the Ottoman Empire and state-led development in Turkey between 1908 and 1960s, including the role of state in economic growth and development within competing theories of political economy of development. Economic crises and market liberalization period between 1980 and 1991, specifically focusing on the changing role of state and continuities in state-society relationship within the theoretical debate about internationalization of state in globalization process and politics of income distribution in neoliberalism. Major changes and continuities

for Turkey in trade, production/foreign direct investment, human development and income distribution in light of the previous debate on the role of state in international political economy. *Credit units: 3 ECTS Credit Units: 8. Aut (P. İpek)*

IR 5441 Latin American Politics
A general introduction to Latin American politics and society. The dominant regional patterns across the continent, both historically and in contemporary times, and the national variations in terms of political and societal developments. *Credit units: 3 ECTS Credit Units: 8. Spr (B. Esen)*

IR 501 International Relations Theory
The main traditions and currents of thought in international political theory. Early thinking about international relations. Major twentieth century approaches: idealist-realist debate; the power politics approach and its fundamental concepts such as balance of power, national interest, nationalism and imperialism. Behaviorism; systems thinking; interdependence and structure list theories. Decision-making and integration theories. *Credit units: 3 ECTS Credit Units: 8. Aut (E. Aydınlı)*

IR 507 Foreign Policy of the United States
This course examines the making and execution of US foreign policy in terms of the following factors: constitutional checks and balances; religious and ideological traditions; Presidential doctrines and "the lessons of history"; economic tools and cultural diplomacy; the role of special-interest lobbies; and area-specific concerns. *Credit units: 3 ECTS Credit Units: 8.*

IR 509 Pre-thesis Seminar
Students who have taken IR 519 (Research Methods) must have a thesis proposal in hand. Students will finalize these thesis proposals under their supervisors' guidance. Later, the proposal will be presented to the Graduate Director for his/her approval. Students will not be allowed to register for courses in the following semester unless they fulfill this condition. *Credit units: None ECTS Credit Units: 1.*

IR 522 Foreign Policy Analysis
An advanced seminar on foreign policy analysis literature. Actor-specific focus, which assumes source of international politics is humans, acting individually or in groups. Modern foreign policy theory, data and analysis. Process of decision making, political, rational and psychological factors. *Credit units: 3 ECTS Credit Units: 8. Spr (İ. Ö. Özdamar)*

IR 531 Central Eastern Europe (1815-1945)
Political and military history of Eastern Central Europe with an emphasis on wars and revolutions between 1815 and 1945. *Credit units: 3 ECTS Credit Units: 8. Aut (N. Stone)*

IR 537 The Russian Revolutions
This course focuses on the analysis of the events leading up to the revolutions of 1905 and 1917 in Imperial Russia. Particular attention will be paid to the social, economic and political transformations of the pre-revolutionary period; the nature of the revolutionary and liberal opposition and the reactionary imperial administration. The main stages of the revolutions, changes in the nature of the Russian autocracy, the role of Duma in the imperial administration system, the nationalities problem, the formation of various political organizations and ultimately the overthrow of the autocracy will be examined in detail. A particular emphasis will be on the impact of the Russian revolutions on the subsequent global developments. *Credit units: 3 ECTS Credit Units: 8.*

IR 543 International and Public Policy Decision Making
This course aims at a gentle introduction of students into formal political theory. It is basically divided into two parts: individual decision-making theory and game theory. The first part concentrates on individual preferences and choice including decision making under certainly and risk, cardinal utility, subjective probability, the calculus and paradoxes of voting, and mispresentation of preferences. The second part includes two-person mixed-motive games, coalitional-form games, concepts of equilibrium such as iterated elimination of dominated strategies and backward induction, Nash and subgame-perfect Nash equilibrium. These analytical tools would serve as nuts and bolts for the student to go beyond mere description of political events, either domestic or international, and to construct their own explanations of puzzling choices at those levels. *Credit units: 3 ECTS Credit Units: 8.*

IR 547 International Politics
This course offers an introduction to the study of international politics. It aims to first provide the historical, conceptual, and theoretical tools and lenses for analyzing behavioral and institutional patterns in the international system, and then to use these analytical means in exploring major international issues and events. Particular emphasis will be given to topics of international security, such as major power rivalries, the impact of globalization on security, and the management of low intensity conflicts. Government experts and practitioners will be invited as quest lectures for certain specific issues, such as international terrorism and regional geostrategy. *Credit units: 3 ECTS Credit Units: 8.*

IR 574 Turkey's International Relations
This course will first examine the structural and historical determinants of Turkish foreign policy, with an emphasis on the foreign policy decision-making mechanism, as well as the sources of change and continuity. This will be

followed by first, a general exploration of the dynamics of the sub-system/region in which Turkey is located, and then more in-depth analyses of Turkey's particular relations with different geographical regions, such as Europe, Eurasia, the United States, and the Middle East. Some experts from the Turkish foreign ministry, as well as public figures with experience and expertise on relevant issues, will provide guest lectures. *Credit units: 3 ECTS Credit Units: 8.*

IR 594 International Law and Organizations

International relations have legal and political sides. This comprehensive study will firstly analyze the normative side of international relations by describing and explaining the basic legal concepts of international law. At the later stage, it will focus on to the role of international organizations e.g. UN, Council of Europe, EU etc. to the contemporary world order under the effect of international law and politics. *Credit units: 3 ECTS Credit Units: 8.*

IR 599 Master's Thesis

Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

IR 614 New Directions in Security Studies

This course is designed as a post-graduate level introduction to new directions in the study of security. Since the late 1980s, there has been remarkable change in the way security is conceived, studied and practiced. The academic field of Security Studies has been the subject of intense academic, intellectual and political debate during this period. The main aim of this course is to introduce students to main debates in Security Studies by tracing the development of Security Studies from its Cold War past to its post-Cold War present and opening up alternative ways of thinking about the future. *Credit units: 3 ECTS Credit Units: 8.*

IR 621 Current Debates in International Relations Theory

This course is designed as a post-graduate level introduction to current debates in International Relations theory. The content and nature of International Relations theory is by no means fixed. Indeed, International Relations theory has been the subject of intense academic, intellectual and political debate. The main aim of this course is to introduce students to some of the major debates in International Relations theory. The course also covers epistemological, ontological and methodological debates in IR. Specifically, the course aims to generate familiarity with the language of social research, the uses of theory and meanings of methodology in IR, ethical and political issues involved in the research process. *Credit units: 4 ECTS Credit Units: 12.*

IR 625 Advanced Diplomatic History

The course is designed to help prepare students for the diplomatic history qualifying examination by introducing them to current literature and comparative history. *Credit units: 4 ECTS Credit Units: 12. Aut (O. İşçi)*

IR 629 Global Political Economy

This course is designed to explore questions relating to theory and process of increasingly globalizing international political economy. The purposes of the course are to expose students to major changes in the international political economy; to explore some of the theoretical debates over these changes; and, to examine the multitude of adjustment strategies states adopt to cope with changing structure of comparative advantage. Particular emphasis is placed upon the position of the middle-income developing countries (especially Turkey) within the global market structure. *Credit units: 3 ECTS Credit Units: 8.*

IR 649 The Soviet Union and The Second World War

As a consequence of the Second World War, the Soviet Union became one of the preeminent powers in the world, imposed its ideology and ethos upon an array of other countries, and parlayed its victory over fascism into a new claim of legitimacy. This seminar will explore the origins, course and character, and impact of the Second World War, with especial attention paid to the role of the USSR during the world's greatest conflict. The course will be organized topically, within a more or less chronological framework. *Credit units: 3 ECTS Credit Units: 8.*

IR 652 New World Orders 1945-2000

This course covers efforts made to create a new international order since the Second World War. It begins with the moment of co-operation in 1944-45, which saw the creation of the IMF and the World Bank, the UN, and a division of the world into spheres of interest. The next world order was the NATO system that emerged in the later 1940's following the clash over Germany and the Marshall Plan: OECD, Federal Germany, GATT, the beginnings of the European Union. This brought vast prosperity to the western world, but also brought tensions in what became known (unwisely) as 'the Third World'. In the Sixties, a period of confusion began, as the blocs split apart (Sino-Soviet dispute, Euro-American clashes) and in the Seventies the entire western world was threatened by the great inflation that started in 1971. The international financiers' attempts to control this will be examined. By 1980 the USSR had taken advantage of the troubles to push ahead, notably in Afghanistan. The failure of the West to collapse at that time, and the reversion of China to a freer economy in association with the USA caused a re-think, and the emergence of M.S. Gorbachev. In 1991 came a new world order altogether, in which History was supposed to come to an End and free market principles plus democracy were supposed to spread world wide. That new world order lasted roughly until 2000, when doubts and dissension once more set in. *Credit units: 3 ECTS Credit Units: 8. Spr (N. Stone)*

IR 670 Topics in the History of Communism 1847-1953
This course takes the outstanding moments and writers in the history of Communism. It starts of course with Marx and the Communist Manifesto, and proceeds through the construction of Capital and the International to a discussion of the emergence of socialism especially in France and Germany. It moves on to a consideration of Lenin's adaptation of Marx to fit the world of Imperialism, and the position of large semi-capitalist states such as Russia (and later China). The success of the Bolsheviks in Russia alone is discussed, and then the emergence of the USSR as a super-power, especially with the Second World War. The course ends with the death of Stalin in 1953. *Credit units: 3 ECTS Credit Units: 8.*

IR 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Staff)

IR 5100 Introduction to Security Studies
This course offers an introduction to the study of security. It traces the evolution of security studies from the study of war and strategy to concerns with individual, societal and global security. *Credit units: 3 ECTS Credit Units: 8. Aut (H. P. Bilgin)*

IR 5104 Issues in Turkish Foreign Policy
This course is not a historical account of Turkish Foreign Policy. Nor does it consist of a chronological description of the events and issues. It is designed to acquaint the candidates with conceptual and institutional frameworks useful to explain and understand Turkish foreign and security policy and the essence of Turkey's diplomatic-strategic conduct. Nevertheless, as a prerequisite of this course, candidates are required to have a basic preliminary knowledge about the history of Turkey's foreign relations. The approach of the course is critical as well as analytical. This means that the cause should underline not only the achievements, but also failures, contradictions, and deficiencies of Turkey's foreign policy. *Credit units: 3 ECTS Credit Units: 8. Aut (İ. Ö. Özdamar)*

IR 5105 Issues in International Political Economy
This graduate seminar course explores a series of issues central to the field of International Political Economy (IPE). While the exact focus is contingent on the contemporaneous disciplinary and policy agendas, as well as on the research interests of the participants, the course is centrally concerned with integrating theory and practice in a thorough and critical engagement with both IPE as an academic field of study, and various substantive aspects of the current world political economy. *Credit units: 3 ECTS Credit Units: 8.*

IR 5110 Topics in Modern European History 1870-1970
This course will take the most significant episodes of modern European (and in part world) history with a view to encouraging students' interpretive abilities. The topics will be Imperialism around 1890, the "Great Depression" of the later nineteenth century and what it meant, the spread of parliamentary constitutionalism, the rise of Socialism and of a new Political Catholicism. Minority nationalism will be examined, and the rise of Fascism and Communism. The course ends with the attempt to create a new Europe after 1947, and the involvement of the USA. *Credit units: 3 ECTS Credit Units: 8. Aut (N. Stone)*

IR 5112 Conflicts in the Middle East
This course offers an advanced conceptual and empirical analysis of contemporary Middle East politics through an exploration of its main conflicts and developments since the end of World War II. From the Palestinian question, to peace and war in the region, and the "Arab Spring"; students will engage in critical evaluation of the roots of key Middle East conflicts, the role that social movements and media play in the regions' trends and developments, and the involvement of superpower rivalry and impact on international politics. The course aims to provide students with an advanced understanding of key Middle East events and theories, and enhances their skill in interpreting political developments in the region. The course enables students to critically evaluate leading scholarship in the field of Middle East politics and international relations, and encourages students to develop their own positions on contemporary issues of the Middle East based on critical assessment of existing literature and empirical evidence. *Credit units: 3 ECTS Credit Units: 8.*

IR 5114 Religion and IR Theories
The proposed course aims at increasing our understanding of how religion shapes international relations. The main topic of the course is the integration of religious subject matter into conceptual frameworks ranging from realism to liberalism and constructivism. The main question is how does religion translate into international politics. Hence, theoretical and empirical views are blended together. The subject matter covers whether religious actors can act as strategic actors, whether religions can have variable impact upon war and the likelihood of war in addition to analyses of international politics through the prism of religion and the interaction between secular and religious forces at global level. *Credit units: 3 ECTS Credit Units: 8.*

DEPARTMENT OF POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

H. P. Bilgin (Chair), J. J. Alexander, İ. İ. Aytürk, H. T. Bölükbaşı, B. Burçak, A. Çınar, Ç. E. Çuhadar, F. T. Erman, N. Fehim Kennedy, I. N. Grigoriadis, J. Gürzumar, B. Helvacıoğlu, M. Heper, B. İnce, A. Just, D. Just, M. N. Karakayalı, S. Özçürümez Bölükbaşı, Z. Sarıgil, Z. Tandoğan, M. Uğur Çınar.

Part-time: S. Akyüz, O. Bilginer, S. K. Çınar, G. Çorbacıoğlu Aksak, M. B. Kuymulu, A. U. Parmaksız, H. İ. Rösch, Ö. Sefer, S. Yaraş.

Political science is one of the oldest social science disciplines. It examines how people in societies organized into states live together and resolve or fail to resolve their conflicts. Politics is the art of influencing others as well as arriving at consensus. It is a widespread phenomenon that one encounters at all levels of society (family, school, government, and the like) as well as between states.

The discipline of political science which studies systematically the recurring patterns of events in politics, is divided into five subdisciplines: political theory, comparative politics, international relations, national (Turkish) politics and public administration. The undergraduate and graduate programs offered by the Department aim to provide a balanced education and training in these five subdisciplines. Through elective courses students can, to a certain degree, specialize in preferred areas.

UNDERGRADUATE PROGRAM

The Department offers an education in political science with opportunities for a broad and balanced undergraduate study. Students pursue programs which, in addition to providing a firm grounding in the core subjects of the discipline, allow them to take courses in law, economics, management, and international relations as well as in computer sciences and humanities. Departmental courses are divided in a balanced fashion between the fields of political theory, comparative politics, and Turkish government and politics, cultural studies, and public administration.

The Department aims at providing the students with an education that would enhance their understanding of social artifacts. In addition to giving the basic requirements of a degree in political science, the program emphasizes the utility of learning social and political roles. The goal for a study in the Political Science and Public Administration major is to maximize students' capacity to analyze and interpret the significance and dynamics of political events and governmental processes. The purpose is not simply to reveal the significance of political events and issues. It is to equip the students with the knowledge in coping with political phenomena and problems. The aim is political education "in depth" for those students who have an interest in politics whatever their professional goals and eventual occupations are.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 121	Introduction to Computer Tools	3 / 6
ECON 107	Principles of Microeconomics	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
HCIV 101	History of Civilization I	3 / 6
POLS 101	Introduction to Political Science I	3 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
ECON 108	Principles of Macroeconomics	3 / 6
ENG 102	English and Composition II	3 / 6
HCIV 102	History of Civilization II	3 / 6

POLS 104	Introduction to Political Science II	3 / 6
PSYC 102	Introduction to Social Psychology	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
LAW 103	Constitutional Law I	3 / 5
PHIL 243	Social and Political Philosophy I	6 / 12
SOC 101	Introduction to Sociology	3 / 6
	Basic Law Elective	3 / 6

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
LAW 104	Constitutional Law II	3 / 5
MATH 264	Statistics for Social Sciences	3 / 6
PHIL 244	Social and Political Philosophy II	6 / 12
POLS 201	Fundamentals of Social Research	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
IR 101	Introduction to World Politics	3 / 6
LAW 315	Administrative Law	3 / 6
POLS 303	Comparative Politics I	3 / 6
POLS 305	Turkish Political Development	3 / 6
	Unrestricted I- Elective	3 / 6

Spring Semester		Credits / ECTS Credits
POLS 304	Comparative Politics II	3 / 6
POLS 306	Contemporary Turkish Politics	3 / 6
	Restricted Elective	3 / 6
	Unrestricted I- Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
POLS 399	Summer Training	- / 6
	Restricted Elective	3 / 6
	Transdisciplinary Senior Project	6 / 12
	Unrestricted I- Elective	3 / 6
	Unrestricted II- Elective	3 / 6

Spring Semester		Credits / ECTS Credits
POLS 465	Governance and Public Policy	3 / 6
	Restricted Elective	3 / 6
	Unrestricted I- Electives (2)	6 / 12
	Unrestricted II- Elective	3 / 6

RESTRICTED ELECTIVES

POLS 204	Political Sociology	3 / 6
POLS 215	History of the Middle East	3 / 6
POLS 229	Turkish Political History I	3 / 6
POLS 230	Turkish Political History II	3 / 6
POLS 238	Negotiation and Mediation in Politics	3 / 6
POLS 240	Social Transformation in Turkey	3 / 6
POLS 309	Turkish Political Thought I	3 / 6
POLS 321	Globalization and Nationalism	3 / 6
POLS 323	Political Anthropology	3 / 6
POLS 324	Research Methods	3 / 6

POLS 326	Introduction to Political Economy	3 / 6
POLS 327	State and Society in the Mediterranean	3 / 6
POLS 330	European Society and Culture	3 / 6
POLS 331	State and Society in Israel	3 / 6
POLS 334	Turkish Political Thought II	3 / 6
POLS 338	Cosmopolis: From the Roman to the Ottoman and British Empires	3 / 6
POLS 343	Social Theory: Past and Present	3 / 6
POLS 344	Turkish Nationalism :Politics and Ideology	3 / 6
POLS 346	Ethnographic Research and Politics	3 / 6
POLS 347	Liberty and Liberalism	3 / 6
POLS 353	Foundations of Modern Political Theory	3 / 6
POLS 355	Issues of Urbanization	3 / 6
POLS 357	Ethics and Morality in Daily Life	3 / 6
POLS 404	Political Parties and Interest Groups	3 / 6
POLS 407	Contemporary Political Ideologies	3 / 6
POLS 410	Policy Analysis	3 / 6
POLS 411	Gender and Politics	3 / 6
POLS 420	Theory and Modern Society	3 / 6
POLS 421	Issues in Modern Political Thought	3 / 6
POLS 426	Civil Society in Turkey	3 / 6
POLS 431	Politics and Society in Turkey	3 / 6
POLS 433	Politics of European Integration	3 / 6
POLS 437	Politics and Literature	3 / 6
POLS 449	Political Concepts	3 / 6
POLS 452	State Society and Citizenship in Turkey	3 / 6
POLS 458	Nationalism and Citizenship in Comparative Perspective	3 / 6
POLS 459	Politics of Cities and Citizenship	3 / 6
POLS 464	Interculturalism and Europe	3 / 6
POLS 466	Issues in Political Theory	3 / 6
POLS 467	Conflict, Violence, and Peace	3 / 6
POLS 469	Regional Security in the Middle East	3 / 6
POLS 473	Democratization Process in Turkey	3 / 6
POLS 475	European Union: The Challenges	3 / 6
POLS 480	European Politics	3 / 6
POLS 483	Liberalism and Socialism: Past and Present	3 / 6
POLS 484	Life, Nature and Politics	3 / 6
POLS 486	Issues in Comparative Politics	3 / 6
POLS 488	Film and Politics	3 / 6
POLS 490	Democracy, Development and Human Rights	3 / 6
POLS 491	Issues of Urbanization	3 / 6
POLS 495	International Political Economy	3 / 6
POLS 496	Aesthetics and Politics	3 / 6
POLS 497	Local and Global in Cities	3 / 6
POLS 498	Individual, Society and Violence	3 / 6
POLS 4204	Politics of The Balkans	3 / 6
POLS 4526	Selected Topics in Public Policy	3 / 6
POLS 4536	Turkish Politics in Comparative Perspective	3 / 6
POLS 4544	Theories of State	3 / 6
POLS 5437	Politics and Literature	3 / 8

Language courses satisfy elective requirements for the third and fourth year electives, but only one language course per semester is allowed.

MINOR PROGRAM

Politics is essentially a decision-making process which distributes status, power and resources at all levels of human society, ranging from the family to the international system. Being one of the oldest social science disciplines, political science examines perennial questions such as how those decisions are made, who makes them, or who benefits from them.

The aim of the Minor Program in Political Science is to acquaint Bilkent students from any background

with the academic study of politics. Students enrolled in any one of the Bilkent faculties might apply, provided that they fulfill the application criteria. The minor program is composed of six courses in total and four of those are compulsory. Depending on their major program, students are expected to take either one of Introduction to Political Science I or Social Transformation in Turkey. Other compulsory courses are Comparative Politics I, Turkish Political Development and Contemporary Turkish Politics. Minor program students are allowed to pick and choose any two Political Science courses as electives and they would be well-advised to concentrate in one of the sub-fields.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
POLS 303	Comparative Politics I	3 / 6
POLS 305	Turkish Political Development	3 / 6
POLS 306	Contemporary Turkish Politics	3 / 6
	Electives (2)	6 / 12
	POLS 101 or POLS 104	3 / 6

GRADUATE PROGRAM

Master of Arts in Political Science

MA degree in Political Science and Public Administration is designed to provide students with a solid background in the study of Political Science. Applicants would be expected to have an undergraduate degree in Political Science or cognate fields. The program is designed to allow students a smooth transition into the Department's Ph.D. program, if the student so wishes. Otherwise, the program offers an excellent basis in the study of Political Science and research training. A candidate for the M.A. degree must:

1. Successfully complete the core curriculum for M.A. Degree in Political Science and Public Administration. There are two elective pools in the core curriculum. These are **Specialization Electives** (POLS 601 Seminar in Turkish Politics, POLS 602 Seminar in Comparative Politics, POLS 606 Seminar in Political Theory, POLS 612 Seminar in Social Theory and Cultural Studies) and **Research Methods Electives** (GE 510 Fundamentals of Social Research Design, GE 511 Philosophy of Social Inquiry, GE 512 Quantitative Data Analysis for the Social Sciences, GE 513 Qualitative Research Methods). One out of four Specialization Elective courses and one out of four Research Methods Elective courses must be satisfied. Other core courses are Research Methods and Academic Publication Ethics (GE 500), Academic Practices (GE 590), and the Master's Thesis (POLS 599).
2. Successfully complete the course requirements for the M.A. degree by earning at least 24 credits in total. In addition to the core courses, students will take three restricted electives and three unrestricted elective courses with at least 3 credits.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
POLS 599	Master's Thesis	- / 56
	Research Methods Elective	3 / 8
	Restricted Electives (3)	9 / 24
	Specialization Elective	3 / 8
	Unrestricted Electives (3)	9 / 24

Doctor of Philosophy in Political Science

The Ph.D. Program in Political Science and Public Administration is designed to provide Ph.D. candidates with theoretical background, analytical abilities, and empirical research skills in accordance with international academic standards in four major fields (Turkish Politics, Comparative Politics, Political Theory, Social Theory and Cultural Studies). Students are admitted to the program by written application and after an evaluation by the Graduate Admissions Committee of the Department. Also refer to the "Graduate Admissions" section in the introduction of this catalogue for the general graduate admission requirements.

A candidate for the Ph.D. degree must:

1. Successfully complete the core curriculum for Ph.D. Degree in Political Science. There are two elective pools in the core curriculum. These are **Specialization Electives** (POLS 601 Seminar in Turkish Politics, POLS 602 Seminar in Comparative Politics, POLS 606 Seminar in Political Theory, POLS 612 Seminar in Social Theory and Cultural Studies) and **Research Methods Electives** (GE 510 Fundamentals of Social Research Design, GE 511 Philosophy of Social Inquiry, GE 512 Quantitative Data Analysis for the Social Sciences, GE 513 Qualitative Research Methods). Three out of four of the Specialization Elective courses and two out of four of the Research Methods Elective courses must be satisfied. Other core courses are Research Methods and Academic Publication Ethics (GE 500), Academic Practices (GE 690) and the Ph.D. Dissertation (POLS 699).
2. Successfully complete the course requirements for the Ph.D. degree by earning at least 24 credits in total including two restricted electives and one unrestricted elective courses with at least 3 credits.
3. Show competence in the written and oral comprehensive examinations after completing all credit requirements and the seminar course in the curriculum. Students with a Master's degree must take the comprehensive exam within the first five semesters. Students without a Master's degree must take the comprehensive exam within the first seven semesters.
4. Submit a detailed Ph.D. dissertation proposal within six months after successfully passing their comprehensive examinations.
5. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended.
6. Submit and successfully defend a Ph.D. dissertation that represents an original contribution to knowledge in the field.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
POLS 699	Ph.D. Dissertation	- / 160
	Research Methods Electives (2)	6 / 16
	Restricted Electives (2)	6 / 16
	Specialization Electives (3)	9 / 24
	Unrestricted Elective	3 / 8

COURSE DESCRIPTIONS

POLS 101 Introduction to Political Science I

This course explains the nature of political science and its basic concepts including power, legitimacy, authority and choice. The development of modern nation-state; fundamental of the classical and contemporary ideologies; policy-making role of the state; relationship between the state and the citizen; democratic and non-democratic

governments and constitutional design of government are also covered. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. İ. Aytürk, O. Bilginer, B. Helvacıoğlu, B. İnce, M. Uğur Çınar) Spr (J. J. Alexander, O. Bilginer, B. Helvacıoğlu)*

POLS 104 Introduction to Political Science II
This second part of the course explores the major political institutions and processes. Elections and participation; the role of political parties and interest groups in a democratic polity; parliamentary structures; presidential and parliamentary systems of government; bureaucracy; courts and international organizations are analyzed. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Çınar, Z. Tandoğan) Spr (O. Bilginer, S. K. Çınar, B. İnce, A. U. Parmaksız, Z. Tandoğan)*

POLS 201 Fundamentals of Social Research
Introduction to philosophical bases and goals of social research. The logic underlying a scientific analysis. The problems and considerations arising in the selection and formulation of a research question. *Credit units: 3 ECTS Credit Units: 6. Aut (M. N. Karakayalı, Z. Tandoğan) Spr (Ç. E. Çuhadar, M. N. Karakayalı, Z. Tandoğan)*

POLS 204 Political Sociology
The basic concepts of political sociology will be introduced and discussed with a specific emphasis on Turkey. The major aim of the course is, then, to provide a critical understanding of political organization of societies in the light of basic sociological knowledge. *Credit units: 3 ECTS Credit Units: 6.*

POLS 215 History of the Middle East
A review of the central historical and political processes, which have taken place in the Middle East over the past two centuries, particularly the interaction between internal processes and the effects of interactions between societies in the Middle East and "The West". The economic, political and cultural effects of "The West" on the region, such as the impact of orientalism, imperialism, nationalism and the rise of the territorial state following World War I, the revolutionary regimes, the economic and political impact of oil resources, democracy in the Middle East and the rise of Islamic revolution and Islamic movements. *Credit units: 3 ECTS Credit Units: 6.*

POLS 229 Turkish Political History I
This course is a survey of Ottoman/Turkish political history from its late Ottoman roots, until the foundation of the Republic of Turkey in 1923.The course aims not only to provide students with an analysis of late Ottoman/Turkish socio-political concepts, events and institutions (with an emphasis on continuity and change) but also to teach the necessary analytical tools required to assess historical phenomena. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Burçak)*

POLS 230 Turkish Political History II
This course is a survey of Turkish political history between1923-1990, which focuses on the main themes, people, events, and institutions in modern Turkish history aiming not only to provide students with the necessary information regarding Turkish politics but also with the analytical tools needed to asses historical phenomena. *Credit units: 3 ECTS Credit Units: 6.*

POLS 238 Negotiation and Mediation in Politics
This course focuses on both the theory and practice of negotiation and mediation concerning legal and political conflicts. The course covers a wide range of issues concerning negotiations including the different theories of bargaining, different outcomes of negotiations, processes of negotiation, psychological dynamics affecting negotiations, effective communication strategies, the role of language, culture, and power in negotiations, and the role of third parties in negotiations. An important part of the class is devoted to teaching the applied negotiation and mediation skills to students. Towards this end the students will carry out negotiation simulations and role plays related to various legal and political negotiations. In addition to the role plays and simulations, the course will also discuss several negotiation cases in detail including the negotiations over the Turkish Constitution, Cyprus, and Jerusalem. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. E. Çuhadar)*

POLS 240 Social Transformation in Turkey
This course aims at providing an insight into the social and cultural aspects of social transformation in Turkey. The transformation of spaces, divisions of labour, social stratification, life-styles and cultural values are explained through sociological and anthropological studies carried out in Turkey since the 1960s. *Credit units: 3 ECTS Credit Units: 6. Spr (N. Fehim Kennedy)*

POLS 303 Comparative Politics I
Historical and contemporary political developments in the USA, UK, France, and Germany. *Credit units: 3 ECTS Credit Units: 6. Aut (H. T. Bölükbaşı, S. Özçürümez Bölükbaşı, M. Uğur Çınar) Spr (S. Özçürümez Bölükbaşı)*

POLS 304 Comparative Politics II
Historical and contemporary political developments in Russia and her neighboring countries (the Commonwealth of Independent States), Eastern Europe, and the Peoples Republic of China. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Just) Spr (A. Just)*

POLS 305 Turkish Political Development
The development of the political systems from the Ottoman period to the present with special emphasis on the multi-party period. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Akyüz, İ. İ. Aytürk, Z. Sarıgil) Spr (S. Akyüz, İ. İ. Aytürk)*

POLS 306 Contemporary Turkish Politics
State, Politics and society in contemporary Turkey, from a theoretical perspective with special emphasis on problems of and prospects for democracy. *Credit units: 3 ECTS Credit Units: 6. Aut (Z. Sarıgil) Spr (S. Akyüz, M. Heper, Z. Sarıgil)*

POLS 309 Turkish Political Thought I
This course is a survey of political/intellectual trends in Ottoman-Turkish history. The course focuses on the late Ottoman period until the establishment of the Turkish Republic, focusing on an analysis of political/intellectual trends and their main ideologues with an emphasis on continuity and change through careful analysis of not only secondary but also primary sources. *Credit units: 3 ECTS Credit Units: 6.*

POLS 321 Globalization and Nationalism
Examination of the emergence and building of nations and nationalist movements and exploration of the role of nationalism and nation-building in the contemporary world. Analysis of the origin and transformation of globalization with special attention to its interactions with capitalism, democracy, and anti-globalization movements. *Credit units: 3 ECTS Credit Units: 6.*

POLS 324 Research Methods
Quantitative and qualitative research methods. Formulating research problems and selecting appropriate research designs. General problems of measurement, data collection techniques, analysis and interpretation of social science data. *Credit units: 3 ECTS Credit Units: 6.*

POLS 326 Introduction to Political Economy
Political economy (PE) as the study of the interaction between economic and political institutions. The history and major concepts of PE. Sociopolitical and economic origins of development, dictatorship and democracy, inner workings of political systems including party systems, patron-client relationships, redistribution and different approaches to welfare state, the PE of income inequality, the PE of natural resource wealth, globalization and its effects. *Credit units: 3 ECTS Credit Units: 6.*

POLS 330 European Society and Culture
A general overview of the European society and culture through a critical discussion of its historical and contemporary political and cultural contexts. *Credit units: 3 ECTS Credit Units: 6.*

POLS 331 State and Society in Israel
The aim of this course is to acquaint students with the basic characteristics of the Israeli society and political system. The course covers the evolution of a self-governing Jewish community from its origins in Ottoman Palestine until the present day. It addresses issues such as the governmental system, political parties, foreign policy, military, nationalism, religion, citizenship and ethnicity from a comparative perspective. *Credit units: 3 ECTS Credit Units: 6.*

POLS 334 Turkish Political Thought II
This course is a survey of political/intellectual trends in modern Turkish History between 1923 and 1990 aiming not only to provide students with the necessary information concerning Turkish political thought but also at teaching them how to analyze discourse through a careful analysis of both primary and secondary sources. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Burçak)*

POLS 338 Cosmopolis: From the Roman to the Ottoman and British Empires
This course will offer an unusual conspectus of political thought in the last two thousand years. Most political theory has considered the nature of the *polis* or the nature of the modern state: there are very few great works, with perhaps the exception of Augustine's *City of God*, which deal with the problem of the nature of empire, or *cosmopolis*, that is, a universal city rather than a particular city. The course shall involve a study of the understandings of empire held by those who reflected on the Roman, Byzantine, Holy Roman, Ottoman, Austrian and British Empires. It will include not only writers who lived within empires, but those from the more obvious western canon of political thought who reflected on empires from without. Not only political thought will be studied, but also some literature and history. The question will be why so little theory was written about empires. *Credit units: 3 ECTS Credit Units: 6. Spr (J. J. Alexander)*

POLS 343 Social Theory: Past and Present
A select survey of classical and contemporary social theories. The aim of the course is to enable students to understand the changes in social theory as a response to transformations in modern societies, and to develop an awareness of diverse theoretical perspectives that emerged since late nineteenth century. After a review of classical macro and micro theories, the focus will be on contemporary perspectives such as systems theory, critical theory, feminism, structuralism and post-structuralism. *Credit units: 3 ECTS Credit Units: 6.*

POLS 346 Ethnographic Research and Politics
Different ethnographic approaches and techniques and different field research practices through the works of some prominent social anthropologists. A more experimental understanding of using ethnographic research in social sciences by practicing various ethnographic methods such as participant observation, ethnographic writing and research design. Practice through "individual ethnographic research projects" concerning their immediate social and political environment as well as debates on the ethics and politics of ethnographic research itself. *Credit units: 3 ECTS Credit Units: 6. Spr (Z. Tandoğan)*

POLS 353 Foundations of Modern Political Theory
This course historically focuses on Renaissance and Reformation period and particularly analyzes Republicanism, humanism, Lutherism, constitutionalism, and absolutism. It addresses such questions as how and why one defends liberty, under what circumstances the right to resist is justified, what are different responses to constitutionalism, and what is state sovereignty with and without absolutism. *Credit units: 3 ECTS Credit Units: 6.*

POLS 355 Issues of Urbanization
Rural-to-urban migration, accompained by squatter settlements in the physical realm, has been transforming many Asian, African and Latin American societies since the 1950s. This course investigates the social and political outcomes of “rapid urbanization” with a focus on squatter settlements and their residents. It covers theories that seek to explain social and economic transformation of “modernizing” societies and their urban development. It attempts to develop a critical approach to the “integration” question of migrants in their new environment, and while so doing, it focuses mainly on the Turkish case. Gender, ethnicity, religion and regional identity are addressed. *Credit units: 3 ECTS Credit Units: 6. Spr (F. T. Erman)*

POLS 357 Ethics and Morality in Daily Life
Ethics and morality are usually either confined to realm of religion or taught, learned and discussed in the area of philosophy. However, in today’s world, people are faced with ethical dilemmas and moral issues in many areas of daily life. The lines between “good” and “evil”, and between “right” and “wrong” are becoming increasingly blurred, yet individuals are generally left without a guide for solving these issues. There is therefore a need to discuss such issues as part of the education of young people in every field. This course aims to equip students who are not students of philosophy with some basic philosophical approaches to ethics and morality in simplified form, and to encourage them to apply these approaches to some practical issues in politics, science, law and other aspects of social life. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Fehim Kennedy)*

POLS 399 Summer Training
Course description: This course refers to the internship course which will need to be satisfied with an internship to be conducted during the summer of the end of the third year in the program. The course will be a non-credit (0 credit) course to be marked as S or U. *Credit units: None ECTS Credit Units: 6. Aut (İ. İ. Aytürk) Spr (İ. İ. Aytürk)*

POLS 404 Political Parties and Interest Groups
Analysis of origins, functions and organizational characteristics of political parties and interest groups in different political systems. Pluralism, patron-client relationship and corporatism. *Credit units: 3 ECTS Credit Units: 6.*

POLS 407 Contemporary Political Ideologies
This course will deal with ideologies as a unitary problem and also as a plural condition. *Credit units: 3 ECTS Credit Units: 6.*

POLS 410 Policy Analysis
This course is designed to help students learn the basic principles, logic and techniques of policy analysis. In addition, it addresses the relationship between policy analysis and policy-making cycles/process along with emerging professional and ethical issues. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

POLS 411 Gender and Politics
The aim of the course is to gain a deeper understanding of the ways in which gender and gender inequality shape institutions, policies, and political processes, as well as the way states affect gender relations, the political construction of gender, and political mobilization based on gender. Classical and contemporary views on gender and politics will be examined with a focus on three topics within the broad area of the relationship of gender and politics in some depths: women in politics; state social policy, and gender and ideology. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Fehim Kennedy)*

POLS 420 Theory and Modern Society
Elaborate examination of the efforts to address, evaluate, and extend questions posed by founding fathers of social theory (Durkheim, Marx, Weber, Nietzsche) with particular attention to current positions in social and political theory within the dynamic axis of modernity vs. post-modernity. This seminar-type course develops upon these debates with a special emphasis on social and intellectual contexts, conceptual frameworks and methods, and contributions to modern society and its theorizing. Works: Darwin, Spencer, Parsons, Dahrendorf, Saussure, Habermas, and Foucault. *Credit units: 3 ECTS Credit Units: 6.*

POLS 421 Issues in Modern Political Thought
The object of this course is to critically analyze the project of modernity through the prisms of democracy, industrialization, science and cultural representation. The first half of the course focuses on the idea of progress in modern thought and politics. In the second half, the main question under investigation is the political impact of the project of modernity on different social forces. *Credit units: 3 ECTS Credit Units: 6.*

POLS 426 Civil Society in Turkey
The course aims at studying the development of civil society in Turkey. Firstly, it focuses on the nation of civil society at the global level from a comparative and historical perspective, and then shifts the focus to the national level. Central to this is the distinction between civil society and state. The course introduces students to the characteristics and dynamics of present-day civil society in Turkey, and therefore deals with a number of case studies. Accordingly, media, labor unions, non-governmental organizations (associations, foundations), political parties, interest groups in contemporary Turkey are among the subjects of this course. *Credit units: 3 ECTS Credit Units: 6.*

POLS 431 Politics and Society in Turkey
This course explores the debates and controversies over modernization, westernization, nationalism and secularism as they become the main themes of the constitutive norms of the modern Turkish Republic. After briefly tracing the historical developments around these themes since the founding of the Republic, the course examines different dimensions of Turkish nationalism and its aspirations for a West-oriented modernity in various contexts of politics and daily life such as the use of public spaces, urban planning issues, differentiation of gender roles, or trends in popular culture. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Çınar)*

POLS 437 Politics and Literature
This course discusses literature as a social product, analyzing ways in which it represents reality, reflects on it, and reacts to it. Focusing on the modern period from the nineteenth century to the present, the course examines political aspects and potential of different literary paradigms from realism to postmodernism. We will inquire into the political aspirations of these paradigms, and will ask how these paradigms have functioned as modes of social critique and how they have imagined social and political alternatives. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Just)*

POLS 449 Political Concepts
This course aims to consider a range of fundamental concepts in political theory, not for the purpose of introduction, but for the purpose of reflection. These concepts will be democracy, justice, ideology, liberty, party, politics, power, public opinion, representation, revolution, rights, rule, state etc. The intention of the course will be an intensive study and discussion of writings on these concepts. The basic text will be "Political Innovation and Conceptual Change" eds. Ball, Farr and Hanson. *Credit units: 3 ECTS Credit Units: 6. Aut (J. J. Alexander)*

POLS 452 State Society and Citizenship in Turkey
The recent decades have witnessed the revival of the interest on citizenship issues worldwide. This course aims at analyzing the issue of citizenship in Turkey with respect to its relations with the state and society. The first part of the course will provide the students with theories on citizenship, how it emerged and developed, and various aspects of citizenship in the current literature. In the second part of the course, related with the contemporary debates on citizenship, namely identity politics, multiculturalism and constitutional citizenship, the Turkish experience will be analyzed. This part will consist of the historical background, the construction attempts, legal process and the current situation in Turkey. *Credit units: 3 ECTS Credit Units: 6. Spr (B. İnce)*

POLS 459 Politics of Cities and Citizenship
Citizenship through the lens of contemporary social and political impasses in world cities, building on the premise that there is no universal form of citizenship. Citizenship as something processual and negotiated, and mediated by concrete urban problematics of power and dissent, with special attention paid to contemporary urban politics in Turkey. *Credit units: 3 ECTS Credit Units: 6.*

POLS 464 Interculturalism and Europe
This course will cover the conceptual and practical aspects of interculturalism in Europe from an interdisciplinary perspective. It will focus on how cultural diversity is perceived and experienced by individuals (based upon anthropological studies) and the immigration policies and politics of the European Union since the end of Cold War. *Credit units: 3 ECTS Credit Units: 6. Aut (Z. Tandoğan)*

POLS 465 Governance and Public Policy
This course covers basic concepts, analytical tools, theoretical approaches and empirical information in studying public policy and governance in comparative perspective. It studies causal theories of policy variation and policy change across different countries and policy sectors. By drawing on a sample of policy areas, the course examines policy, politics and polity-level variables in phases of policy cycle. It traces emergence of 'governance' as distinctive mode of policymaking emphasizing sharing of competences among different public and private actors. It contextualizes policy variation and change by studying impact of domestic, regional and global interactions. *Credit units: 3 ECTS Credit Units: 6. Aut (H. T. Bölükbaşı) Spr (H. T. Bölükbaşı, M. Uğur Çınar)*

POLS 466 Issues in Political Theory
Since Plato the relationship between aesthetics and ethics has been insolvable. In political theory, also subject to controversy are "aestheticized reality", de-politization and postmodern representations. This course, at the outset, examines different connotations of aesthetics and its conceptual interdependence on ethics. In the second part it analyzes the impact of aesthetics on the moral and political distinctions between the good and evil. In the third part it reviews the relationship between aesthetics, ethics and different conceptualizations of politics. In each part in order to discuss possible implications of viewing "political realities" from aesthetical-ethical points of view, it offers some historical case studies on wars, Auschwitz, communist experimentations with reality, as well as the twenty first century episodes of suicide bombing, torture and the dismembering of human sensibilities. *Credit units: 3 ECTS Credit Units: 6.*

POLS 467 Conflict, Violence, and Peace
This is a seminar course that dwells on various theories of social and political conflict, violence, and peace. The course brings together different theoretical approaches developed in sociology, social psychology, cultural anthropology, and political science in addition to some classical texts in philosophy with regard to conflict, violence, and peace. Some of the issues covered are: the origins of social conflict, functions of conflict in a society, different types of social conflict, structure-agency debate with regard to conflict, escalation of conflict, psychological dynamics of social conflict and violence. The course will also examine different theoretical approaches that developed in various social science disciplines with regard to peace and reconciliation. *Credit units: 3 ECTS Credit Units: 6. Spr (Ç. E. Çuhadar)*

POLS 469 Regional Security in the Middle East
An advanced level introduction to regional security in Middle East. Key concepts and debates on regional security in Middle East. Familiarity with the key literature on regional security in the Middle East from multiple perspectives, and competency in discussing their strengths and weaknesses. *Credit units: 3 ECTS Credit Units: 6. Spr (H. P. Bilgin)*

POLS 473 Democratization Process in Turkey
This course deals with the constitutional and legal amendments in the last 20 years designed to improve the standards of democracy in Turkey. *Credit units: 3 ECTS Credit Units: 6. Spr (Z. Sarıgil)*

POLS 480 European Politics
The main aspects of politics in both Eastern and Western Europe. The political, economic and social developments in both sections of the Continent. The post-war histories of the two rival blocs (the eastern and the western). The principal political issues in contemporary European politics are the core concern of the course. One of the most important objective of the course is introducing a wider pan-European perspective into the political science discourse. *Credit units: 3 ECTS Credit Units: 6.*

POLS 484 Life, Nature and Politics
A survey of past and current approaches in the social sciences which try to understand social and political institutions by paying special attention to the fact that human beings are living entities that interact with nature. The focus will be on contemporary sociobiological research which tries to analyze language and communication, social hierarchies, gender relations, moral and religious values, and the formation of habits and customs by models borrowed from the life sciences. *Credit units: 3 ECTS Credit Units: 6.*

POLS 486 Issues in Comparative Politics
This module introduces students to advanced research in comparative politics. It centers around the following topics: politics and government, the state, democracy, authoritarian rule, the comparative approach, political culture, political communication, political economy, political participation, elections and voters, interest groups, political parties, constitutions and the legal framework, multilevel governance, legislatures, the political executive, public management and administration, and public policy. *Credit units: 3 ECTS Credit Units: 6.*

POLS 488 Film and Politics
This course examines film as an extension of politics and a medium of political engagement. Concentrating on the second half of the twentieth century, we will discuss the fictions and the realities of various historical events (e.g., Hiroshima, Cold War, Red Scare, decolonization, mass emigration, fall of communism, terrorism) as they were represented in the mainstream, the avant-garde and the documentary film. We will ask to what extent these representations served as propaganda, a form of protest and resistance, or an attempt to formulate political alternatives, and what political influence they were able to generate. *Credit units: 3 ECTS Credit Units: 6. Spr (D. Just)*

POLS 490 Democracy, Development and Human Rights
This course is designed to introduce students to the issues of democracy, development, and human rights from the perspective of comparative politics. We will discuss different conceptualizations, theories, and measurements of these phenomena, analyze the extent to which existing theories contradict or complement each other, and whether their policy prescriptions have been successful in the real world. While the course focuses on how democracy, development, and human rights relate to each other, we will also address the effects of domestic

and international institutions, natural resources, political culture, and globalization. The course is designed to provide a general understanding of the patterns and challenges to democracy, development, and human rights; however, we will also pay some attention to regional differences among Latin America, East Central Europe, Asia, and the Middle East. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Just)*

POLS 491 Issues of Urbanization
Rural-to-urban migration, accompanied by squatter settlements in the physical realm, has been transforming many Asian, African and Latin American societies since the 1950s. This course investigates the social and political outcomes of "rapid urbanization" with a focus on squatter settlements and their residents. It covers theories that seek to explain social and economic transformation of "modernizing" societies and their urban development. It attempts to develop a critical approach to the "integration" question of migrants in their new environment, and while so doing, it focuses mainly on the Turkish case. Gender, ethnicity, religion and regional identity are addressed. *Credit units: 3 ECTS Credit Units: 6. Aut (F. T. Erman)*

POLS 495 International Political Economy
Focusing on international political economy as inspired by both politics and economics, this course centers around the following topics: the neoclassical conception of an economy, new economic and political theories, national systems of political economy and the international trading, monetary and financial systems, multinationals corporations, economic and political development, and regional political and economic integration. *Credit units: 3 ECTS Credit Units: 6. Spr (H. T. Bölükbaşı)*

POLS 496 Aesthetics and Politics
Course exploring how changing conceptions of aesthetics and certain art movements intersect with such political ideas as conservatism, liberalism, Marxism, fascism, and the disappearance of the political from the eighteenth century to the present digital age. Aims to question what constitutes the political from the purview of such notions as aesthetic objects, tastes and experiences of reality. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Helvacıoğlu)*

POLS 497 Local and Global in Cities
This course explores the relationship between local dynamics and global developments in the context of cities. By doing so, it aims to reveal how today's cities are being transformed in the process of the interplay between local and global forces. It brings together research on the cities of both the global South and the North. *Credit units: 3 ECTS Credit Units: 6.*

POLS 498 Individual, Society and Violence
Comprehension of the power relations between institutions and between individuals by investigating the implicit violence which exist in everyday life and considering how far it stems from the individual and how far it is something forced upon the individual. Investigation of a number of philosophical, sociological and psychological studies which are now considered classics. Examination of how the findings of these studies are reflected in everyday life in the society we live. *Credit units: 3 ECTS Credit Units: 6. Spr (N. Fehim Kennedy)*

POLS 4204 Politics of The Balkans
Review of the evolution of politics and foreign policy relations of the Balkan states since 1945, taking Greece as its point of departure. Comprehensive overview of contemporary politics in the region, combining conceptual and empirical approaches, including bilateral diplomatic relations, political economy and the influence of external factors. Examination of modern Greece and the evolution of its relationship to Turkey and the Balkan states in the first part. Analysis of Southeast Europe through empirical and conceptual lenses in the second part. *Credit units: 3 ECTS Credit Units: 6.*

POLS 4526 Selected Topics in Public Policy
Concepts and theories as well as critical thinking in different forms of domestic security threats and related policies from a public policy perspective with a focus on Turkey. Analyses of the politics, determinant actors across policy-making issues/processes in the field of domestic/national security. *Credit units: 3 ECTS Credit Units: 6.*

POLS 4536 Turkish Politics in Comparative Perspective
Analysis of Turkish politics with a comparative lens, discussing Turkey along with other comparable countries. Study of topics such as Turkish political institutions, democracy, civil society, state-society relations, citizenship, national identity, and gender from a comparative angle. *Credit units: 3 ECTS Credit Units: 6. Spr (M. Uğur Çınar)*

POLS 4544 Theories of State
Theorizing the state is a perennial concern in social and political thought, with inquiries spanning normative theories to positive accounts of grounded states practices. This course focuses on recent theoretical work, and places it in dialogue with empirical social-scientific research on the everyday effects of states. Assuming that political facts and acts are always embedded in larger social contexts, mediated by gender, ethnicity, violence, kinship, and law, we ask how the state matters in daily life, how this shifts across social, political, and historical contexts, and how theory might account for this. *Credit units: 3 ECTS Credit Units: 6. Aut (J. W. Day)*

POLS 5437 Politics and Literature
This course discusses literature as a social product, analyzing ways in which it represents reality, reflects on it, and reacts to it. Focusing on the modern period from the nineteenth century to the present, the course examines political aspects of different literary paradigms from realism to postmodernism. We will inquire into the political potential of these paradigms and their political aspirations, and will ask how these paradigms have functioned as modes of social critique and how they have imagined social and political alternatives. *Credit units: 3 ECTS Credit Units: 8. Aut (D. Just)*

POLS 510 Policy Analysis
Basic principles, logic and techniques of policy analysis. Relationship between policy analysis and policy-making cycles/process along with emerging professional and ethical issues. *Credit units: 3 ECTS Credit Units: 8. Aut (Staff)*

POLS 526 Selected Topics in Public Policy
Concepts and theories as well as critical thinking in different forms of domestic security threats and related policies from a public policy perspective with a focus on Turkey. Analyses of the politics, determinant actors across policy-making issues/processes in the field of domestic/national security. *Credit units: 3 ECTS Credit Units: 8.*

POLS 536 Turkish Politics in Comparative Perspective
State-society relations in Turkey from a comparative perspective. *Credit units: 4 ECTS Credit Units: 8. Spr (M. Uğur Çınar)*

POLS 544 Theories of State
Nature and functions of the state. Liberal, Marxist, and fascist theories of the state. State in developing, industrial, and post-industrial societies. *Credit units: 3 ECTS Credit Units: 8. Aut (J. W. Day)*

POLS 565 European Politics
This course aims at providing the Ph.D. students with a basic understanding of European politics. The course will do so first, by analyzing the historical background of European politics from the Peace of Westphalia and onwards, with specific emphasis on the state-building process in Western Europe. Second, the course will focus on post-World War II developments in European politics, such as European integration. Third, the course will analyze the challenges in European politics today, specifically those posed by integrative and fragmentary forces. The course aims to provide a comparative analysis of European politics in a multi-disciplinary manner. *Credit units: 4 ECTS Credit Units: 8.*

POLS 568 Urban Politics
Brief introduction to urban politics at the global level, followed by Third World urbanization and urban politics in the Third World, with a focus on the Turkish case. Effects of mass migration, and hence rapid urbanization, on urban politics. Politics defined broadly as any attempt to grasp and exercise power in the context of unequal relationships. Inequalities in the city, including gender, ethnicity and class, and the role of migration in restructuring or challenging them in the urban context. *Credit units: 3 ECTS Credit Units: 8. Aut (F. T. Erman)*

POLS 569 Regional Security in the Middle East
An advanced level introduction to regional security in Middle East. Key concepts and debates on regional security in Middle East. Familiarity with the key literature on regional security in the Middle East from multiple perspectives, and competency in discussing their strengths and weaknesses. *Credit units: 3 ECTS Credit Units: 8. Spr (H. P. Bilgin)*

POLS 596 Aesthetics and Politics
Course exploring how changing conceptions of aesthetics and certain art movements intersect with such political ideas as conservatism, liberalism, Marxism, fascism, and the disappearance of the political from the eighteenth century to the present digital age. Aims to question what constitutes the political from the purview of such notions as aesthetic objects, tastes and experiences of reality. *Credit units: 3 ECTS Credit Units: 8. Aut (B. Helvacıoğlu)*

POLS 599 Master's Thesis
Credit units: None ECTS Credit Units: 24. Spr (Ç. E. Çuhadar)

POLS 601 Seminar in Turkish Politics
This is an introductory course on Turkish politics for the Ph.D. Program in Political Science. It covers such topics as political culture, including its antecedents, nationalism and politics, Islam and politics the dynamics of the political system with special reference to political parties and political leaders, the military and politics, and the consequent trial and tribulations of democracy in Turkey. *Credit units: 3 ECTS Credit Units: 8. Aut (M. Heper)*

POLS 602 Seminar in Comparative Politics
This seminar is designed to introduce students to the major theoretical and conceptual debates in the sub-field of comparative politics. The weekly readings are chosen to reflect the variety of topics and methodological approaches in comparative politics. *Credit units: 3 ECTS Credit Units: 8. Aut (S. Özçürümez Bölükbaşı)*

POLS 603 Advanced Academic English
In this course, students will advance in academic English as it relates to the field of political science. Academic and stimulating texts will serve as the foundation–both the stimulus and quality example–from which students will improve their knowledge and usage of English. Students will analyze the writing style and method of political science writers, write analytical essays of political science texts, lead discussions and deliver academic presentations. *Credit units: 3 ECTS Credit Units: 8.*

POLS 604 Democratization Process in Turkey
This course will deal with the processes of democratization and liberalization in Turkey particularly in the light of constitutional and legislative reforms adopted between 1993 and 1995. Attention will also be given to the impact of the EU membership prospective. *Credit units: 3 ECTS Credit Units: 8.*

POLS 605 The Public Sphere
This course takes the public sphere as the main field of politics where different political ideologies emerge, contending ideologies clash and power relations take shape. Originally developed by Jurgen Habermas, the notion "public sphere" has been extensively and critically debated by writers in relation to democracy, civil society, state-society relations, political participation and the place and function of political identities in relation to these. This course surveys this debate and focuses on the different ways in which the "public sphere" is understood and contextualized, particularly in relation to ethnic, racial and gender identities. *Credit units: 3 ECTS Credit Units: 8.*

POLS 606 Seminar in Political Theory
This course engages in a critical reading of a select number of contemporary thinkers from K. Marx in 19th to L. Irigaray 20th, and to S. Zizek in 21st century. The course starts with the most recent texts and moves backward in history. Although the questions posed each week revolve around the most pressing issues of the present political conjuncture, such controversial concepts as democracy, difference, representation and the subject are analyzed from within a broad range of perspectives. *Credit units: 3 ECTS Credit Units: 8. Spr (B. Helvacıoğlu)*

POLS 608 Politics, Culture, Nation and Gender
This course takes the realm of urban daily life as the locus of politics and investigates different dimensions of the making of national identities in relation to issues of gender, race, ethnicity, and class. The readings have been structured so as to explore the complexity of national identities and founding ideologies around several dimensions. First, they will address the ways in which national ideologies are constructed and propagated in relation to race, ethnicity, gender, class, religion or colonial relations, as one or several of these elements converge in the making and contestations of national ideologies in different contexts. Second, the course will simultaneously explore different mediums of representation in the making and contestation of national ideologies, ranging from popular music, novels, architecture, art, films and mass media to clothing, food and other daily practices. *Credit units: 3 ECTS Credit Units: 8. Spr (A. Çınar)*

POLS 609 Issues in Urban Studies
This course addresses the theoretical and methodological issues in studying the city as a socio-cultural entity, and it aims to reveal urban dynamics that shape the city and city spaces in a variety of contexts. Attention is paid to emerging social and spatial landscapes in our era of globalization. In the class such concepts and topics are explored as the global city, the city in modernity and post-modernity, urban ethnography, suburbanization, gentrification and ghettoization, gated communities, the privatization of urban space, and urban governance, as well as Third World urbanization, squatter formation, migrant enclaves, and local politics. The city is approached critically in terms of gender, ethnicity and class. *Credit units: 3 ECTS Credit Units: 8.*

POLS 610 Research Methods
The purpose of this course is to introduce you to the qualitative research methods in social sciences. Emphasis will be placed both on acquiring skills as a researcher and on learning to evaluate empirical work in political science. We will take up, in turn, basic concepts of qualitative research design and data collection. This is a seminar course and students will design their own research project in the light of the methods discussed in class sessions. *Credit units: 3 ECTS Credit Units: 8.*

POLS 612 Seminar in Social and Cultural Studies:
This course brings together concepts and perspectives from various fields of the human sciences such as sociology, psychoanalysis, anthropology and semiology. The focus will be on current analyses of how societies and cultures are formed and break down. Special attention will be paid to the problems and future of contemporary societies and cultures. *Credit units: 3 ECTS Credit Units: 8. Spr (M. N. Karakayalı)*

POLS 635 Politics of Turkish Modernization
This course will explore the main themes around which Turkish modernization have revolved throughout the 20th century. First, the course will focus on debates and controversies over modernization, Westernization, nationalism and secularism as they become the main themes of the constitutive norms of the modern Turkish Republic. After briefly tracing the historical developments around these themes that have shaped Turkish society and politics since the founding of the Republic, the rest of the course examines different dimensions of the institutionalization and the negotiation of Turkish nationalism and its aspirations for a West-oriented modernity in various contexts of politics and daily life. Mainly, such negotiations are traced in daily life contexts such as the

use of public spaces, urban planning issues, differentiation of gender roles, or trends in popular culture such as in music, political cartoons, films or television programs. *Credit units: 3 ECTS Credit Units: 8. Spr (İ. İ. Aytürk)*

POLS 639 The Ecology of Social Relations and Cultural Processes
This seminar type course aims to explore key concept and models in social theory. One major concern throughout the course will be compare and contrast the perspectives that were developed by social theorists since the nineteenth century with "ecological" approaches which propose that the forms that social relations and cultures take can only be intelligible by looking at how human agents interact with their natural and social environments. *Credit units: 3 ECTS Credit Units: 8.*

POLS 640 Issues in Political Psychology
Political Psychology is an interdisciplinary field which explores topics that lie at the intersection between politics and psychology. This is a seminar course that explores various topics in political psychology. The course focuses on various theories in political psychology and their application to domestic and international political processes. Some of these theories are concerned with elite behavior in politics; others try to explain mass political behavior. The topics that will be covered in the seminar include: political communication and media, social identity, authorianism, social dominance orientation, formation of belief systems and political attitudes, decision making and information processing, political leadership, inter-group conflict and cooperation, and collective violence. *Credit units: 3 ECTS Credit Units: 8.*

POLS 641 The Ultimate Sources of Politics
Political theory often considers the question of the most just or right form of politics. This course aims at analyzing the three theoretical foundations of any form of politics orginates with God; that politics orginates with those who are spirited, strong or powerful; and that it originates with the people. The course will consider them on its own terms: first, theocracy, then timocracy, and finally democracy. *Credit units: 3 ECTS Credit Units: 8.*

POLS 643 Issues in Political Theory
This is a higher level course which aims to extend political theory in terms of depth and breadth. In terms of depth, several major political works (highways) will be considered more reflectively and at more length than is usually possible elsewhere. And in terms of breadth, several rarely studied, little known or highly unconventional works (byways) which have contributed to political theory from odd angles, or what might be seen as cul-de-sac, will be studied. It is hoped that these two different approaches will give a better insight into the canons and canonical subjects of political theory than is possible in a more traditional course. *Credit units: 3 ECTS Credit Units: 8. Aut (J. J. Alexander)*

POLS 646 Politics of the Self
This course aims to provide an in-depth understanding of divergent perspectives in the social sciences on selfhood, with a particular focus on the challenges that individuals face in forming themselves as autonomous subjects in modern societies. Part of the course will be devoted to a historical and cross-cultural analysis of 'self practices' - i.e. socially transmitted activities through which individuals try to give a shape to their existence. These include a vast number of activities such as dietary regimes, bodily and cognitive exercises, hygienic techniques, methods of self-adornment, various forms of self-discipline and auto-critique, spiritual meditations, and so on. These practices show great variation across different societies and often play a critical role in shaping a person's relation to others and his/her society. Among the topics that will be discussed in the course are: the relationship between ethics and politics; identity politics in modern societies; the role of reflexivity in the formation and transformation of social structures; alternative types of subjectivity; individualism; and, the role of modern technologies in changing contemporary individuals' self-perception. The literature covered in the course will mainly consist of major contributions to social theory (e.g. Durkheim, Mauss, Simmel, Goffman, Adorno, Giddens, Archer, Butler, Latour, Foucault) but some attention will also be given to classical texts (e.g. Plato, Stoics, Kant, Nietzsche). *Credit units: 3 ECTS Credit Units: 8. Aut (M. N. Karakayalı)*

POLS 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Ç. E. Çuhadar)

POLS 5431 Politics and Society in Turkey
This course explores the debates and controversies over modernization, westernization, nationalism and secularism as they become the main themes of the constitutive norms of the modern Turkish Republic. After briefly tracing the historical developments around these themes since the founding of the Republic, the course examines different dimensions of Turkish nationalism and its aspirations for a West-oriented modernity in various contexts of politics and daily life such as the use of public spaces, urban planning issues, differentiation of gender roles, or trends in popular culture. *Credit units: 3 ECTS Credit Units: 8. Aut (A. Çınar)*

POLS 5467 Conflict, Violence, and Peace
This is a seminar course that dwells on various theories of social and political conflict, violence, and peace. The course brings together different theoretical approaches developed in sociology, social psychology, cultural anthropology, and political science in addition to some classical texts in philosophy with regard to conflict, violence, and peace. Some of the issues covered are: the origins of social conflict, functions of conflict in a society, different types of social conflict, structure-agency debate with regard to conflict, escalation of conflict, psychological dynamics of social conflict and violence. The course will also examine different theoretical

approaches that developed in various social science disciplines with regard to peace and reconciliation. *Credit units: 3 ECTS Credit Units: 8. Spr (Ç. E. Çuhadar)*

POLS 5486 Issues in Comparative Politics

This module introduces students to advanced research in comparative politics. It centers around the following topics: politics and government, the state, democracy, authoritarian rule, the comparative approach, political culture, political communication, political economy, political participation, elections and voters, interest groups, political parties, constitutions and the legal framework, multilevel governance, legislatures, the political executive, public management and administration, and public policy. *Credit units: 3 ECTS Credit Units: 8.*

POLS 5490 Democracy, Development, and Human Rights

This course is designed to introduce students to the issues of democracy, development, and human rights from the perspective of comparative politics. We will discuss different conceptualizations, theories, and measurements of these phenomena, analyze the extent to which existing theories contradict or complement each other, and whether their policy prescriptions have been successful in the real world. While the course focuses on how democracy, development, and human rights relate to each other, we will also address the effects of domestic and international institutions, natural resources, political culture, and globalization. The course is designed to provide a general understanding of the patterns and challenges to democracy, development, and human rights; however, we will also pay some attention to regional differences among Latin America, East Central Europe, Asia, and the Middle East. *Credit units: 3 ECTS Credit Units: 8. Aut (A. Just)*

DEPARTMENT OF PSYCHOLOGY

T. Toulopoulou (Chair), M. M. Adams, J. W. P. Allen, L. Al Shawaf, G. Baray, M. Besken, H. Boyacı, A. M. Clarke, J. Corbett, K. Doerschner, G. Günaydın, H. Ilgaz, M. Khatibi Tabatabaei, J. A. Munneke, E. Sakman, S. Salman Engin.

Part-time: Ö. Ataoğlu, M. Ermemiş, N. Öztan, H. İ. Rösch.

Psychology is the study of mind and behaviour. It explores the way in which humans (and sometimes animals) see, learn, remember, and think; as well as the way they behave among others. It also looks at the relationship between mind and brain physiology, and studies how all these faculties develop from conception and birth through to the end of life.

Psychology has a wide scope. Its subject matter ranges from biology of the brain and the nervous system, to social issues like what makes people behave the way they do in a group. Thus, it is widely accepted that psychology is a discipline of both natural and social science. There are five core areas of psychological science. These are biological, cognitive, social, developmental, and personality psychology. The undergraduate program offered by the department aims to provide a balanced education in all these areas as well as some more specialised areas offered as electives. It places importance on an active learning process with discussion-based classes and partly essay-based assessment.

The most important aspect of the program is its emphasis on scientific method and research. It is impossible to learn everything there is to know about such a vast area of scientific study. Thus it is more important to gain an understanding of the methods with which to study mind and behaviour. The main aim of the program therefore is to establish a good understanding of scientific method and analytic thinking as well as skills necessary to conduct research including data analysis and efficient use of computer software. In this capacity, students are required to take part in and conduct a range of research projects, which involve an increasing level of independence as the course progresses. In the final year students are required to complete an independent research project culminating in a senior thesis.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 123	Introduction to Computing and Programming	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 105	Introduction to Calculus I	4 / 7
PSYC 101	Introduction to Psychology I / Cognitive and Biological	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MATH 106	Introduction to Calculus II	4 / 7
MBG 110	Introduction to Modern Biology	3 / 6
PSYC 103	Introduction to Psychology II / Social and Developmental	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
HUM 111	Cultures Civilizations and Ideas I	3 / 6
PSYC 200	Cognitive Psychology	3 / 7
PSYC 203	Statistics I	3 / 6

PSYC 204	Research Methods I	3 / 6
PSYC 230	Social Psychology	3 / 6

Spring Semester Credits / ECTS Credits

GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6
PSYC 205	Statistics II	3 / 6
PSYC 206	Research Methods II	3 / 6
PSYC 220	Brain and Behaviour	3 / 6
PSYC 240	Developmental Psychology	3 / 6
	Elective	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

PSYC 310	Perception, Attention, and Action	3 / 6
PSYC 340	Learning, Remembering, and Thinking	3 / 6
PSYC 350	Cognitive and Social Development	3 / 6
PSYC 433	Abnormal Psychology	3 / 6
	Electives (2)	6 / 12

Spring Semester Credits / ECTS Credits

	Department Electives (3)	9 / 18
	Electives (2)	6 / 12

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

PSYC 399	Summer Training	- / 6
PSYC 498	Senior Project I	3 / 6
	Department Electives (2)	6 / 12
	Elective	3 / 6
	Restricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

PSYC 499	Senior Project II	3 / 6
	Department Electives (2)	6 / 12
	Elective	3 / 6
	Restricted Elective	3 / 6

DEPARTMENTAL ELECTIVE COURSES

PSYC 320	Cognitive Neuroscience	3 / 6
PSYC 330	Theory and Practice of Applied Social Psychology	3 / 6
PSYC 360	Individual Differences and Personality	3 / 6
PSYC 391	Directed Research in Psychology	3 / 6
PSYC 405	Introduction to FMRI	3 / 6
PSYC 410	Neuropsychology	3 / 6
PSYC 415	Cognitive Aging	3 / 6
PSYC 420	Selected Topics in Cognitive Psychology	3 / 6
PSYC 421	Selected Topics in Social Psychology	3 / 6
PSYC 422	Selected Topics in Developmental Psychology	3 / 6
PSYC 430	Clinical Psychology	3 / 6
PSYC 431	Psychological Testing and Measurement	3 / 6
PSYC 434	Child and Adolescent Psychopathology	3 / 6
PSYC 435	Industrial and Organisational Psychology	3 / 6
PSYC 437	Program Evaluation	3 / 6
PSYC 438	Interpersonal Relationships	3 / 6
PSYC 439	Visual Neuroscience	3 / 6
PSYC 482	Mind in Evolution	3 / 6
PSYC 483	Theory of Mind	3 / 6
PSYC 491	Introduction to Cognitive Psychology	3 / 6

ELECTIVE REQUIREMENTS

The undergraduate curriculum requires students to take a total of 16 elective courses. At least 7 (seven) of these must be chosen from the list of Psychology (PSYC) "elective courses" seen above. Not all of these courses may be offered in a given academic year, and new courses not mentioned here may be offered during the academic year. Available courses will be announced by the Department at the beginning of each academic year mainly in the "undergraduate" section of the psychology department website (www.psy.bilkent.edu.tr). Students have the sole responsibility to follow announcements made on the website and other media specified by the department.

At least 7 (seven) elective courses in the curriculum must be chosen from the list of "Elective".

At least 2 (two) elective courses in the curriculum must be chosen from the list of "Restricted Elective".

These lists may be changed during the academic year, which will be announced on the department website. Elective lists can also be followed under STARS Academic Units page.

MINOR PROGRAM

The minor Program in Psychology aims to provide the student with a general introduction to the main issues in the science of psychology. Demonstrating the way psychologists study mind and behaviour, the minor program will form the basis for further study in the field. The minor program student must take three fundamental courses in Psychology that require no specialized background. *Cognitive Psychology* studies the way people know: perception, memory and learning among its main focuses. *Social Psychology* is the study of mind and behaviour of the individual in a group setting: from families to workplace organisation, people spend a great deal of their lives in the presence of others. Finally, *Developmental Psychology* investigates the way people develop from birth to old age. In addition to these three courses, minor candidates are expected to attend three elective courses offered by the department. This is an opportunity for students to further deepen their understanding in a particular area, and experience first hand, contemporary research in psychological science.

Prerequisite Courses:

PSYC 100 Introduction to Psychology

CURRICULUM

Courses		Credits / ECTS Credits
PSYC 200	Cognitive Psychology	3 / 7
PSYC 230	Social Psychology	3 / 6
PSYC 240	Developmental Psychology	3 / 6
	Electives (3)	9 / 18

GRADUATE PROGRAM

Master of Arts in Psychology

The M.A. program in the Department of Psychology is designed to build a strong, interdisciplinary background in theory and research in the psychological sciences. The program focuses on cognitive, social, personality, and evolutionary psychology, as well as neuroscience. Graduate students are expected to participate in research activities upon entering the program. To support psychological research, the university has developed an infrastructure that includes the National Magnetic Resonance Research Center (UMRAM), along with state-of-the-art research laboratories equipped with observation rooms for testing children and adults, a genetic testing room, and testing rooms for psychophysical and behavioral experiments.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 512	Quantitative Data Analysis	3 / 8

GE 590	Academic Practices	- / 12
PSYC 591	Pro-Thesis Seminar I	- / 1
PSYC 599	M.A. Dissertation	- / 56
	Electives (2)	6 / 12
	Restricted Electives (5)	15 / 30

RESTRICTED ELECTIVES

GE 510	Fundamentals of Social Research Design	3 / 8
NSC 510	Sensory and Motor Systems Neuroscience	3 / 7.5
NSC 511	Cellular, Molecular and Developmental Neuroscience	3 / 7.5
NSC 512	Research Methods in Neuroscience	3 / 7.5
NSC 513	Behavioural Neuroscience	3 / 7.5
NSC 514	Affective Neuroscience	3 / 7.5
NSC 515	Computational and Numerical Methods in Neuroscience	3 / 7.5
NSC 516	Neurobiology of Aging	3 / 7.5
NSC 546	Computing for Neuroscience	3 / 7.5
NSC 612	Selected Topics in Neuroscience I	3 / 7.5
NSC 613	Selected Topics in Neuroscience II	3 / 7.5
NSC 670	Lab in Cellular, Molecular, and Developmental Neuroscience	3 / 7.5
NSC 671	Lab in Sensory and Motor Systems Neuroscience	3 / 7.5
PSYC 501	Advanced Cognitive Psychology	3 / 8
PSYC 502	Advanced Developmental Psychology	3 / 8
PSYC 510	Advanced Social Psychology	3 / 8
PSYC 515	Selected Topics in Psychology I	3 / 8
PSYC 520	Cognitive Neuroscience	3 / 8
PSYC 521	Principles of Functional Magnetic Resonance Imaging	3 / 8
PSYC 530	Advanced Research Methods and Statistics in Psychology I	3 / 8
PSYC 535	Meta-analysis	3 / 8
PSYC 575	Advanced Training in Psychological Research I	3 / 8
PSYC 630	Advanced Research Methods and Statistics in Psychology II	3 / 8
PSYC 673	Advanced Training in Psychological Research II	3 / 8

Doctor of Philosophy in Psychology

The Ph.D. program in the Department of Psychology is designed to build a strong, interdisciplinary background in theory and research in the psychological sciences. The programs focus on cognitive, social, personality, and evolutionary psychology, as well as neuroscience. Graduate students are expected to participate in research activities upon entering the program. To support psychological research, the university has developed an infrastructure that includes the National Magnetic Resonance Research Center (UMRAM), along with state-of-the-art research laboratories equipped with observation rooms for testing children and adults, a genetic testing room, and testing rooms for psychophysical and behavioral experiments.

Doctor of Philosophy in Psychology

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
PSYC 691	Pro-Thesis Seminar II	- / 1
PSYC 699	Ph.D.Dissertation	- / 160
	Electives (3)	9 / 18
	Restricted Electives (5)	15 / 30

Doctor of Philosophy in Psychology (After a Bachelor's Degree)

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 512	Quantitative Data Analysis	3 / 8
GE 690	Academic Practices	- / 24
PSYC 591	Pro-Thesis Seminar I	- / 1
PSYC 691	Pro-Thesis Seminar II	- / 1
PSYC 699	Ph.D.Dissertation	- / 160
	Electives (5)	15 / 30
	Restricted Electives (10)	30 / 60

RESTRICTED ELECTIVES

GE 510	Fundamentals of Social Research Design	3 / 8
NSC 510	Sensory and Motor Systems Neuroscience	3 / 7.5
NSC 511	Cellular, Molecular and Developmental Neuroscience	3 / 7.5
NSC 512	Research Methods in Neuroscience	3 / 7.5
NSC 513	Behavioural Neuroscience	3 / 7.5
NSC 514	Affective Neuroscience	3 / 7.5
NSC 515	Computational and Numerical Methods in Neuroscience	3 / 7.5
NSC 516	Neurobiology of Aging	3 / 7.5
NSC 546	Computing for Neuroscience	3 / 7.5
NSC 612	Selected Topics in Neuroscience I	3 / 7.5
NSC 613	Selected Topics in Neuroscience II	3 / 7.5
NSC 670	Lab in Cellular, Molecular, and Developmental Neuroscience	3 / 7.5
NSC 671	Lab in Sensory and Motor Systems Neuroscience	3 / 7.5
PSYC 501	Advanced Cognitive Psychology	3 / 8
PSYC 502	Advanced Developmental Psychology	3 / 8
PSYC 510	Advanced Social Psychology	3 / 8
PSYC 515	Selected Topics in Psychology I	3 / 8
PSYC 520	Cognitive Neuroscience	3 / 8
PSYC 521	Principles of Functional Magnetic Resonance Imaging	3 / 8
PSYC 530	Advanced Research Methods and Statistics in Psychology I	3 / 8
PSYC 535	Meta-analysis	3 / 8
PSYC 575	Advanced Training in Psychological Research I	3 / 8
PSYC 630	Advanced Research Methods and Statistics in Psychology II	3 / 8
PSYC 673	Advanced Training in Psychological Research II	3 / 8

COURSE DESCRIPTIONS

PSYC 100 Introduction to Psychology
This course is a general introduction to the main issues and findings in psychological science. It lays out the kinds of questions facing psychologists trying to study the mind and behaviour, and it covers some major methods of answering them. The course spans the major research fields of psychology, presenting major findings from biological, cognitive, social, developmental, and personality psychology. It also gives a brief introduction to mental disorders and clinical psychology. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Al Shawaf, J. Corbett, E. İnanç, J. A. Munneke, E. Sakman) Spr (E. İnanç, E. Sakman)*

PSYC 101 Introduction to Psychology I / Cognitive and Biological
This course is an in depth introduction to the theories, methods and findings of psychological science. The course focuses on the biological and cognitive aspects of behavior. Topics covered include the brain and nervous system, perception, leaning, thinking, memory, motivation and consciousness. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Toulopoulou) Spr (T. Toulopoulou)*

PSYC 102 Introduction to Social Psychology
This course is designed to acquaint the student with the nature and causes of individual behavior in social situations; to identify the factors that shape feelings, behavior and thought. The topics to be covered include: the research methods of social psychology, social perception, social cognition, attitudes, prejudice/discrimination,

interpersonal attraction, social influence, aggression, individual behavior in groups, and applications of social psychology in health, the legal system and the work setting (organizations). *Credit units: 3 ECTS Credit Units: 6. Aut (H. İ. Rösch, E. Sakman) Spr (J. Gürzumar, H. İ. Rösch, E. Sakman)*

PSYC 103 Introduction to Psychology II / Social and Developmental
This course is a continuation of Introduction to Psychological Science 1, PSYC 101. Topics covered in this course include, testing and intelligence, human development, personality, social psychology, abnormal psychology, treatment of psychological disorders and industrial/organizational psychology. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Öncüler Yayalar) Spr (J. W. P. Allen)*

PSYC 200 Cognitive Psychology
This course provides a comprehensive introduction the area of cognitive psychology. It lays out the emergence and importance of cognitive psychology as a field of scientific research. Issues and findings are presented in sensation and perception, learning, memory, problem solving, thinking and reasoning, and language. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: PSYC 100 or PSYC 103. Aut (M. Besken) Spr (J. Corbett)*

PSYC 203 Statistics I
The main concepts and methods of statistical analysis used by psychologists are covered. Topics include probability theory, graphic representations, and distributions, measures of central tendency, non-parametric statistics (including Chi Square) and t-test. Students will practice using these statistics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 123 and PSYC 103. Aut (S. Kadayıfçılar)*

PSYC 204 Research Methods I
This course introduces to the various ways in which psychologists study behavior. Issues include understanding research design, developing hypotheses and learning how to write a scientific paper. Students will also learn to use various bibliographic sources. Student will carry out a series of studies and write them up in American Psychological Association style. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 123 and PSYC 103. Aut (H. Ilgaz)*

PSYC 205 Statistics II
This is a continuation of Psychological Statistics 1, PSYC 203. Topics to be covered include analysis of variance(one-way and multivariate), correlation, regression and multiple regression. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 203. Spr (S. Kadayıfçılar)*

PSYC 206 Research Methods II
This course is a continuation of Research Methods 1 (PSYC 204). Students will be exposed to more complex designs such as factorial designs as well as correlational designs and quasi-experimental design. A number of studies will be conducted. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 203 and PSYC 204. Spr (A. M. Clarke)*

PSYC 220 Brain and Behaviour
As a basis for all mental activity and behaviour the nervous system and the brain in particular are quite important. This course introduces the structure and workings of the brain, its main characteristics, and its relationship to mind and behaviour. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (PSYC 100 or PSYC 103) and (MBG 101 or MBG 110). Aut (M. M. Adams) Spr (M. M. Adams)*

PSYC 230 Social Psychology
This course is a comprehensive introduction to the field of empirical research which examines the individual in a social setting. It covers areas such as social cognition, social perception, attitudes, conformity, and aggression. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or PSYC 103. Aut (G. Günaydın) Spr (G. Günaydın)*

PSYC 240 Developmental Psychology
The mind develops from conception right up to the end of life. In order to understand our nature and capabilities, it is important to know how the mind develops and what affects the course of this development. Main topics covered are Piaget's model of cognitive development and its critique, language acquisition, social interaction, attachment, parenting styles, and adolescent development. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or PSYC 103. Aut (J. W. P. Allen) Spr (H. Ilgaz)*

PSYC 310 Perception, Attention, and Action
The focus here is on perception, specifically visual perception. This is the part of cognitive psychology, where we know more than any other area about the brain's involvement. Thus, studying perception, and specifically vision, tells us much about the rest of our cognitive capacities. Main topics covered are physiological structure of vision, modularity, attentional influences, spatial vision, colour vision, perceptual learning, categorical perception, and motion perception. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 200 and PSYC 220. Aut (M. Khatibi Tabatabaei) Spr (M. Khatibi Tabatabaei)*

PSYC 320 Cognitive Neuroscience
This course covers the techniques and findings that have allowed us to know much more about what happens in our brains when we see, hear, think, talk, and even dream. Recent technological advances such as fMRI brain imaging techniques are covered and findings from studies using such techniques are discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 200 and PSYC 220. Spr (M. Khatibi Tabatabaei)*

PSYC 330 Theory and Practice of Applied Social Psychology
Social psychology has accumulated a wealth of knowledge as well as theories to predict human behaviour in social settings. This knowledge is fast becoming crucial in understanding social problems such as immigration, national identity, inter-group relations, and conflict resolution. The course introduces studies and applications of social psychological findings to social issues and problems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 230. Aut (G. Günaydın)*

PSYC 340 Learning, Remembering, and Thinking
A great deal of what we call cognition (knowing) is a direct result of our capacity to learn and remember. Scientists have long been interested to find out exactly how we learn, and what happens in our minds and brains when we do learn. Learning of course is not enough; we also need to remember what we have learned. How does memory work? What is the best way of remembering things we learn? How are memories processed before they become a part of our mental world? After remembering, we have to make use of those memories: we have to relate them with each other, see connections, and reach to conclusions. In other words, we have to think. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 200 and PSYC 220. Aut (M. Besken) Spr (M. Besken)*

PSYC 350 Cognitive and Social Development
This course elaborates on the previous year's developmental psychology course, providing a more in-depth analysis of problems and up-to-date findings in cognitive and social development. The object is to see the relationship between developmental processes and the adult mind. Main topics covered are development of logic and reasoning, memory, spatial cognition, perception, face recognition, prosocial behaviour, sociocultural approaches. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 240. Aut (H. Ilgaz) Spr (J. W. P. Allen)*

PSYC 360 Individual Differences and Personality
While, the rest of psychology studies the similarities between people, this area looks at what makes each individual distinct from others. It investigates areas such as intelligence, aptitude, personality traits, and development of a self concept, and tries to answer questions on why each individual turns out the way he/she does. One very important issue here is the famous nature-nurture debate: are we born like this or do we become what we are as we go through life? The course also looks at methods with which psychologists assess intelligence and personality. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 230 and PSYC 240. Aut (L. Al Shawaf) Spr (L. Al Shawaf)*

PSYC 391 Directed Research in Psychology
This course involves conducting an individual research project under the supervision of a faculty member. All phases of the research enterprise are covered including: a review of the literature, development of hypotheses, developing a methodology to test the hypotheses, conducting the research, analyzing the results, discussing the implications of their work and producing a 15-20 paper manuscript similar to one that would be submitted to a scholarly journal in American Psychological Association style. The course will be graded pass/fail. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or PSYC 103. Aut (M. Besken) Spr (M. Besken)*

PSYC 399 Summer Training
This course refers to the internship course which will need to be satisfied with an internship to be conducted in a relevant area during the summer at the end of the third year in the program. The course will be a non-credit (0 credit) course to be marked as S or U. *Credit units: None ECTS Credit Units: 6. Aut (S. Salman Engin) Spr (E. Sakman)*

PSYC 401 Senior Thesis I
This is a final year research project. Each student gets together with a supervisor, a member of academic staff whose research area is related to a topic of research he/she is interested in. Students spend a year to plan, design, conduct, analyse and write-up a research project. The role of the supervisor is minimal. The object is to acquire skills necessary to conduct an independent project. Students will have the opportunity to get together in tutorial groups with others and discuss common problems and difficulties and get instruction on these from a member of academic staff. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 301. Aut (L. Al Shawaf) Spr (L. Al Shawaf)*

PSYC 402 Senior Thesis II
This is a final year research project. Each student gets together with a supervisor, a member of academic staff whose research area is related to a topic of research he/she is interested in. Students spend a year to plan, design, conduct, analyse and write-up a research project. The role of the supervisor is minimal. The object is to acquire skills necessary to conduct an independent project. Students will have the opportunity to get together

in tutorial groups with others and discuss common problems and difficulties and get instruction on these from a member of academic staff. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 301 and PSYC 401. Aut (L. Al Shawaf) Spr (L. Al Shawaf)*

PSYC 405 Introduction to FMRI
This course covers the basic principles of Functional Magnetic Resonance Imaging (fMRI), including the physical principles of signal generation in MRI and the relation of neuronal activity with the blood-oxygen-level-dependent (BOLD) signal. The course emphasizes techniques to conduct experiments investigating the functional activity of the nervous system, and statistical analysis of the fMRI data. Weekly hands-on sessions are held using the in-campus MRI scanner. The objectives of the course are to gain a basic understanding of physical and biological concepts of fMRI; a basic knowledge of fMRI data collection and the operation of the scanner (through weekly hands-on sessions); a basic knowledge of fMRI experimental design. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 200 and PSYC 220 and PSYC 320.*

PSYC 410 Neuropsychology
This advanced course is a more in-depth study of the brain and the nervous system in relation to mind and behaviour. Specifically, here, disorders of the brain, lesions resulting from accidents and strokes, and the effects of these on mental capacity and behaviour are discussed. The implications of such findings are discussed particularly in relation to philosophical questions such as free-will and self determination. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 220.*

PSYC 420 Selected Topics in Cognitive Psychology
Members of academic staff cover a research topic that they are working on, presenting an in-depth, advanced understanding of the research problem, data that have been collected by the instructor or colleagues, and a discussion of these results in relation to the bigger questions. This course brings final year students up to date with a current research area and provides them an opportunity to continue academic study in this or other areas. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (PSYC 100 or PSYC 103) and PSYC 200 and PSYC 220.*

PSYC 421 Selected Topics in Social Psychology
Members of academic staff cover a research topic that they are working on, presenting an in-depth, advanced understanding of the research problem, data that have been collected by the instructor or colleagues, and a discussion of these results in relation to the bigger questions. This course brings final year students up to date with a current research area and provides them an opportunity to continue academic study in this or other areas. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (PSYC 100 or PSYC 103) and PSYC 230.*

PSYC 430 Clinical Psychology
The study of abnormal behaviour and mental disorder has led to techniques that have been developed by clinical psychologists to deal with such problems. This course provides an introduction to the most-well known application of psychology. It talks about how clinical psychology has developed ways of dealing with mental disorders and problems. In addition, it covers research and applications of a new, related field, health psychology which is related to psychological findings concerning a wider understanding of health than mental disorders. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 433. Aut (Ö. Ataoğlu) Spr (N. Öztan)*

PSYC 431 Psychological Testing and Measurement
This course is a training in techniques of psychological assessment in areas like intelligence testing and personality testing. Problems associated with “measuring” human mind and behaviour are discussed and methods in dealing with these covered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 202 or PSYC 205.*

PSYC 433 Abnormal Psychology
This course is about the study of mental disorders and problems. It covers the history of the understanding of mental health, and introduces the advances made. It provides an in-depth understanding of various disorders such as schizophrenia, depression, phobias, addiction, and sexual health. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 200 and PSYC 230 and PSYC 240. Aut (N. Öztan) Spr (N. Öztan)*

PSYC 434 Child and Adolescent Psychopathology
This course provides an overview of psychopathology in childhood through adolescence from various perspectives. DSM descriptions, etiology, phenomenology and diagnosis for major disorders are covered. Diagnoses include disruptive behavior disorders, anxiety disorders, affective disorders, attention disorders and psychotic disorders. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 433. Aut (Staff)*

PSYC 435 Industrial and Organisational Psychology
This course introduces the student to the main advances of this relatively new field, which explore the psychological aspects of working in an organisation. What makes a good organisation? What are good strategies in dealing with the “human factor” in the workplace? Who is good for which job? How can people develop their careers? These are the kinds of questions that this course introduces. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or PSYC 103. Aut (M. Ermemiş)*

PSYC 437 Program Evaluation
Program evaluation is an activity that organizations do routinely either formally or informally because they are concerned with how well human services programs serve people in need. In the course we will cover such topics as why evaluation, role of evaluator, methods of evaluation, utilization of evaluations and ethics in evaluation. Although the course will focus on social programs the course is equally relevant to the evaluation of educational programs, training programs and organizational change programs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 100 or PSYC 103.*

PSYC 438 Interpersonal Relationships
The course examines interpersonal relationships primarily from a social psychological perspective, drawing on research from other fields of psychology including cognitive, developmental, clinical, and personality psychology as well as social-cognitive neuroscience. The central goal of the course is to familiarize students with cutting-edge theories and research in relationship science by defining and explaining the basic structure, functions, dynamics, and formation of human affectional ties. The course will survey a broad range of topics at the heart of relationship science, including interpersonal attraction and mate selection, formation of attachment bonds, social-cognitive processes in interpersonal relationships, jealousy and infidelity, relationship dissolution, loneliness, social rejection, and the effects of social relationships on mental and physical well-being. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (PSYC 100 or PSYC 103) and (PSYC 230 or PSYC 102). Spr (G. Günaydın)*

PSYC 439 Visual Neuroscience
Visual science, a model and reference for all other areas in neuroscience, has seen remarkable advances in the last decade. This course covers basics of the visual system in great detail through review of recent literature. Topics covered include retinal mechanisms, visual pathways, subcortical and cortical processing, lightness and color, motion perception, object recognition, eye movements and attention. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 310. Aut (K. Doerschner) Spr (J. A. Munneke)*

PSYC 483 Theory of Mind
Theory of Mind (or ToM) is the name of the mental competence that enables humans (and possibly other primates) to represent and predict mental states, such as seeing, desiring, believing, thinking, and so on, whether they belong to others or themselves. This is a new discipline, barely 25 years old, which has rapidly become one of the most dynamic research areas in psychology, of central and increasing interest to developmental, comparative, cognitive and clinical psychology, as well as to cognitive science in general. There are several reasons for the importance of ToM: it is the mental competence directly involved in communication, socialization and the acquisition of culture; it is also the competence vitally implicated in the acquisition of language and of higher mental abilities, such as self-control, metarepresentation, introspection, and thinking about one's own thoughts. The class will survey and analyze the evolution and development of ToM, in terms of basic experiments and observational results, both psychological and neuroscientific, will examine clinical conditions caused by ToM deficits, such autism and schizophrenia, and explore the impact of ToM on other competencies, such as empathy, imitation, self-regulation, and more. The class will also discuss major positions and explanations of ToM, such as (the so-called) theory-theory, simulation, modularity, learning, the recently discovered mirror neurons, and so on. *Credit units: 3 ECTS Credit Units: 6.*

PSYC 491 Introduction to Cognitive Psychology
Cognition is a process composed of various phases like transferring sensory information to memory, retention, reasoning, logic, and problem solving. this course is intended to provide an introductory overview of theories and findings in the field of cognitive psychology. The main topics will include perception, memory, language and thought, problem solving and neuroscience. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Michou)*

PSYC 498 Senior Project I
This is a final year project course in which the students alone or with a small group work on a research project. These projects can be research based studies or applied work. The students will develop a proposal during this course and design their project. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 205 and PSYC 206. Aut (L. Al Shawaf) Spr (L. Al Shawaf)*

PSYC 499 Senior Project II
This course is a continuation of PSYC 498 (Senior Thesis 1). During this semester students carry out their studies, write a final report and present them at a departmental poster session. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PSYC 498. Aut (L. Al Shawaf) Spr (L. Al Shawaf)*

PSYC 501 Advanced Cognitive Psychology
This course covers various topics in cognitive psychology, such as perception, attention, memory, learning, metacognition, judgment and decision-making at an advanced level. The course is designed with three goals in mind. First, it gives breadth and depth of knowledge to students in certain cognitive processes. Secondly, it highlights methods and approaches used in cognitive psychology and gets students acquainted with the new trends. Last of all, the course initiates the process of scholarly activities for graduate students, such as critical reading of scholarly articles, literature search and academic writing. *Credit units: 3 ECTS Credit Units: 8. Spr (M. Besken)*

PSYC 502 Advanced Developmental Psychology
This course explores child development from infancy through middle childhood. Research in various areas of development including cognitive, social and emotional will be discussed and the topics will be analyzed from major theoretical perspectives in child psychology. *Credit units: 3 ECTS Credit Units: 8. Aut (J. W. P. Allen)*

PSYC 510 Advanced Social Psychology
The course aims to survey cutting-edge research at the heart of social psychology. Students will read selected social psychological articles from recent issues of top journals in the field. Through class discussions and weekly thought papers, the students will be encouraged to think critically about social psychological research and to identify strengths and weaknesses of research studies. *Credit units: 3 ECTS Credit Units: 8.*

PSYC 515 Selected Topics in Psychology I
Survey of the literature related to a current selected topic of interest. *Credit units: 3 ECTS Credit Units: 8. Spr (H. Ilgaz)*

PSYC 520 Cognitive Neuroscience
Methods in cognitive neuroscience. Models in cognitive neuroscience. Perception. Memory. Learning. Consciousness. *Credit units: 3 ECTS Credit Units: 8. Aut (H. Boyacı)*

PSYC 521 Principles of Functional Magnetic Resonance Imaging
Principles of functional magnetic resonance imaging (fMRI), including the physical principles of signal generation in MRI and the relation of neuronal activity with the blood-oxygen-level-dependent (BOLD) signal. Techniques to conduct experiments investigating the functional activity of the nervous system, and statistical analysis of the fMRI data. Hands-on sessions using the in-campus MRI scanner. *Credit units: 3 ECTS Credit Units: 8. Aut (H. Boyacı)*

PSYC 530 Advanced Research Methods and Statistics in Psychology I
This course will give students hands-on, applied experience designing empirical research studies and quantitatively analyzing data. Students will engage in an in-depth review of psychological research methodology, design an empirical study, collect and analyze quantitative data, and interpret these results within the context of study hypotheses. Students will select the specific topic of their research project, but all students will (1) review both field- and laboratory-based research methods with a particular focus on experimental research design, (2) engage in a thorough review of primary research, (3) design an original empirical study, and (4) prepare an APA-style research report. *Credit units: 3 ECTS Credit Units: 8.*

PSYC 535 Meta-analysis
Meta-analysis. Effect sizes. Fixed and random effects. Heterogeneity. Moderators. Dependencies. Power. Sensitivity analysis. *Credit units: 3 ECTS Credit Units: 8, Prerequisite: PSYC 530.*

PSYC 575 Advanced Training in Psychological Research I
Conducting independent research in psychology. Preparing research reports. *Credit units: 3 ECTS Credit Units: 8. Aut (A. M. Clarke) Spr (A. M. Clarke)*

PSYC 591 Pro-Thesis Seminar I
Presenting material related to thesis. Attending presentations of other students. *Credit units: None ECTS Credit Units: 1. Aut (A. M. Clarke) Spr (A. M. Clarke)*

PSYC 599 M.A. Dissertation
Credit units: None ECTS Credit Units: 56. Aut (A. M. Clarke) Spr (A. M. Clarke)

PSYC 630 Advanced Research Methods and Statistics in Psychology II
Research design. Advanced inferential statistical analysis. Interpreting and writing reports summarizing statistical results. *Credit units: 3 ECTS Credit Units: 8, Prerequisite: PSYC 530.*

PSYC 673 Advanced Training in Psychological Research II
Designing complex empirical studies in psychology. Conducting independent research. Preparing journal-quality research reports. *Credit units: 3 ECTS Credit Units: 8. Aut (A. M. Clarke) Spr (A. M. Clarke)*

PSYC 691 Pro-Thesis Seminar II
Presenting material related to Ph.D. dissertation. Attending presentations of other graduate students. *Credit units: None ECTS Credit Units: 1. Aut (A. M. Clarke) Spr (A. M. Clarke)*

PSYC 699 Ph.D.Dissertation
Ph.D. dissertation. *Credit units: None ECTS Credit Units: 160. Aut (A. M. Clarke) Spr (A. M. Clarke)*

FACULTY OF EDUCATION

Mehmet Baray, Ph.D., Acting Dean
Necmi Akşit, Ph.D., Assoc. Dean

The Faculty of Education, together with the Graduate School of Education, have three departments:

- Department of Computer and Instructional Technology Teacher Education
- Department of Educational Sciences
- Department of English Language Teaching

In addition, sports courses are offered through the Faculty's Physical Education Unit.

Both the Department of Educational Sciences and the Department of English Language Teaching consist of only graduate programs.

ACADEMIC STAFF

Necmi Akşit, Assistant Professor
Ph.D., Educational Science, Middle East Technical University, 1998. Curriculum development, educational administration, teacher education.

Tijen Akşit, Assistant Professor
Ph.D., Educational Sciences (educational administration and planning), Middle East Technical University, 2006. Educational management, English language teacher training, psychology of learning.

Armağan Ateşkan, Assistant Professor of Teaching Practice
Ph.D., Computer Education and Instructional Technologies, Middle East Technical University, 2008. Science and biology education, environmental issues.

Alipaşa Ayas, Visiting Professor
Ph.D., Educational Sciences, University of Southampton, 1993. Curriculum development, teacher education, concept development, assessment and evaluation.

Reyyan Ayfer, Instructor
M.S., Computer Engineering, Middle East Technical University, 1981. Database management, programming languages, data structures, information ethics and security.

Erdat Çataloğlu, Visiting Associate Professor
Ph.D., Curriculum and Instruction (science education), Pennsylvania State University, 2002. Computer instruction, science and physics education, assessment and evaluation.

İlker Kalender, Assistant Professor
Ph.D., Secondary Science and Mathematics Education, Middle East Technical University, 2011. Computerized adaptive testing procedures, detection of creating/aberrant response patternsthrough software, educational technology.

Seyit Koçberber, Assistant Professor
Ph.D., Computer Engineering and Information Science, Bilkent University, 1996. Information retrieval, database systems.

Jennie Farber Lane, Assistant Professor
Ph.D., Curriculum and Instruction, University of Wisconsin - Madison, 2006. Biology education, education for sustainability, curriculum development.

Robin Ann Martin, Assistant Professor (on leave)
Ph.D., Curriculum and Instruction, Iowa State University, 2003. Educational psychology, curriculum development, instructional design, learning and development.

Julie Ann Mathews Aydınlı, Assistant Professor
Ph.D., McGill University, 2003. Literacy development, culture and identity in second language reading and writing, literature in the language classroom, curriculum development.

Aikaterini Michou, Assistant Professor
Ph.D., Educational Sciences, University of Athens, 2005. Educational psychology, motivation in education.

John O'Dwyer, Assistant Professor
Ph.D., Curriculum and Project-Evaluation, University of Surrey, 2005.

Deniz Ortaçtepe, Assistant Professor
Ph.D., Curriculum and Instruction, State University of New York, 2011. Second language socialization, professional development of teachers, social identity in ESL/EFL.

Rasim Özyürek, Assistant Professor
Ph.D., Turkish Language Teaching, Baku State University, 1998.

Sibel Uğurlubilek, Instructor
M.S., Computer Engineering, Atılım University, 2005. Information technologies in education, programming for the internet.

Daryl York, Lecturer (on leave)
M.S., English Language Teaching, Aston University, 1997. School management, curriculum development, discourse analysis.

PART-TIME ACADEMIC STAFF

Didem Barut, M.A., Educational Management, Administration, Planning and Economics, Osmangazi University, 2014.

Aykut İnan İşeri, Ph.D., Secondary Science and Mathematics Education, Middle East Technical University, 2002.

Burcu Karahasan, Ph.D., Secondary Science and Mathematics Education, Middle East Technical University, 2010.

Zeynep Oğuz, B.A., American Culture and Literature, Bilkent University, 2003.

Ahmet Ünal Özmen, B.S., Physics, Middle East Technical University, 1973. Physics teaching.

Sıla Sagun, Ph.D., Curriculum and Instruction, Bilkent University, 2016. Science and Biology Teaching.

DEPARTMENT OF COMPUTER AND INSTRUCTIONAL TECHNOLOGY TEACHER EDUCATION

S. Koçberber (Chair), R. Ayfer, S. Uğurlubilek.

The program for Computer and Instructional Technology Teacher Education is designed to prepare well-qualified K-12 teachers, instructional technologists and computer science professionals to address and support the need for modernization in education through the meaningful and innovative integration of technology in formal and informal learning environments.

The program develops technical skills required in today's modern classrooms and equips students with a strong background in both educational theories and computer science concepts. The program fosters students' development through authentic activities, internships and community service projects where they start gaining valuable experience early in the program. During later semesters, as pre-service teachers, they spend one day per week in partner schools where they gain practical experience in up-to-date approaches to teaching.

The courses are a combination of theory and laboratory practice in up-to-date lab facilities. The curriculum equips students with problem solving abilities, critical thinking abilities and skills for lifelong learning which is achieved through collaborative project work, case studies, problem solving tasks, critiques and demonstrations.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CTE 111	Introduction to Programming I	5 / 10
CTE 113	Information Technologies in Education I	4 / 5
CTE 115	Discrete Mathematics	3 / 5
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CTE 112	Introduction to Programming II	5 / 8
CTE 114	Information Technologies in Education II	4 / 4
ENG 102	English and Composition II	3 / 6
MATH 105	Introduction to Calculus I	4 / 7
TE 116	Introduction to Education Science	3 / 4
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CTE 205	Computer Organization	3 / 5
CTE 211	Programming Languages I	5 / 7
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
PHYS 117	Basic Physics: Mechanics	3 / 6
TE 203	Educational Psychology	3 / 5
TE 207	Introduction to Curriculum	3 / 5
	Social Science Elective	3 / 6

Spring Semester		Credits / ECTS Credits
CTE 212	Programming Languages II	4 / 6
CTE 216	Introduction to Web Technologies	3 / 5
CTE 218	Operating Systems	4 / 5
CTE 252	Instructional Design	3 / 4
GE 251	Collegiate Activities Program II	1 / 1
PHYS 118	Basic Physics II	3 / 4
TE 204	Principles and Methods of Instruction	3 / 5

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CTE 309	Community Service	3 / 4
CTE 311	Database Management Systems	4 / 5
CTE 317	Programming for the Internet I	3 / 4
CTE 321	Human Computer Interaction	3 / 4
CTE 351	Material Design and Development in Education	3 / 4
TE 318	Turkish Education System and School Management	2 / 3
	HCIV Elective	3 / 6

Spring Semester		Credits / ECTS Credits
CTE 308	Information Ethics and Security	3 / 4
CTE 316	Network Structures and Communication	3 / 4
CTE 322	Multimedia Design and Development	3 / 4
TE 307	Measurement and Evaluation	3 / 5
TE 310	Computer Teaching Methods I	3 / 6
TE 312	School Experience I	3 / 6
TE 314	Classroom Management	2 / 3

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
CTE 400	Summer Training	- / 9
CTE 403	Research Methods in Education	3 / 6
CTE 417	Programming for the Internet II	3 / 4
CTE 421	Project Management and Development I	3 / 6
TE 402	Guidance	3 / 5
TE 405	Computer Teaching Methods II	3 / 6
	Unrestricted Elective	3 / 4

Spring Semester		Credits / ECTS Credits
TE 406	Teaching Practice in Computer Teaching	5 / 8
	Project Elective	3 / 4
	Restricted Elective	3 / 4
	Unrestricted Elective	3 / 4

HCIV ELECTIVE COURSES

HCIV 101	History of Civilization I	3 / 6
HCIV 102	History of Civilization II	3 / 6

RESTRICTED ELECTIVE COURSES

COMD 203	Introduction to Communication Studies I	3 / 6
COMD 204	Introduction to Communication Studies II	3 / 6
COMD 205	Basic Photography	3 / 6
COMD 206	Introduction to Digital Cinematography	3 / 6
COMD 207	Film History	3 / 6
COMD 210	Introduction to Screenwriting	3 / 6
COMD 305	Digital Video Production I	3 / 6
COMD 306	Digital Video Production II	3 / 6
COMD 310	Screenwriting	3 / 6
COMD 321	Analysis of Moving Image	3 / 6
COMD 322	Film Theory and Criticism	3 / 6
COMD 331	News Reporting and Writing	3 / 6
COMD 333	News and Society	3 / 6
COMD 335	Science Writing and Journalism	3 / 6
COMD 341	Media and Society	3 / 6
COMD 342	Popular Culture	3 / 6
COMD 346	Introduction to Advertising	3 / 6

COMD 347	Media Industries	3 / 6
COMD 348	New Media	3 / 6
COMD 349	Media Planning	3 / 6
COMD 350	Radio Programming and Production	3 / 6
COMD 354	Game Design and Research	3 / 6
COMD 355	Social Media Marketing	3 / 6
COMD 356	Digital Culture	3 / 6
COMD 357	Multimedia Journalism	3 / 6
COMD 361	Sound Design I	3 / 6
COMD 362	Sound Design II	3 / 6
COMD 363	Music and Media	3 / 6
COMD 364	Video Production for Non-majors	3 / 6
COMD 365	Media, Memory and Culture	3 / 6
COMD 409	Advanced Broadcast Studio	3 / 6
COMD 422	Advanced Issues in Communication Studies	3 / 6
COMD 424	Media Theory and Methods	3 / 6
COMD 433	Gender and Media	3 / 6
COMD 434	Special Topics in Journalism	3 / 6
COMD 435	Documentary	3 / 6
COMD 436	Television Genres	3 / 6
COMD 437	Post-production Techniques	3 / 6
COMD 438	Adaptation in Media	3 / 6
COMD 439	International Public Relations	3 / 6
COMD 442	Special Topics in Visual Studies	3 / 6
COMD 451	Creative Project Design and Development	3 / 6
COMD 461	Public Relations and Communication Campaigns	3 / 6
COMD 462	Special Topics in Advertising	3 / 6
COMD 471	Media Ethics	3 / 6
COMD 511	Theory and Method in Media Visual and Cultural Studies	3 / 7.5
COMD 513	Film and Genre	3 / 7.5
COMD 514	Identity Space and Image	3 / 7.5
COMD 515	Media Reception	3 / 7.5
COMD 516	Turkish Cinema and Modernity	3 / 7.5
COMD 517	Topics in Media Studies	3 / 7.5
COMD 518	New Media and Film Cultures	3 / 7.5
COMD 520	National and Transnational Cinemas	3 / 7.5
COMD 521	Body Movement and Vision in Immersive and Interactive Media I	3 / 7.5
COMD 522	Body Movement and Vision in Immersive and Interactive Media II	3 / 7.5
COMD 523	Media and Everyday Life	3 / 7.5
COMD 524	Essay Film	3 / 7.5
COMD 525	Curatorial Practices in Contemporary Art	3 / 7.5
COMD 531	Science and Media	3 / 7.5
COMD 541	Writing for Media	3 / 7.5
COMD 566	Documentary Form and Practice	3 / 7.5
CTE 502	Foundations of Distance Education	3 / 5
CTIS 485	Information Storage and Management	4 / 6
CTIS 486	Linux System Administration	3 / 6
CTIS 487	Mobile Application Development	4 / 7
CTIS 488	Data Analysis	3 / 6
CTIS 489	Interactive Computer Graphics Programming	3 / 6
CTIS 491	Software Validation Verification and Testing	3 / 6
CTIS 492	Information Systems Outsourcing	3 / 6
CTIS 493	Information Systems Project Management	3 / 6
CTIS 496	Computer and Network Security	3 / 6
CTIS 497	Scaling Networks	4 / 6
CTIS 498	Wide Area Networks	4 / 6
GRA 131	Design Tools and Techniques	3 / 4
GRA 132	Lettering and Introduction to Typography	3 / 4
GRA 205	Rendering for Graphic Design I	3 / 6

GRA 206	Rendering for Graphic Design II	3 / 6
GRA 207	Conceptual Design	3 / 6
GRA 208	Graphic Design Concepts	3 / 6
GRA 209	Graphic Design for Non-Majors	3 / 6
GRA 210	Web Design	3 / 6
GRA 211	Typography I	3 / 6
GRA 212	Typography II	3 / 6
GRA 215	Animation and Film/Television Graphics I	3 / 6
GRA 216	Animation and Film/Television Graphics II	3 / 6
GRA 217	Motion Graphics	3 / 6
GRA 218	Essentials of Photography	3 / 6
GRA 219	Advanced Photography	3 / 6
GRA 223	Photographic Image Processing I	3 / 6
GRA 224	Photographic Image Processing II	3 / 6
GRA 225	Introduction to Visual Techniques I	3 / 6
GRA 226	Introduction to Visual Techniques II	3 / 6
GRA 313	Typographic Design and Theories	3 / 6
GRA 315	Information Design and Data Visualization	3 / 6
GRA 323	Logos, Symbols and Signs	3 / 6
GRA 324	Photographic Practice	3 / 6
GRA 333	Packaging I	3 / 6
GRA 334	Packaging II	3 / 6
GRA 341	History of Graphic Art	3 / 6
GRA 344	Psychology of Advertisement	3 / 4
GRA 347	Design Issues	3 / 6
GRA 351	Introduction to Video Production Techniques I	3 / 6
GRA 352	Introduction to Video Production Techniques II	3 / 6
GRA 353	Design: Image and Text I	3 / 6
GRA 354	Design: Image and Text II	3 / 6
GRA 421	Illustration I	3 / 6
GRA 422	Illustration II	3 / 6
GRA 423	Professional Practice	3 / 6
GRA 501	Graduate Studio I	3 / 7.5
GRA 502	Graduate Studio II	3 / 7.5
GRA 503	Illustration I	3 / 7.5
GRA 504	Illustration II	3 / 7.5
GRA 511	Typography I	3 / 7.5
GRA 512	Typography II	3 / 7.5
GRA 517	Image Time and Motion I	3 / 7.5
GRA 518	Image Time and Motion II	3 / 7.5
GRA 519	Critical Approaches to Advertising Consumer Culture	3 / 7.5
GRA 520	Critical Approaches to Popular Culture	3 / 7.5
GRA 521	Animation I	3 / 7.5
GRA 541	Graphic and Visual Representation	3 / 7.5
GRA 542	Mass Media and Visual Technologies	3 / 7.5
GRA 558	Visual Communication Approach to Artistic Thinking	3 / 7.5

PROJECT ELECTIVE COURSES

CTE 422	Project Management and Development II	4 / 8

COURSE DESCRIPTIONS

CTE 111 Introduction to Programming I

An introduction to programming using problem solving strategies. Theoretical principles and phases of problem solving. Basic properties of algorithms. Top down design. Structured programming techniques will be introduced using the C language. Topics include data representation, simple arithmetic expressions, basic problem solving concepts: selection and repetition, arrays, functions and modular programming, program testing and debugging. *Credit units: 5 ECTS Credit Units: 10.*

CTE 112 Introduction to Programming II
Introduction to data structures. Files: text and binary files. Strings and string manipulation. Structures: Structures as function parameters, pointers to structures, arrays of structures. Dynamic memory allocation. Linked lists. Stacks. Queues. Searching, sorting and merging. Recursion. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: CTE 111.*

CTE 113 Information Technologies in Education I
An introduction to computers and computer applications. This course aims to familiarize the students with the basic terminology and skills needed to use a computer efficiently. Course topics include computer structure and terminology, the Internet, operating systems (Unix, DOS, and Windows). Applications covered include word processing, presentation, spreadsheet and databases applications. Students work with widely used application packages, MS Word, PowerPoint, Excel and Access. *Credit units: 4 ECTS Credit Units: 5.*

CTE 114 Information Technologies in Education II
This course is designed to introduce students to the fundamentals of the usage of the internet in education. Students will gain knowledge of the requirements of successful internet applications in different aspects of education, and become familiar with existing educational internet applications. The course includes an introduction to relevant educational topics. Following this, topics include internet applications used in education, such as blogs, forums and wikis. Students have the opportunity to apply the technologies in an educational context. *Credit units: 4 ECTS Credit Units: 4.*

CTE 115 Discrete Mathematics
The aim of this course is to develop logical reasoning ability of students. Topics include: elements of logic, set theory and operations on sets; DeMorgan's rules, finite and infinite. Relations and functions. Logic circuits. Induction and recursion, pigeonhole principle. Permutations, combinations and probability of discrete events. Graphs and their representation in computing. *Credit units: 3 ECTS Credit Units: 5.*

CTE 205 Computer Organization
Introduction to digital computers. Logic gates. Boolean algebra. Number systems, complements, signed numbers. Von Neumann architecture. Bus structure and interconnection of components. Memory organization. CPU organization, ALU. Control Unit organization. Input/Output organization. *Credit units: 3 ECTS Credit Units: 5.*

CTE 211 Programming Languages I
This course is designed as a first introduction to object-oriented design and programming concepts. Object-oriented concepts are taught using the Java programming language. The course teaches the fundamental concepts of OOP, including classes and objects, encapsulation, inheritance, polymorphism, interfaces and abstract classes. Important Java packages, classes, file and database access and GUI design are also included. *Credit units: 5 ECTS Credit Units: 7, Prerequisite: CTE 112.*

CTE 212 Programming Languages II
The concept of object-oriented and event-driven programming. Designing effective GUIs using Visual Basic. Database access, the use of object linking and embedding.
Credit units: 4 ECTS Credit Units: 6, Prerequisite: CTE 112.

CTE 216 Introduction to Web Technologies
The aim of this course is to provide students with skills necessary to construct well-designed web sites. The course provides an introduction to basic web design and implementation topics to create professional looking web pages. Topics include an introduction to HTTP and CGI web protocols, HTML, XHTML, cascading style sheets, coding standards and techniques accepted by popular Web browser programs, template development, principles of web page design and the implementation of web pages using web authoring tools. *Credit units: 3 ECTS Credit Units: 5.*

CTE 218 Operating Systems
The course is designed to provide the fundamentals of operating systems and an introduction to the internal operations of modern operating systems (OS). Topics include: history and basic OS concepts, process management, memory management, file systems, input/output management, operating system security and protection and support for distributed systems. Also covered is the UNIX environment and shell scripts. Lab sessions: Unix/Linux Administration. *Credit units: 4 ECTS Credit Units: 5, Prerequisite: CTE 205.*

CTE 252 Instructional Design
Principles and models of instructional design. Issues, concepts, and philosophical considerations behind uses of technology in education, with particular emphasis on teacher training resources. Analysis of content, learner, and resources. Selecting instructional objectives and sequencing instruction. *Credit units: 3 ECTS Credit Units: 4.*

CTE 308 Information Ethics and Security
Introduction to ethics and security in computer science. Topics include historical milestones; information ethics: privacy and anonymity, computer crime and malware, professional responsibility, intellectual property. Legal and licensing issues, licensing models, usability and authentication, security auditing. *Credit units: 3 ECTS Credit Units: 4.*

CTE 309 Community Service
This course aims to expose students to volunteer services in order to increase their awareness of the importance of volunteer work, and to gain hands-on volunteer experience. As part of the course, students will be expected to research and assess the needs of the community and, in doing so, participate in projects to gather information, develop community contacts, view ideas from different perspectives, and formulate solutions. To fulfill course requirements, students will be expected to participate in at least one volunteer project in the community. In addition, students will be expected to attend conferences, seminars, panels, participate in organizing activities, and work as members of related students clubs. *Credit units: 3 ECTS Credit Units: 4. Spr (S. Uğurlubilek)*

CTE 311 Database Management Systems
DBMS concepts, definitions, specifications and objectives. Topics include relational data model, SQL as a data manipulation language. Data base design considerations (ER Diagrams and normalization), concurrency control mechanisms, crash recovery concepts and an overview of current trends. Lab sessions include hands on experience using SQL, creating applications with a widely used database package. *Credit units: 4 ECTS Credit Units: 5, Prerequisite: CTE 218.*

CTE 316 Network Structures and Communication
The course aims to provide information about the fundamentals of data communications and contemporary computer network principles and applications. Topics include general information about networking terminology: ISO 7 layers, physical connections, switching and dedicated connection, packet switching vs. session switching, topologies, transmission protocols, routing, peer networks vs. client-server networks, services. Lab sessions: Unix/Linux networking. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: CTE 218.*

CTE 317 Programming for the Internet I
The aim of this course is to provide students with a background in the fundamentals of web-based computing. The course focuses on creating interactive web pages through client-side scripting technologies. Includes a discussion of difference between client-side and server-side technologies. DHTML and Java-scripting techniques will be introduced for use in web based graphical user interface design. Also included are new technologies such as web services, AJAX, XML, XSLT, and RSS. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: BIM 242 or CTE 216.*

CTE 321 Human Computer Interaction
This course focuses on human computer interaction (HCI) design processes and covers the underlying design principles, user interface design methodology, and the user-interface technologies used to implement HCI. The importance of good interfaces will be discussed and throughout the semester concepts and methods will be introduced. Students will complete small project to gain an understanding of HCI methods and concepts. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: (CTE 216 and CTE 211) or (CTE 216 and CTE 212). Aut (S. Uğurlubilek)*

CTE 322 Multimedia Design and Development
Basic principles of design and development of interactive instructional computer applications. Students will complete several projects utilizing a representative multimedia authoring tool and will create a prototype instructional software. Analysis of teaching-learning process using multi-media techniques in education. *Credit units: 3 ECTS Credit Units: 4.*

CTE 351 Material Design and Development in Education
Students will focus on using and integrating technology into teaching-learning processes: visual teaching aids, technology integration issues and interactive materials will be covered from an instructional point of view. The production of such materials and the evaluation of these materials when used in teaching are expected from the student teachers. *Credit units: 3 ECTS Credit Units: 4. Spr (İ. Kalender)*

CTE 400 Summer Training
This course aims to provide students with the opportunity to take part in a professional work environment. This experience will allow for students to obtain a general view of the work environment, and to apply the knowledge and experience gained during their courses to real life problems. As well, students will be exposed to educational topics in technology, both from the technology development and teaching perspective, and may participate in the development of educational tools. Upon completion of the training students will then be able to identify learning objectives in order enable them to effectively utilize their remaining education. This thirty day training period is undertaken during the summer break following the successful completion of the third year. *Credit units: None ECTS Credit Units: 9, Prerequisite: CTE 211 or CTE 212. Aut (S. Uğurlubilek)*

CTE 403 Research Methods in Education
This course covers the fundamentals of educational research such as writing research questions, sampling, validity and reliability as well as research methods. Students will have hands on experience in research methods, basic statistics and writing a research proposal. *Credit units: 3 ECTS Credit Units: 6.*

CTE 417 Programming for the Internet II
The aim of this course is to provide students with an understanding of the fundamentals of web-based computing, web clients and hyper text servers, the CGI standard and CGI programming techniques. Through server-side scripting languages such as PHP students will develop web-applications using accepted techniques and tools and interfacing to popular RDBMS servers. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: CTE 111 and CTE 216.*

CTE 421 Project Management and Development I
The course presents a comprehensive introduction to the systems design skills in information engineering that students, as future users or systems analysts, will need to work in a highly competitive computer-integrated business environment. It provides the students with the skills to identify business problems which may be solved by technology-based solutions, and determine requirements for information systems solutions. The course includes Systems Development Life Cycle (SDLC), Systems Analysis and Design Techniques (DFDs, Logical Modeling, E-R Diagrams, Object Oriented Modeling), review of Unified Modeling Language (UML), Project Management tools (CPM, GANTT, PERT) and evaluation of engineering standards such as MIL-STD-498, IEEE/EIA 12207 and ISO 9000-2000. *Credit units: 3 ECTS Credit Units: 6.*

CTE 422 Project Management and Development II
Students will be working as small teams under close supervision of a faculty member to produce a software system for educational purposes, or develop an "instructional system design" as a solution to an education related problem. Knowledge, structures, principles and methods from computer and/or education related courses from previous semesters will be used during the specification, analysis, design, development implementation, and evaluation phases of the project. Students' projects will be reviewed by a faculty committee. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: CTE 421. Spr (S. Uğurlubilek)*

DEPARTMENT OF EDUCATIONAL SCIENCES

M. Baray (Acting Chair), N. Akşit, T. Akşit, A. Ateşkan, A. Ayas, E. Çataloğlu, İ. Kalender, J. F. Lane, R. A. Martin, A. Michou, J. O'Dwyer, R. Özyürek, D. York.

Part-time: D. Barut, A. İ. İşeri, B. Karahasan, Z. Oğuz, A. Ü. Özmen, S. Sagun.

The Department of Educational Sciences consists of pre-service and in-service graduate programs in the area of curriculum and instruction. The in-service M.A. and Ph.D. programs offered in the Graduate School of Education are aimed at practising teachers. In these programs, we are able to include educators and teachers from all subject areas at all levels of educational institutions, from primary school to university level.

The pre-service Masters in Curriculum and Instruction program combined with a Teaching Certificate is also offered by the Graduate School of Education (CITE) for graduates who wish to train as teachers in high schools.

Curriculum and Instruction is regarded as one of the major areas of education. It embraces all aspects of the teaching and learning which occurs in schools, both in the formal curriculum and the wider aspects of extra-curricular activities. Curriculum and Instruction is concerned with the foundations of school practice and improvement. It includes curriculum planning and development, implementation and evaluation, methods of instruction and learning, instructional leadership, international perspectives on curricula, managing the learning environment, and assessing student learning and progress. Curriculum issues raised during the study lend themselves to critical enquiry, discussion, interpretation, and reflection.

Teacher Education Unit

Necmi Akşit, PhD, Director

Teacher Education Unit is dedicated to producing well qualified high school teachers with potential for leadership in Turkish education. Since the Graduate School of Education opened in 2000, we have graduated over four hundred teachers. Many have since gone on to take their place as leaders in schools, and are already making a contribution to the development of education in Turkey. A major strength of our teacher education program is the variety of schools which our trainee-teachers experience, together with the number of days they spend working with teachers and school students, as they learn their teaching skills. They teach in prestigious schools in Ankara and other major cities in Turkey, as well as in another country. Students who complete our teacher education program are awarded with three qualifications: a degree in MA in Curriculum and Instruction, a teaching certificate (pedagojik formasyon), and an International Baccalaureate Teaching-Learning Certificate. For more information, please visit http://www.gse.bilkent.edu.tr

Master of Arts in Curriculum and Instruction

The program is designed for school teachers with at least two years teaching experience. They may be in positions of middle management, or intending shortly to move to such positions, and thus become educational leaders. It will enable participants to develop the knowledge and skills to improve their own practice and assist in the professional development of colleagues within their area. Those seeking positions of responsibility in a school will be able to offer an extended informed theoretical and practical background of relevance to their duties in such positions from their masters studies.

CURRICULUM

Courses		Credits / ECTS Credits
CI 507	Educational Research	3 / 7
CI 509	Thesis Seminar I	- / 4

CI 513	Statistics	3 / 7
CI 532	Written Academic Discourse	3 / 7
CI 599	Master's Thesis	- / 60
GE 500	Research Methods and Academic Publication Ethics	- / 1
	Restricted Electives (5)	15 / 35

RESTRICTED ELECTIVES

BTE 501	Biology Curriculum Review I	3 / 7
CI 501	Learning Development and Cultural Context for Teaching	3 / 7
CI 502	Managing the Classroom	3 / 7
CI 503	Educational Leadership and School Development	3 / 7
CI 504	Contemporary Issues in Curriculum Development and Evaluation	3 / 7
CI 506	IB and IGCSE Curricula	3 / 7
CI 508	Assessing Student Learning and Progress	3 / 7
CI 511	Curriculum in an International Context	3 / 7
CI 514	Curriculum Development and Evaluation	3 / 7
CI 515	Trends and Issues in Instruction and Assessment	3 / 7
CI 516	Child and Adolescent Psychology	3 / 7
CI 517	Learning Theories and Practice	3 / 7
CI 518	Science of Learning	3 / 7
CI 603	Practicum in Curriculum Development x Evaluation	3 / 7
CI 606	Qualitative Research Methods	3 / 7
CI 608	Current Trends and Issues in Educational Technology	3 / 7
CI 611	Issues and Trends in Education	3 / 7
ETE 503	English Curriculum Review	3 / 7
MTE 501	Mathematics Curriculum Review I	3 / 7
PHIL 521	History of Political and Educational Philosophy	3 / 7
TE 529	Turkish Language and Literature Curriculum Review	3 / 7
TE 560	Physics Curriculum Review	3 / 7
TEFL 501	Second Language Acquisition	3 / 6
TEFL 503	Linguistics: the Nature of Language	3 / 6
TEFL 506	Sociolinguistics	3 / 7
TEFL 510	Language Testing	3 / 6
TEFL 521	EFL Methodology I	3 / 6
TEFL 528	Curriculum Development and Evaluation	3 / 6
TEFL 530	Materials Development	3 / 6

Master of Arts in Curriculum and Instruction with Teaching Certificate

The two-year program in teacher education at Bilkent University Graduate School of Education awards a Masters degree in Curriculum and Instruction, together with a Teaching Certificate which qualifies graduates to teach in high schools. The courses to be followed include the formation courses laid down by the Higher Education Council (YOK) for qualified teacher status, further courses in education, and a thesis. Strong emphasis is given to international dimensions, including the International Baccalaureate and IGCSE curricula. Graduates also receive an IB Teacher Award, following recognition of the program by the International Baccalaureate Organisation.

Currently, the Graduate School of Education accepts students in four subject areas: **Turkish Language and Literature, English, Biology, Mathematics,** and **Physics.**

A strong feature of the program is students' experience in schools. Each semester students have an internship in leading high schools in Ankara, Istanbul and Izmir, observing classes and teaching. In addition they have a five-week internship at Cambridge University and schools in England. The teacher education courses of the program cover the required educational knowledge and skills. Subject-area and liberal arts courses broaden and extend students' understanding of their subject area and educational philosophy.

CURRICULUM

Courses		Credits / ECTS Credits
CI 507	Educational Research	3 / 7
CI 509	Thesis Seminar I	- / 4
CI 513	Statistics	3 / 7
CI 532	Written Academic Discourse	3 / 7
CI 599	Master's Thesis	- / 60
GE 500	Research Methods and Academic Publication Ethics	- / 1
	Restricted Electives (5)	15 / 35

RESTRICTED ELECTIVES

BTE 501	Biology Curriculum Review I	3 / 7
CI 501	Learning Development and Cultural Context for Teaching	3 / 7
CI 502	Managing the Classroom	3 / 7
CI 503	Educational Leadership and School Development	3 / 7
CI 504	Contemporary Issues in Curriculum Development and Evaluation	3 / 7
CI 506	IB and IGCSE Curricula	3 / 7
CI 508	Assessing Student Learning and Progress	3 / 7
CI 511	Curriculum in an International Context	3 / 7
CI 514	Curriculum Development and Evaluation	3 / 7
CI 515	Trends and Issues in Instruction and Assessment	3 / 7
CI 516	Child and Adolescent Psychology	3 / 7
CI 517	Learning Theories and Practice	3 / 7
CI 518	Science of Learning	3 / 7
CI 603	Practicum in Curriculum Development x Evaluation	3 / 7
CI 606	Qualitative Research Methods	3 / 7
CI 608	Current Trends and Issues in Educational Technology	3 / 7
CI 611	Issues and Trends in Education	3 / 7
ETE 503	English Curriculum Review	3 / 7
MTE 501	Mathematics Curriculum Review I	3 / 7
PHIL 521	History of Political and Educational Philosophy	3 / 7
TE 529	Turkish Language and Literature Curriculum Review	3 / 7
TE 560	Physics Curriculum Review	3 / 7
TEFL 501	Second Language Acquisition	3 / 6
TEFL 503	Linguistics: the Nature of Language	3 / 6
TEFL 506	Sociolinguistics	3 / 7
TEFL 510	Language Testing	3 / 6
TEFL 521	EFL Methodology I	3 / 6
TEFL 528	Curriculum Development and Evaluation	3 / 6
TEFL 530	Materials Development	3 / 6

CURRICULUM OF BIOLOGY TEACHING CERTIFICATE

Courses		Credits / ECTS Credits
TE 518	Measurement and Evaluation	2 / 4
TE 519	Classroom Management	2 / 4
TE 520	Instructional Technology and Material Design	3 / 6
TE 528	Introduction to Educational Science	2 / 5
TE 532	Biology Teaching Methods I	3 / 6
TE 542	Biology Teaching Methods II	3 / 6
TE 550	Educational Psychology	2 / 4
TE 552	School Experience I in Biology	3 / 6
TE 562	School Experience II in Biology	3 / 7
TE 572	Teaching Practice in Biology	5 / 8
TE 581	Principles and Methods of Instruction	2 / 4
	Restricted Electives (2)	4 / -

CURRICULUM OF ENGLISH TEACHING CERTIFICATE

Courses		Credits / ECTS Credits
TE 518	Measurement and Evaluation	2 / 4
TE 519	Classroom Management	2 / 4
TE 520	Instructional Technology and Material Design	3 / 6
TE 528	Introduction to Educational Science	2 / 5
TE 531	English Teaching Methods I	3 / 6
TE 541	English Teaching Methods II	3 / 6
TE 550	Educational Psychology	2 / 4
TE 551	School Experience I in English	3 / 6
TE 561	School Experience II in English	3 / 7
TE 571	Teaching Practice in English	5 / 8
TE 581	Principles and Methods of Instruction	2 / 4
	Restricted Electives (2)	4 / -

CURRICULUM OF PHYSICS TEACHING CERTIFICATE

Courses		Credits / ECTS Credits
TE 518	Measurement and Evaluation	2 / 4
TE 519	Classroom Management	2 / 4
TE 520	Instructional Technology and Material Design	3 / 6
TE 528	Introduction to Educational Science	2 / 5
TE 537	Physics Teaching Methods I	3 / 6
TE 547	Physics Teaching Methods II	3 / 6
TE 550	Educational Psychology	2 / 4
TE 557	School Experience I in Physics	3 / 6
TE 567	School Experience II in Physics	3 / 7
TE 577	Teaching Practice in Physics	5 / 8
TE 581	Principles and Methods of Instruction	2 / 4
	Restricted Electives (2)	4 / -

CURRICULUM OF MATHEMATICS TEACHING CERTIFICATE

Courses		Credits / ECTS Credits
TE 518	Measurement and Evaluation	2 / 4
TE 519	Classroom Management	2 / 4
TE 520	Instructional Technology and Material Design	3 / 6
TE 528	Introduction to Educational Science	2 / 5
TE 535	Mathematics Teaching Methods I	3 / 6
TE 545	Mathematics Teaching Methods II	3 / 6
TE 550	Educational Psychology	2 / 4
TE 555	School Experience I in Mathematics	3 / 6
TE 565	School Experience II in Mathematics	3 / 7
TE 575	Teaching Practice in Mathematics	5 / 8
TE 581	Principles and Methods of Instruction	2 / 4
	Restricted Electives (2)	4 / -

CURRICULUM OF TURKISH LANGUAGE AND LITERATURE TEACHING CERTIFICATE

Courses		Credits / ECTS Credits
TE 518	Measurement and Evaluation	2 / 4
TE 519	Classroom Management	2 / 4
TE 520	Instructional Technology and Material Design	3 / 6
TE 528	Introduction to Educational Science	2 / 5
TE 533	Turkish Language Teaching Methods	3 / 6
TE 543	Turkish Literature Teaching Methods	3 / 6
TE 550	Educational Psychology	2 / 4
TE 553	School Experience I in Turkish Language and Literature	3 / 6

TE 563	School Experience II in Turkish Language and Literature	3 / 7
TE 573	Teaching Practice in Turkish Language and Literature	5 / 8
TE 581	Principles and Methods of Instruction	2 / 4
	Restricted Electives (2)	4 / -

RESTRICTED ELECTIVES OF CERTIFICATE PROGRAMS

TE 318	Turkish Education System and School Management	2 / 3
TE 509	Developmental Psychology	2 / 4
TE 524	Guidance	2 / 6
TE 540	Curriculum Development in Education	2 / 4

Doctor of Philosophy in Curriculum and Instruction

The Ph.D. in Curriculum and Instruction is for professional practitioners in education, including school teachers, who wish to continue their education while still working as educators. It is designed for practising educators with at least four years of teaching experience.

The program enables participants to develop knowledge and skills both to extend their own practice and also assist in the professional development of colleagues within their area. It expects participants to contribute to the advancement of knowledge and methods of enquiry through independent and original research, allowing them to make an effective and up-to-date contribution to quality education within the education sectors in Turkey.

Satisfactory completion of a scientific preparatory program is required before starting the Ph.D. program.

CURRICULUM

Courses		Credits / ECTS Credits
CI 601	Instruction: Perspectives and Practice	3 / 8
CI 602	Curriculum: Perspectives and Practice	3 / 8
CI 604	Educational Statistics	3 / 8
CI 605	Educational Research Methods	3 / 8
CI 690	Dissertation Seminar	- / 40
CI 699	Ph.D. Dissertation	- / 130
GE 500	Research Methods and Academic Publication Ethics	- / 1
	Restricted Electives (4)	12 / 28

RESTRICTED ELECTIVES

CI 502	Managing the Classroom	3 / 7
CI 503	Educational Leadership and School Development	3 / 7
CI 506	IB and IGCSE Curricula	3 / 7
CI 508	Assessing Student Learning and Progress	3 / 7
CI 511	Curriculum in an International Context	3 / 7
CI 514	Curriculum Development and Evaluation	3 / 7
CI 515	Trends and Issues in Instruction and Assessment	3 / 7
CI 516	Child and Adolescent Psychology	3 / 7
CI 517	Learning Theories and Practice	3 / 7
CI 518	Science of Learning	3 / 7
CI 532	Written Academic Discourse	3 / 7
CI 603	Practicum in Curriculum Development x Evaluation	3 / 7
CI 606	Qualitative Research Methods	3 / 7
CI 608	Current Trends and Issues in Educational Technology	3 / 7
CI 611	Issues and Trends in Education	3 / 7

COURSE DESCRIPTIONS

TE 116 Introduction to Education Science
Basic concepts in education. Relationship of education to other disciplines (the philosophical, social, legal, psychological, economic and political foundations of education). History of educational science. Major trends in educational science in the 21st century; Research methods in educational science. Structure and characteristics of the Turkish Education System. Role of teachers in education. Characteristics of the teaching profession. Developments and practices in teacher education. *Credit units: 3 ECTS Credit Units: 4.*

TE 203 Educational Psychology
The relationship between education and psychology, definition and functions of educational psychology. Basic concepts of learning and development. Physical, mental, emotional, social and ethical development. Theories of learning, a consideration of learning theories in relation to the teaching process. Effective learning. Factors affecting learning: motivation, individual characteristics, group dynamics; their effects on in-class teaching. *Credit units: 3 ECTS Credit Units: 5.*

TE 204 Principles and Methods of Instruction
The basic concepts of instruction. The principles of teaching and learning. The importance and benefits of instructional planning. The planning of instruction (yearly plans containing units, daily plans and sample activities). Teaching and learning strategies. Instructional methods and techniques, and their relation to practice. Instructional materials. The teacher's roles and responsibilities in improving the quality of instruction. Teacher competencies. *Credit units: 3 ECTS Credit Units: 5. Spr (E. Çataloğlu)*

TE 207 Introduction to Curriculum
This course will introduce foundations of curriculum, and give a general overview of approaches to curriculum development, design, implementation and evaluation. *Credit units: 3 ECTS Credit Units: 5.*

TE 307 Measurement and Evaluation
Role and significance of measurement and evaluation in education, fundamental concepts of measurement and evaluation, desirable qualities of measurement tools (reliability, validity, practicality), measurement tools used in education and their characteristics. Traditional tools (written examinations, short-answer tests, true-false tests, multiple choice tests, matching, oral examinations, assignments). Tools which assess multiple facets of student performance (observation, interview, performance-based assessment, portfolios, research papers, research projects, peer assessment, self-assessment, attitude scales). Use of basic statistical tools to process the results of assessment, evaluating learner outcomes, grading, development of subject area specific assessment tools. *Credit units: 3 ECTS Credit Units: 5.*

TE 310 Computer Teaching Methods I
The course explores, with practical examples, and with reference to current research, the teaching of computer at 6-12 level. It considers all relevant teaching methods, and their application to a range of teaching/learning contexts. Students will engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Ateşkan)*

TE 312 School Experience I
One day a week in a school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyse particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Ateşkan)*

TE 314 Classroom Management
Classroom organization for effective learning. Development and implementation of effective systems for classroom management to maximize learning. Social and psychological factors which determine or affect students' attitudes, motivation and behavior in schools. Group interactions. Behavioral problems. Techniques for meeting the needs of individual learners. The analysis of events and critical incidents in the classroom. *Credit units: 2 ECTS Credit Units: 3. Spr (A. Ateşkan)*

TE 318 Turkish Education System and School Management
Aims and basic principles of the Turkish education system. Legal aspects of education. Structure and operation of the Turkish education system. Theories and processes of management. School organization and management. School administration related to staff, students, teaching and management. Community involvement in schools. *Credit units: 2 ECTS Credit Units: 3.*

TE 402 Guidance
Fundamental concepts, student support services, the role of guidance and counseling in student support services. Principles of guidance, principles and development of guidance, types of guidance and counseling, services, techniques, organization and personnel. Recent developments in the field. Techniques for getting to know students, counselor-teacher cooperation, guidance duties of the teacher. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Michou)*

TE 405 Computer Teaching Methods II
Continuation of Computer Teaching Methods I. Further understanding of the teaching and learning methods with may be used with different groups of school students, and of the context in which learning is set. Further practical applications including microteaching (Preparing lesson plans and teaching materials on selected topics from school curricula, teaching in the classroom environment, evaluating teaching according to the computer teacher competencies). *Credit units: 3 ECTS Credit Units: 6. Aut (E. Çataloğlu) Spr (E. Çataloğlu)*

TE 406 Teaching Practice in Computer Teaching
Students spend one or two days a week in a school, under the supervision of their school mentor and faculty supervisor. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the department. There is a two-hour seminar which both assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8. Aut (E. Çataloğlu) Spr (E. Çataloğlu)*

TE 509 Developmental Psychology
Basic concepts and principles of development. Theories of development. Stages of development. Physical, cognitive, personal and moral development during childhood and adolescence. Problems during puberty and coping strategies. *Credit units: 2 ECTS Credit Units: 4.*

TE 518 Measurement and Evaluation
Role and significance of measurement and evaluation in education, fundamental concepts of measurement and evaluation, desirable qualities of measurement tools (reliability, validity, practicality), measurement tools used in education and their characteristics. Traditional tools (written examinations, short-answer tests, true-false tests, multiple choice tests, matching, oral examinations, assignments). Tools which assess multiple facets of student performance (observation, interview, performance-based assessment, portfolios, research papers, research projects, peer assessment, self-assessment, attitude scales). Use of basic statistical tools to process the results of assessment, evaluating learner outcomes, grading, development of subject area specific assessment tools. *Credit units: 2 ECTS Credit Units: 4. Spr (A. Ayas)*

TE 519 Classroom Management
Fundamental concepts of classroom management, classroom communication and interactions. Definition of classroom management, various aspects of classroom management other than discipline. External and internal factors affecting the classroom climate. Models of classroom management, development and implementation of classroom rules. The physical arrangement of the classroom. Managing undesirable behavior, time management, class organization, developing a class environment conducive to learning (cases and suggestions). *Credit units: 2 ECTS Credit Units: 4. Aut (A. Ateşkan)*

TE 520 Instructional Technology and Material Design
Concepts of instructional technology, characteristics of various types of instructional technology. Role and use of instructional technology in teaching, identification of technology needs in the classroom/school. Appropriate planning and management of the use of technology. Using technology to develop 2-D and 3-D materials, developing teaching tools (worksheets, activities, OHP transparencies, slides, visual media tools such as DVD, VCD and computer based tools). Analyzing educational software, evaluating teaching tools of varying quality. Internet and distance education, principles of visual design, research pertaining to the effectiveness of teaching materials. The state of instructional technology for teaching in Turkey and the wider world. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Ateşkan)*

TE 524 Guidance
Fundamental concepts, student support services, the role of guidance and counseling in student support services. Principles of guidance, principles and development of guidance, types of guidance and counseling, services, techniques, organization and personnel. Recent developments in the field. Techniques for getting to know students, counselor-teacher cooperation, guidance duties of the teacher. *Credit units: 2 ECTS Credit Units: 6. Spr (A. Michou)*

TE 527 Literary Text Review in Teaching Literature
The course aims to enhance perception and interpretation skills in relation to modern theories of literature and criticism in literary text review. Textual analysis will be carried out based on theories focusing on author-text-reader. This is intended to improve critical thinking and the skills for using it in the teaching of literary texts. Methods for utilizing theories of criticism in literature teaching will be related to the Ministry of Education curriculum as well as explored and developed in the context of lifelong learning and the holistic education approach of the International Baccalaureate curriculum. *Credit units: 3 ECTS Credit Units: 6.*

TE 528 Introduction to Educational Science
Basic concepts in education. Relationship of education to other disciplines (the philosophical, social, legal, psychological, economic and political foundations of education). History of educational science. Major trends in educational science in the 21st century; Research methods in educational science. Structure and characteristics of the Turkish Education System. Role of teachers in education. Characteristics of the teaching profession. Developments and practices in teacher education. *Credit units: 2 ECTS Credit Units: 5. Aut (E. Çataloğlu)*

TE 529 Turkish Language and Literature Curriculum Review
This course provides students with knowledge and experience to assist them to become effective Turkish Language and Literature (TLL) teachers. The major areas of TLL taught in school will be reviewed in detail and related to high school curriculum and demands made on high school teachers and students. The skills covered include knowledge of the appropriate level of subject area content and relevancy, together with a working knowledge of school TLL text books, and the application of these skills in the classroom. National, IB and IGCSE curricula will be discussed. *Credit units: 3 ECTS Credit Units: 7. Aut (D. Barut)*

TE 531 English Teaching Methods I
The course explores, with practical examples, and with reference to current research, the teaching of English at high school level. It considers all relevant teaching methods, and their application to a range of teaching/learning contexts. Students will engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Akşit)*

TE 532 Biology Teaching Methods I
The course explores, with practical examples, and with reference to current research, the teaching of biology at high school level. It considers all relevant teaching methods, and their application to a range of teaching/learning contexts. Students will engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (J. F. Lane)*

TE 533 Turkish Language Teaching Methods
The course explores, with practical examples, and with reference to current research, the teaching of Turkish language at high school level. It considers all relevant teaching methods, and their application to a range of teaching/learning contexts. Students will engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (R. Özyürek)*

TE 535 Mathematics Teaching Methods I
The course explores, with practical examples, and with reference to current research, the teaching of mathematics at high school level. It considers all relevant teaching methods, and their application to a range of teaching/learning contexts. Students will engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (A. İ. İşeri)*

TE 537 Physics Teaching Methods I
The course provides an introduction to the teaching of physics, and to the classroom techniques which may be used in the teaching of it. Specific teaching methods and strategies will be explored, together with their application to a range of teaching/learning contexts. Practical applications of the methods will be experienced through a number of activities including microteaching, project work and simulation situations. Students will be asked to engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Çataloğlu)*

TE 540 Curriculum Development in Education
This course is designed to examine approaches to curriculum development. It considers curriculum theorizing, curriculum models and curriculum planning at different levels. Procedures and issues for curriculum development and evaluation, factors that impact curriculum, and curriculum decision making are also studied. *Credit units: 2 ECTS Credit Units: 4. Aut (J. F. Lane)*

TE 541 English Teaching Methods II
This course is a continuation of TE 531. It continues the developmental work of TE 531 in the teaching of English. Students gain further understanding of the teaching and learning methods which may be used with different groups of students, and of the context in which learning is set. There will be further practical applications and classroom experience. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: TE 531. Spr (N. Akşit)*

TE 542 Biology Teaching Methods II
This course is a continuation of TE 532. It continues the developmental work of TE 532 in the teaching of biology. Students gain further understanding of the teaching and learning methods which may be used with different groups of students, and of the context in which learning is set. There will be further practical applications and classroom experience. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Ateşkan)*

TE 543 Turkish Literature Teaching Methods
This course is a continuation of TE 533. It continues the developmental work of TE 533 in the teaching of Turkish language and literature. Students gain further understanding of the teaching and learning methods which may be used with different groups of students, and of the context in which learning is set. There will be further practical applications and classroom experience. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: TE 533. Spr (R. Özyürek)*

TE 545 Mathematics Teaching Methods II
This course is a continuation of TE 535. It continues the developmental work of TE 535 in the teaching of mathematics. Students gain further understanding of the teaching and learning methods which may be used

with different groups of students, and of the context in which learning is set. There will be further practical applications and classroom experience. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: TE 535. Spr (A. İ. İşeri)*

TE 547 Physics Teaching Methods II

This course is a continuation of TE 537. The course provides an introduction to the teaching of physics, and to the classroom techniques which may be used in teaching. Specific teaching methods and strategies will be explored, together with their application to a range of teaching/learning contexts. Practical applications of the methods will be experienced through a number of activities including microteaching, project work, and simulation situations. Students will be asked to engage in extensive reflection on the methods and applications considered. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: TE 537. Spr (İ. Kalender)*

TE 550 Educational Psychology

The relationship between education and psychology, definition and functions of educational psychology. Basic concepts of learning and development. Physical, mental, emotional, social and ethical development. Theories of learning, a consideration of learning theories in relation to the teaching process. Effective learning. Factors affecting learning: motivation, individual characteristics, group dynamics; their effects on in-class teaching. *Credit units: 2 ECTS Credit Units: 4. Aut (A. Michou)*

TE 551 School Experience I in English

One day a week in a high school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyze particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Akşit)*

TE 552 School Experience I in Biology

One day a week in a high school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyse particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (J. F. Lane)*

TE 553 School Experience I in Turkish Language and Literature

One day a week in a high school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyze particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Akşit)*

TE 555 School Experience I in Mathematics

One day a week in a high school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyse particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Akşit)*

TE 557 School Experience I in Physics

One day a week in a high school under the daily supervision of an experienced school teacher who acts as mentor. Students use structured activities which involve lesson observation and interviews to understand the organization and daily work of the school. They analyse particular teaching skills, and consider whole school issues. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 6. Aut (J. F. Lane)*

TE 560 Physics Curriculum Review

The course provides students with knowledge and experience to assist them to become effective physics teachers. The major areas of the physics curriculum taught in high schools will be reviewed in detail and related to the demands made on high school teachers and students. The topics covered include curriculum objectives, content and implementation, assessment, the school-based physics curriculum, textbooks used in schools, the national curriculum, the IGCSE curriculum, and IB curricula. *Credit units: 3 ECTS Credit Units: 7. Aut (A. Ü. Özmen)*

TE 561 School Experience II in English

Students spend one day a week in a school, under the daily supervision of their mentor. They teach classes, as well as working on structured activities related to teaching and the school environment. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: TE 551. Spr (T. Akşit)*

TE 562 School Experience II in Biology
Students spend one day a week in a school, under the daily supervision of their mentor. They teach classes, as well as working on structured activities related to teaching and the school environment. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: TE 552. Spr (J. F. Lane)*

TE 563 School Experience II in Turkish Language and Literature
Students spend one day a week in a school, under the daily supervision of their mentor. They teach classes, as well as working on structured activities related to teaching and the school environment. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: TE 553. Spr (R. Özyürek)*

TE 565 School Experience II in Mathematics
Students spend one day a week in a school, under the daily supervision of their mentor. They teach classes, as well as working on structured activities related to teaching and the school environment. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: TE 555. Spr (İ. Kalender)*

TE 567 School Experience II in Physics
Students spend one day a week in a school, under the daily supervision of their mentor. They teach classes, as well as working on structured activities related to teaching and the school environment. There is a one-hour seminar which consolidates the work done in school. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: TE 557. Spr (E. Çataloğlu)*

TE 571 Teaching Practice in English
Students spend an extended period in a school, under the supervision of their school mentor and faculty supervisor. Students become members of the school for this period. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the English department. The course includes tutorials and seminars which assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: TE 561. Aut (N. Akşit)*

TE 572 Teaching Practice in Biology
Students spend an extended period in a school, under the supervision of their school mentor and faculty supervisor. Students become members of the school for this period. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the biology department. The course includes tutorials and seminars which assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8. Aut (A. Ateşkan)*

TE 573 Teaching Practice in Turkish Language and Literature
Students spend an extended period in a school, under the supervision of their school mentor and faculty supervisor. Students become members of the school for this period. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the Turkish department. The course includes tutorials and seminars which assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8. Aut (R. Özyürek)*

TE 575 Teaching Practice in Mathematics
Students spend an extended period in a school, under the supervision of their school mentor and faculty supervisor. Students become members of the school for this period. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the mathematics department. The course includes tutorials and seminars which assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8. Aut (İ. Kalender)*

TE 577 Teaching Practice in Physics
Students spend an extended period in a school, under the supervision of their school mentor and faculty supervisor. Students become members of the school for this period. They work with teachers, they attend meetings and extra-curricular activities, they observe lessons, and teach full lessons in the physics department. The course includes tutorials and seminars which assist students in the planning and evaluation of their school work and allows them to share experience. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: TE 557 and TE 567. Aut (E. Çataloğlu)*

TE 581 Principles and Methods of Instruction
The basic concepts of instruction. The principles of teaching and learning. The importance and benefits of instructional planning. The planning of instruction (yearly plans containing units, daily plans and sample activities). Teaching and learning strategies. Instructional methods and techniques, and their relation to practice. Instructional materials. The teacher's roles and responsibilities in improving the quality of instruction. Teacher competencies. *Credit units: 2 ECTS Credit Units: 4. Spr (E. Çataloğlu)*

TE 590 Advanced Teaching Practice
Students participate in teaching/learning activities in schools in England over a period of five weeks. They extend their pre-service teacher education studies at Cambridge University, and experience other approaches to high school student learning in an independent school in England. *Credit units: None ECTS Credit Units: 3, Prerequisite: TE 571 or TE 572 or TE 573 or TE 575. Aut (Staff) Spr (Staff)*

BTE 501 Biology Curriculum Review I
The major areas of biology will be reviewed in detail for ecology, animal physiology, and biological classification. They will be related closely to the high school curriculum and the demands made on high school teachers and students. Both the Ministry of Education and IGCSE syllabuses will be covered. Students will be required to extended and update their subject knowledge by consideration of the school biology curriculum, advanced level school test questions, and textbooks both in Turkish and English. *Credit units: 3 ECTS Credit Units: 7. Aut (S. Sagun)*

MTE 501 Mathematics Curriculum Review I
This course provides students with knowledge and experience to assist them to become effective mathematics teachers. The major areas of mathematics taught in school will be reviewed in detail and related to the high school curriculum, focusing on grade 9 and grade 10. The skills covered include knowledge of the appropriate level of mathematical content and relevancy, together with a working knowledge of school mathematics text books, and the application of these skills in the classroom. National standards in mathematics will be discussed. *Credit units: 3 ECTS Credit Units: 7. Aut (B. Karahasan)*

CI 402 Probability Theory
Descriptive statistics. Basic concepts of probability. Combinatorics (methods of counting). Conditional probability. Random variables, univariate and bivariate distributions. Expected value, variance, covariance and correlation. Discrete and continuous probability distributions, law of large numbers, central limit theorem. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Kalender)*

CI 501 Learning Development and Cultural Context for Teaching
The course will focus on the holistic development of school students in their current cultural context. Topics for study include the development of cognitive abilities, critical, creative, and imaginative thinking, Gardner's multiple intelligences, and cognitive and affective taxonomies. The sociology of educability will be considered: the effect of the family and home environment on a child's development and ability to learn and achieve, as well as the impact of other social factors on development. *Credit units: 3 ECTS Credit Units: 7.*

CI 504 Contemporary Issues in Curriculum Development and Evaluation
The course will examine curriculum theory for elementary and high school courses of study. It will consider current trends and issues in curriculum development, the determinants of the curriculum, and conditions for curriculum change. The evaluation of the implementation of new curricula will be included. The role of the teacher, the school, other members of the school community, and the values and attitudes of society, in curriculum implementation will be studied. *Credit units: 3 ECTS Credit Units: 7.*

CI 507 Educational Research
The course is designed to introduce key concepts in quantitative and qualitative research in general. It will explore the different research methods used in educational research. Topics will include formulating research questions, reviewing the literature, synthezising sources, selecting appropriate research designs, sampling, designing valid and reliable instruments for data gathering, and analyzing data. Action research as a qualitative approach to research will be given particular emphasis. *Credit units: 3 ECTS Credit Units: 7. Spr (N. Akşit)*

CI 508 Assessing Student Learning and Progress
The course will focus on formative and summative evaluation at elementary and high school levels. It will review fundamental concepts, principles and uses of testing and evaluation for monitoring the progress and achievement of school students of all ages. Participants will gain experience of devising effective means of formative assessment and recording progress, and in writing specific learning outcomes. They will compose tests, writing items to measure objective and complex outcomes, and analyzing items and examinations to guide student learning and to inform practice. *Credit units: 3 ECTS Credit Units: 7. Aut (İ. Kalender)*

CI 509 Thesis Seminar I
The first seminar of the two thesis seminars is intended to guide the Masters students in their thesis work. Research methods, literature reviews, elaboration of topics, organization of material in relation to each student's research will be discussed, leading to a thorough consideration of, and guidance in, the preparation of the thesis. Students will make presentations of their research to date in order to share their progress and learn from each other. *Credit units: None ECTS Credit Units: 4. Aut (Staff) Spr (Staff)*

CI 510 Thesis Seminar II
The second seminar of the two thesis seminars is intended to guide the Masters students in their thesis work. Research methods, literature reviews, elaboration of topics, organization of material in relation to each student's research will be discussed, leading to a thorough consideration of, and guidance in, the preparation of the thesis.

Students will make presentations of their research to date in order to share their progress and learn from each other. *Credit units: None ECTS Credit Units: 4. Aut (Staff) Spr (Staff)*

CI 511 Curriculum in an International Context
The course examines education, specifically education in schools and the school curriculum, in several countries. In particular, course participants study and compare the International Baccalaureate (IB) system of curricula and assessment from primary to high school, and the nature and role of international education. Such study includes the nature of the IB diploma program; planning, teaching and assessing IB courses; together with critical thinking and the theory of knowledge. The International General Certificate in Secondary Education (IGCSE) is also considered. International large scale comparative studies are included, particularly the findings from the Programme for International Student Assessment (PISA). *Credit units: 3 ECTS Credit Units: 7. Spr (J. O'Dwyer)*

CI 512 Written Academic Discourse I
The course focuses on developing essential research and language skills. It provides opportunities for participants to learn the APA system of referencing, analyze research articles, and start preparing the introduction and literature review sections of their thesis. *Credit units: None ECTS Credit Units: 2. Spr (J. F. Lane)*

CI 513 Statistics
Descriptive statistics; measures of central tendency, measures of variability, measures of relative standing (percentile, z-scores), graphing data, sampling, point and interval estimation, sampling distributions, hypothesis testing, one and two sample tests of hypothesis for means (t-tests), introduction to analysis of variance, statistical software applications. *Credit units: 3 ECTS Credit Units: 7.*

CI 514 Curriculum Development and Evaluation
This course is designed to examine approaches to curriculum development and evaluation. It considers curriculum theorizing, curriculum models and curriculum planning at different levels. The course also provides evaluation models and techniques to analyze curriculum and its components. Procedures and issues for curriculum development and evaluation, factors that impact curriculum, and curriculum decision making are also studied. *Credit units: 3 ECTS Credit Units: 7.*

CI 515 Trends and Issues in Instruction and Assessment
This course will provide participants with an understanding of current trends and issues in instruction and assessment. It will explore procedures for instructional design, delivery, and evaluation. The course will also survey current methods and techniques used to assess student performance. Participants will critically reflect on, and evaluate, current practices and future directions. *Credit units: 3 ECTS Credit Units: 7. Aut (A. Ayas)*

CI 516 Child and Adolescent Psychology
The course provides an introduction to the milestones of development from chilhood through adolescence to adulthood. It covers developmental research methods, the biological and social contextual contributions to individual development, and the fundamental theories of cognitive and psychological development (such as those of Piaget and Erickson). These theories are integrated into a consideration of physical, cognitive, social and emotional development in childhood and adolescence. Aspects of developmental research which focus on the implications for parenting and education are discussed. *Credit units: 3 ECTS Credit Units: 7. Spr (A. Michou)*

CI 517 Learning Theories and Practice
The course focuses on theories of human learning and their implications for education, how we develop and acquire knowledge and skills. It will present behaviorist, social, cognitive and constructivist learning theories, and consider their contribution to teaching practices and to the understanding of students' learning processes. *Credit units: 3 ECTS Credit Units: 7.*

CI 518 Science of Learning
The science of learning involves examining how data is learned, remembered, processed, interpreted and applied. The course will also show connections between the functions of the brain and effective learning/teaching strategies. The course begins with a study of the brain itself, including its anatomy, physiology and health, and how its structure and working relate to learning. Awareness and the biology of conscious thought will be explored through research related to brain development, information processing, memory and retention, transferring learning, and critical thinking. Participants will review this research, and examine how it applies to effective learning and teaching in their subject areas. A related aim of the course is for trainee-teachers to identify teaching methologies, strategies and activities that best assist learning. *Credit units: 3 ECTS Credit Units: 7. Aut (J. F. Lane)*

CI 522 Written Academic Discourse II
This course is a continuation of CI 512. It aims to improve students' kills, knowledge, and writing experiences toward an acceptable academic style of writing using the APA style. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: CI 512.*

CI 532 Written Academic Discourse
This course focuses on developing essential skills for effective presentation of academic language in written discussion. Students learn the APA system for referencing, and prepare their proposals including the introduction, literature review and methodology of their thesis. *Credit units: 3 ECTS Credit Units: 7. Aut (A. Ayas)*

CI 599 Master's Thesis
Credit units: None ECTS Credit Units: 60. Aut (Staff) Spr (Staff)

CI 601 Instruction: Perspectives and Practice
The course focuses on contemporary instructional theories and design models. Participants will also examine instructional strategies and effective delivery methods. Topics will include information processing, learning contracts, simulations, inquiry, learner-based instruction, and digital literacy. *Credit units: 3 ECTS Credit Units: 8.*

CI 602 Curriculum: Perspectives and Practice
The course examines major themes and concepts relevant to curriculum theory and research. Participants will critically analyze models of curriculum theory through philosophical, psychological, sociological and historical perspectives. *Credit units: 3 ECTS Credit Units: 8.*

CI 604 Educational Statistics
This course introduces descriptive and inferential statistical concepts needed to conduct quantitative inquiry in educational statistics. Participants will be expected to analyze cases, and determine and apply appropriate statistical procedures, using the Statistical Package for Social Sciences (SPSS). They will also interpret and report the results. *Credit units: 3 ECTS Credit Units: 8. Aut (İ. Kalender)*

CI 605 Educational Research Methods
The course gives an introduction to the logic of social scientific inquiry and exposure to the methodology, techniques and ethics of research. Participants will focus on how to formulate research problems, collect and analyze data, and present findings, considering various research designs. The use of a theoretical framework in conducting research in educational settings will be emphasized. *Credit units: 3 ECTS Credit Units: 8. Aut (A. Ayas)*

CI 608 Current Trends and Issues in Educational Technology
The aim of this course is to explore current trends and related issues in educational technology. The overall theme of the course considers the many different ways educational technology is used in education; types of available technology, teachers' and students' use of technology, and challenges for the education community at large will be included. Applications, such as Web 2.0, multimedia, and simulations will be considered in detail. Case studies of good practice, and critical evaluation utilizing related scientific research pertaining to the effectiveness of educational technology in teaching and learning will be studied. Sessions will include practical applications in the computer laboratory and students will also be expected to pursue applications relating to their field of expertise at their own time. *Credit units: 3 ECTS Credit Units: 7.*

CI 611 Issues and Trends in Education
The course focuses on educational issues and trends at the national and global level. Participants will explore and discuss implications of policies affecting educational goals, processes and outcomes. The course involves an analysis of the micro- and macro-level issues nationally and internationally, including those concerned with structural and organizational issues, teacher-training, elementary education, secondary education, higher education, and the transitional problems between these levels. *Credit units: 3 ECTS Credit Units: 7. Spr (A. Ayas)*

CI 690 Dissertation Seminar
The seminar is intended to guide doctoral students as they prepare their research proposal, which requires approval by the Ph.D. Committee. The seminar follows the qualifying exam and instructs the students in the preparation of the first three chapters of the dissertation. Participants are expected to formally present their work to the group and share their experiences. *Credit units: None ECTS Credit Units: 40. Aut (Staff) Spr (Staff)*

CI 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 130. Aut (Staff) Spr (Staff)

DEPARTMENT OF ENGLISH LANGUAGE TEACHING

N. Akşit (Chair), J. A. Mathews Aydınlı, D. Ortaçtepe.

Master of Arts in Teaching English as a Foreign Language (TEFL)

The M.A. TEFL Program is designed to help experienced teachers of English as a foreign language develop professionally by increasing their knowledge of foreign language instruction theory and practice. Students in the program examine the following:

- Linguistics, sociolinguistics, and analysis of the English language;
- Second language acquisition and TEFL research;
- Language teaching methodology, curriculum and materials development, and testing.

M.A. TEFL students discuss and apply instructional models and linguistic theories which relate classroom experiences of EFL students to real-life communicative needs. They also improve their skills in understanding and conducting research in foreign language education.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
TEFL 531	Research Methods in Linguistics I	3 / 7
TEFL 532	Research Methods in Linguistics II	3 / 7
TEFL 550	Thesis Seminar	- / 2
TEFL 554	Thesis Writing	- / 55
TEFL 555	Written Academic Discourse	3 / 6
	Restricted Elective I	3 / 7
	Restricted Electives II (6)	18 / 36

RESTRICTED ELECTIVES I

CI 503	Educational Leadership and School Development	3 / 7
CI 504	Contemporary Issues in Curriculum Development and Evaluation	3 / 7
CI 513	Statistics	3 / 7
CI 514	Curriculum Development and Evaluation	3 / 7
CI 515	Trends and Issues in Instruction and Assessment	3 / 7
CI 608	Current Trends and Issues in Educational Technology	3 / 7
ETE 504	Literature for Young Learners	3 / 7
TEFL 506	Sociolinguistics	3 / 7
TEFL 556	Seminar in TEFL	3 / 7

RESTRICTED ELECTIVES II

TE 520	Instructional Technology and Material Design	3 / 6
TE 531	English Teaching Methods I	3 / 6
TE 541	English Teaching Methods II	3 / 6
TEFL 501	Second Language Acquisition	3 / 6
TEFL 503	Linguistics: the Nature of Language	3 / 6
TEFL 510	Language Testing	3 / 6
TEFL 521	EFL Methodology I	3 / 6
TEFL 528	Curriculum Development and Evaluation	3 / 6
TEFL 530	Materials Development	3 / 6

COURSE DESCRIPTIONS

TEFL 501 Second Language Acquisition
Theories of second language acquisition. Students analyze both qualitative and quantitative research studies done in this field during the past 30 years. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Ortaçtepe)*

TEFL 503 Linguistics: the Nature of Language
Foundations in linguistics with an emphasis on basic terminology, concepts, and analysis. Main topics include phonetics, phonology, morphology, syntax, semantics, and pragmatics. Discussion focuses on their relevance and application to second language acquisition and foreign language teaching. *Credit units: 3 ECTS Credit Units: 6. Aut (J. A. Mathews Aydınlı)*

TEFL 506 Sociolinguistics
Examination of linguistic variation in English among social groups due to region, socio-economic status, gender, ethnicity, and age, especially as this variation relates to language learning. Linguistic registers, standard and non-standard dialects, language attitudes, and attitudes toward language learning are also treated. *Credit units: 3 ECTS Credit Units: 7. Spr (D. Ortaçtepe)*

TEFL 510 Language Testing
Theoretical and practical considerations in the construction, use, and critical evaluation of both classroom and standardized tests of language proficiency. Students are acquainted with basic concepts of validity and reliability, as well as a variety of different kinds of tests and testing techniques. *Credit units: 3 ECTS Credit Units: 6. Spr (D. Ortaçtepe)*

TEFL 521 EFL Methodology I
Discussion of the major foreign language teaching methods in their historical contexts, as well as individual language skills and integrated skills. Current areas of concern in ESL/EFL are also examined, and key EFL/ESL terminology is reviewed. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Ortaçtepe)*

TEFL 528 Curriculum Development and Evaluation
Principles of course design, implementation, and evaluation. The role of the teacher in the curriculum process is central to the course. Small projects and papers relating to students' experiences will provide skills in developing and evaluating curricula. *Credit units: 3 ECTS Credit Units: 6. Spr (J. A. Mathews Aydınlı)*

TEFL 530 Materials Development
Selection, adaptation, development, evaluation, and implementation of lesson plans, textbooks, and other materials for different teaching situations. Students become familiar with a variety of materials. Opportunities are provided for critiquing, developing, and adapting materials for a wide range of contexts and target groups. *Credit units: 3 ECTS Credit Units: 6. Spr (J. A. Mathews Aydınlı)*

TEFL 531 Research Methods in Linguistics I
Introduction to skills in library research and applied linguistics research methodology including the collection, analysis, and processing of data. Issues of research methodology are examined for their applicability to critiquing published research and to conducting original research in language-learning environments. Quantitative, qualitative, and mixed-methods research traditions are examined. *Credit units: 3 ECTS Credit Units: 7. Aut (D. Ortaçtepe)*

TEFL 532 Research Methods in Linguistics II
This course is a continuation of Research Methods in Linguistics I, and includes further detailed examination of theoretical and methodological topics in the contemporary literature on qualitative, quantitative, and mixed-methods research designs. It also explores topics in the ongoing development of applied linguistics research methodology in particular, and provides students with additional practice in the critical reading, understanding, and assessing of published research. *Credit units: 3 ECTS Credit Units: 7. Spr (D. Ortaçtepe)*

TEFL 550 Thesis Seminar
Credit units: None ECTS Credit Units: 2. Aut (D. Ortaçtepe)

TEFL 554 Thesis Writing
Focus on presenting aspects of research findings in an organised and coherent manner. Students receive critical feedback from their peers and their instructor on their theses. The emphasis is on the improvement of academic discourse in order to complete the program thesis successfully. *Credit units: None ECTS Credit Units: 55. Aut (Staff) Spr (Staff)*

TEFL 555 Written Academic Discourse
Focus on developing essential skills for effective presentation of academic language in written discussion. Meta-discussion of reading and exercises will help develop students' own abilities to teach academic writing. *Credit units: 3 ECTS Credit Units: 6. Aut (J. A. Mathews Aydınlı)*

TEFL 556 Seminar in TEFL
In-depth exploration of and innovative approaches to topics of importance in the field of TEFL. The course may be divided into two eight-week seminars to allow expanded coverage of the issues. Specific topics to be determined by the instructor(s). *Credit units: 3 ECTS Credit Units: 7.*

FACULTY OF ENGINEERING

Ezhan Karaşan, Ph.D., Dean
İbrahim Körpeoğlu, Ph.D., Assoc. Dean
Mustafa Çelebi Pınar, Ph.D., Assoc. Dean

The Faculty of Engineering comprises four academic departments:

- Computer Engineering
- Electrical and Electronics Engineering
- Industrial Engineering
- Mechanical Engineering

The Departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, and Mechanical Engineering offer both graduate and undergraduate programs leading to B.S., M.S. and Ph.D. degrees. In addition, the Faculty contributes to interdisciplinary graduate programs that offer M.S. and Ph.D. degrees in the areas of Materials Science and Nanotechnology and Neuroscience.

The mission of the Faculty of Engineering is not only to impart contemporary engineering and scientific knowledge in the four engineering disciplines but also to inculcate creativity, research techniques, and self development. The graduates of engineering programs are expected to acquire dynamic learning skills and to readily adapt to technological changes as well as to solve fast growing problems of the modern society.

The programs of study in engineering aim to achieve a productive balance between depth of knowledge acquired in technical areas and breadth of knowledge acquired through humanities, arts and social sciences. Depth involves the intensive study of a subject through specialization in a major field; breadth on the other hand plays an important role to equip the graduate in pursuit of a richer personal and professional life. Hence, the curriculum provides a firm background in the basic sciences through courses in mathematics, computer science, physics, and chemistry. It has a solid syllabus of engineering that leads to specialized courses that are primarily of a technical nature. In order to provide the student with a broad intellectual spectrum, elective courses are offered through the other faculties of the university.

An integral component of engineering profession is centered upon various forms of communication. Therefore, a primary goal in engineering education is to equip prospective engineers with strong communication skills. Language and communications courses are integrated into the curriculum to reach such a target.

Engineering education is an evolutionary process driven by advances in technology. Hence, the aim of the programs is to develop the ability to learn on a career-long basis.

Physical, mathematical and engineering sciences courses are intended to provide the students with the necessary capability to model and analyze the real world. The courses with design components are to increase innovation and synthesis capability whereas the project courses are to enhance the integration capability of the students. Students are expected to utilize, integrate and advance their accumulated knowledge skills and engineering concepts during their semester-long specialized projects. Knowledge in humanities, arts and social science will contribute to students' understanding of the society and environment in which the engineering is practiced.

ACADEMIC STAFF

Nail Akar, Professor
Ph.D., Electrical and Electronics Engineering, Bilkent University, 1994. Teletraffic analysis, performance evaluation, high-speed telecommunication networks, Internet technologies.

Adnan Akay, Professor
Ph.D., Mechanical Engineering, North Carolina State University, 1976. Applied mechanics, vibrations and acoustics, noise control, tribology friction-induced sounds.

Varol Akman, Professor
Ph.D., Electrical, Computer, and Systems Engineering, Rensselaer Polytechnic Institute, 1985. Artificial intelligence, logic, philosophy of language, philosophy of mind, pragmatics, the Internet and society.

Selim Aksoy, Associate Professor
Ph.D., Electrical Engineering, University of Washington, 2001. Computer vision, statistical and structural pattern recognition, machine learning, data mining.

Mehmet Selim Aktürk, Professor
Ph.D., Industrial Engineering, Lehigh University, 1990. Hierarchical planning of large scale systems, cellular manufacturing systems, advanced manufacturing technologies, production scheduling.

Can Alkan, Assistant Professor
Ph.D., Computer Science, Case Western Reserve University, 2005. Bioinformatics, genomics, computational biology.

Ayhan Altıntaş, Professor
Ph.D., Electrical Engineering, Ohio State University, 1986. Electromagnetic scattering, diffraction, and radiation. Fiber and integrated optics.

Çağın Ararat, Assistant Professor
Ph.D., Operations Research and Financial Engineering, Princeton University, 2015. Financial mathematics, risk measures, systemic risk; convex analysis, set-valued functions, Aumann integrals.

Erdal Arıkan, Professor
Ph.D., Electrical Engineering and Computer Science, Massachusetts Institute of Technology, 1985. Information theory.

Orhan Arıkan, Professor
Ph.D., Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, 1990. Signal processing, remote sensing, communications.

Abdullah Atalar, Professor
Ph.D., Electrical Engineering, Stanford University, 1978. Analog and digital integrated circuit design, micromachined sensors.

Ergin Atalar, Professor
Ph.D., Electrical and Electronics Engineering, Bilkent University, 1991. Image guided medical interventions, magnetic resonance imaging, antenna design for MRI.

Erman Ayday, Assistant Professor
Ph.D., Electrical and Computer Engineering Departmant, Georgia Institute of Technology, 2011. Security, privacy, big data analytics.

Cevdet Aykanat, Professor
Ph.D., Electrical and Computer Engineering, Ohio State University, 1988. Parallel computing, algorithms, high performance information retrieval, parallel and distributed web crawling, parallel databases, grid computing.

Orhan Aytür, Professor
Ph.D., Electrical Engineering, Northwestern University, 1991. Optics and photonics, quantum optics, nonlinear optics, lasers, optoelectronics.

Mehmet Baray, Professor
Ph.D., Electrical Engineering and Computer Science, University of California, Berkeley, 1970. Computer architecture, parallel processing, computer engineering education.

Billur Barshan, Professor
Ph.D. Yale University, 1991. Sensor-based robotics, intelligent sensing, ultrasonic, optical, and inertial sensing, sensor signal processing, multi-sensor data fusion, human activity recognition and classification.

Mehmet Zeyyad Baykara, Assistant Professor
Ph.D., Mechanical Engineering and Materials Science, Yale University, 2012. Atomic Force Microscopy and Spectroscopy, Scanning Tunneling Microscopy, Nanotribology, Surface Science.

Luca Biancofiore, Assistant Professor
Ph.D., University of Nice-Sophia Antipolis (France), 2011. Fluid Mechanics, Applied Mathematics.

Fazlı Can, Visiting Professor
Ph.D., Computer Engineering, Middle East Technical University, 1985. Information Retrieval and data mining.

Ramazan Gökberk Cinbiş, Assistant Professor
Ph.D., Computer Science, University of Grenoble, 2014. Computer vision and Machine Learning.

Melih Çakmakcı, Assistant Professor
Ph.D., Mechanical Engineering, University of Michigan, 2009. Dynamic systems and control. Multivariable control systems, nonlinear systems and control, vehicle control systems and smart mechatronic components.

Özlem Çavuş İyigün, Assistant Professor
Ph.D., Operations Research, Rutgers University, 2012. Risk-Averse Dynamic Optimization, Markov Decision Processes, Stochastic Optimization.

Ahmet Enis Çetin, Professor (on leave)
Ph.D., Electrical Engineering, University of Pennsylvania, 1987. Image restoration and coding, time series analysis, spectrum estimation, computer vision,wavelet theory, application of polyspectra-based methods to signal and image processing.

Barbaros Çetin, Assistant Professor
Ph.D., Mechanical Engineering, Vanderbilt University, 2009. Microfluidics, lab-on-a-chip technology, electrokinetic transport at microscale, heat transfer at microscale.

Abdullah Ercüment Çiçek, Assistant Professor
Ph.D., Computer Science, Case Western Reserve University, 2013. Computational biology, machine learning, knowledge discovery on metabolic networks.

Tolga Çukur, Assistant Professor
Ph.D., Electrical Engineering, Stanford University, 2009. Biomedical imaging, magnetic resonance imaging (MRI), signal processing, computational neuroscience.

David Davenport, Lecturer
Ph.D., Electrical Engineering, University of Birmingham, 1980. Artificial intelligence, cognitive science, information retrieval, computer and education, Internet-related issues.

Aynur Dayanık, Instructor
Ph.D., Computer Science, Rutgers University, 2006. Machine Learning, information retrieval, text mining, bioinformatics, data mining.

Savaş Dayanık, Associate Professor
Ph.D., Industrial Engineering and Operations Research, Columbia University, 2002. Stochastic processes and modeling, stochastic dynamic programming, stochastic optimal control. Applications to financial engineering, statistics, and operations management.

Tuğrul Dayar, Professor
Ph.D., Computer Science, North Carolina State University, 1994. Performance modeling and analysis, scientific computing, bioinformatics and computer networks.

F. Hendricus Johannes Deibel, Instructor
Ph.D., Science and Technology Studies, Vrije University, 2009.

Hilmi Volkan Demir, Professor
Ph.D., Electrical Engineering, Stanford University, 2004. Light-emitting diodes (LEDs), photovoltaics (PV), semiconductor nanocrystal optoelectronics, energy transfer driven devices and sensors, nanoparticles/nanocomposites, nanophotonics, RF sensing bioimplants and medical devices.

Uğur Doğrusöz, Professor
Ph.D., Computer Science, Rensselaer Polytechnic Institute, 1995. Graph visualization, bioinformatics, combinatorial algorithms, and graph theory.

Robin Ann Downey, Instructor
Ph.D., Communication Studies, University of Calgary, 2009. Social shaping of technology theories, stakeholder analysis, technology assessment, technological controversies, risk studies, biotechnology, responsible innovation.

Tolga Mete Duman, Professor
Ph.D., Electrical and Computer Engineering, Northeastern University, 1998. Wireless and mobile communications, channel coding, turbo codes.

Emine Yegan Erdem, Assistant Professor
Ph.D., Mechanical Engineering, University of California at Berkeley, 2013. Microfluidics, droplet-based systems, microreactors, nanoparticle synthesis, nanoimprinting.

Nesim Kohen Erkip, Professor
Ph.D., Industrial Engineering and Engineering Management, Stanford University, 1984. Multi-echelon inventory systems, Analytical models for supply chain management, inventory/production planning under uncertainty.

Vakur Behçet Ertürk, Associate Professor
Ph.D., Electrical Engineering, Ohio University, 2000. Theoretical and computational electromagnetics, numerical methods, communications.

Hakan Ferhatosmanoğlu, Professor
Ph.D., Computer Science, University of California, Santa Barbara, 2001. Database systems, data mining, bioinformatics.

Buğra Gedik, Associate Professor
Ph.D., Computer Science, Georgia Institute of Technology, College of Computing, 2006. Data intensive distributed systems, distributed systems, data bases, and cloud computing.

Sinan Gezici, Associate Professor
Ph.D., Electrical Engineering, Princeton University, 2006. Statistical signal processing, ultra-wideband systems, telecommunications, and radar.

Kağan Gökbayrak, Assistant Professor
Ph.D., Manufacturing Engineering, Boston University, 2001. Simulation, queueing theory, optimization.

Uğur Güdükbay, Professor
Ph.D., Computer Engineering and Information Science, Bilkent University, 1994. Computer graphics, physically-based modeling and animation, deformable models, multimedia databases, computational geometry.

Çiğdem Gündüz Demir, Associate Professor
Ph.D., Computer Science, Rensselaer Polytechnic Institute, 2005. Medical image analysis, computational biology, pattern recognition, machine learning, computer vision.

Ülkü Gürler, Professor
Ph.D., Statistics, University of Pennsylvania, 1990. Stochastic inventory models, reliability and maintenance survival analysis. Nonparametric estimation, Bayesian analysis.

H. Altay Güvenir, Professor
Ph.D., Computer Engineering and Science, Case Western Reserve University, 1987. Artificial intelligence, machine learning, data mining, intelligent data analysis.

Mehmet Selim Hanay, Assistant Professor
Ph.D., Physics, California Institute of Technology (Caltech), 2011. Nanoelectromechanical systems, mass sensing.

Yusuf Ziya İder, Professor
Ph.D., Biomedical Engineering, Northwestern University, 1979. Electrical impedance tomography, magnetic resonance imaging, acquisition and processing of physiological signals, PC based instrumentation.

Fatih Ömer İlday, Associate Professor
Ph.D., Cornell University, 2003. Non-linear optics ultrafast optical phenomena.

Ali Javili, Assistant Professor
Ph.D., Mechanical Engineering, University of Erlangen - Nuremberg, 2012. Computational Continuum Mechanics, Interfaces and Interphases, Multi-physics, Bio-mechanics, Applied Mathematics.

Ezhan Karaşan, Professor
Ph.D., Electrical and Computer Engineering, Rutgers University, 1995. Broadband integrated networks, traffic and switching theory, optical networks, information and coding theory.

Oya Karaşan, Professor
Ph.D., Operations Research, Rutgers University, 1997. Combinatorial optimization, mathematical programming, network flows, theoretical computer science.

Yiğit Karpat, Associate Professor
Ph.D., Industrial Engineering, Rutgers University, 2007. Manufacturing systems and processes, micro/nano technologies.

Özlem Karsu, Assistant Professor
Ph.D., Operational Research, London School of Economics, 2014. Multicriteria decision making, inequity-averse optimisation, health care resource allocation, assignment problems.

Ayşe Selin Kocaman, Assistant Professor
Ph.D., Earth and Environmental Engineering, Columbia University, 2013. Energy infrastructure design & planning, modeling & optimization of power systems, renewable & sustainable energy resources, rural electrification & sustainable development.

Süleyman Serdar Kozat, Associate Professor
Ph.D., Electrical and Computer Engineering,University of Illinois at Urbana Champaign, 2004. Digital signal processing, adaptive filtering, online learning and machine learning algorithms for signal processing.

İbrahim Körpeoğlu, Professor
Ph.D., Computer Science, University of Maryland, College Park, 2000. Computer networks, mobile and wireless networks, computer systems.

Hayrettin Köymen, Professor
Ph.D., Electrical Engineering, University of Birmingham, 1979. Acoustic imaging, linear and finite amplitude acoustics, medical instrumentation, processing and modeling of physiological signals.

Mehmet Alper Kutay, Instructor
Ph.D., Electrical and Electronics Engineering, Bilkent University, 1999.

Ömer Morgül, Professor
Ph.D., Electrical Engineering, University of California, Berkeley, 1989. Linear and nonlinear systems, distributed parameter systems, control of flexible structures, nonlinear dynamics, neural networks.

Ayşe Semra Mumcu, Instructor
M.S., Electrical and Electronics Engineering, Middle East Technical University, 1990. Computer architecture, technical computing.

Onur Mutlu, Associate Professor
Ph.D., Computer Engineering, University of Texas at Austin, 2006. Computer architecture, computer systems, bioinformatics, energy efficiency, dependable and secure systems.

Emre Nadar, Assistant Professor
Ph.D., Operations Management and Manufacturing, Carnegie Mellon University, 2012. Markov decision processes, supply chain management, sustainable operations.

Osman Oğuz, Associate Professor
Ph.D., Management Sciences, University of Waterloo, 1978. Mathematical programming, linear and integer programming, scheduling.

Levent Onural, Professor
Ph.D., Electrical and Computer Engineering, State University of New York at Buffalo, 1985. Signal and image processing, video processing, holography, diffraction, signal processing for diffraction and holography, 3DTV.

Hilmi Öncül, Instructor
M.S., Computer Science, University of Wisconsin, 1971. Computers and information processing.

Emine Öncüler Yayalar, Instructor
Ph.D., Sociology, Columbia University, 2013.

Haldun Özaktaş, Professor
Ph.D., Electrical Engineering, Stanford University, 1991. Optical information processing, signal and image processing, optoelectronic and optically interconnected computing systems.

Ekmel Özbay, Professor
Ph.D., Electrical Engineering, Stanford University, 1992. Nanotechnology, nanophotonics, nano-electronics, metamaterials, GaN MOCVD growth, GaN devices, photonic crystals, physics and applications of nanostructures, photonic devices, nanosensors.

Hitay Özbay, Professor
Ph.D., Control Sciences and Dynamical Systems, University of Minnesota, 1989. Robust control, distributed parameter systems, applications of control theory in various engineering fields.

Amine Gizem Özbaygın, Research Fellow
B.S., Industrial Engineering, Bilkent University, 2011.

Onur Özcan, Assistant Professor
Ph.D., Mechanical Engineering, Carnegie Mellon University, 2012. Bio-inspired robotics, miniature robotics, flexure-based mechanisms, alternative fabrication methods for miniature robots and mechanisms, novel actuators, sensors, and mechanisms, autonomous robots.

Muhammet Mustafa Özdal, Assistant Professor
Ph.D., Computer Science, University of Illinois at Urbana-Champaign, 2005. Algorithms for electronic design automation, heterogeneous computing, hardware-software co-design.

Bülent Özgüç, Professor
Ph.D., Computer Science, University of Pennsylvania, 1978. Computer graphics, user interface design.

Arif Bülent Özgüler, Professor
Ph.D., Electrical Engineering, University of Florida, 1982. Decentralized control, stability robustness, realization theory, linear matrix equations.

Özcan Öztürk, Associate Professor
Ph.D., Computer Science and Engineering, Pennsylvania State University, 2007. Multicores and manycores, cloud computing, high performance computing, compiler optimizations, computer architecture.

Mustafa Çelebi Pınar, Professor
Ph.D., Systems Engineering, University of Pennsylvania, 1992. Mathematical programming, quadratic programming, network optimization.

Lori Rae Russell Dağ, Instructor
M.S., Computer Engineering, Atılım University, 2006. Object oriented programming, database management systems, computer applications.

Emine Ülkü Sarıtaş, Assistant Professor
Ph.D., Electrical Engineering, Stanford University, 2009. Biomedical imaging, magnetic resonance imaging (MRI), magnetic particle imaging (MPI), signal and image processing, safety limits of magnetic fields in medical imaging systems.

İpek Sözen, Instructor
M.S., Computer Engineering, Middle East Technical University, 1989. Programming languages, data structures, information systems.

Nil Şahin, Instructor
Ph.D., Mathematics, Middle East Technical University, 2012.

Alper Şen, Associate Professor
Ph.D., Business Administration, University of Southern California, 2000. Revenue management, inventory theory, supply chain management, machine scheduling.

Öznur Taştan Okan, Assistant Professor
Ph.D., Computer Science, Carnegie Mellon University, 2011. Computational biology, bioinformatics, machine learning, data mining and crowd-sourcing.

Cem Tekin, Assistant Professor
Ph.D., Electrical Engineering and Computer Science, University of Michigan, 2013. Online learning, data mining, multi-armed bandits, multi-agent systems, healthcare informatics, recommender systems, dynamic spectrum access.

İlker Temizer, Associate Professor (on leave)
Ph.D., Mechanical Engineering, University of California, Berkeley, 2005. Computational mechanics, thermodynamics of homogenization, contact mechanics, multiscale modeling.

Ayşegül Toptal Bilhan, Assistant Professor (on leave)
Ph.D., Industrial Engineering, Texas A&M University, 2003. Inventory theory, supply chain management, machine scheduling.

Firdevs Ulus, Assistant Professor
Ph.D., Operations Research and Financial Engineering, Princeton University, 2015. Multi-objective and vector optimization, algorithms, financial applications.

Özgür Ulusoy, Professor
Ph.D., Computer Science, University of Illinois at Urbana-Champaign, 1992. Database systems, web information retrieval, mobile and peer to peer systems.

Emre Uzun, Instructor
Ph.D., Management, Rutgers University, 2015. Security Analysis of Access Control Systems.

Aslı Üstüner, Instructor
M.S., Mechanical Engineering, University of New Hampshire, USA, 1993. CAD design and analysis, engineering computation tools.

Hande Yaman Paternotte, Professor
Ph.D., Operations Research, Université Libre de Bruxelles, 2002. Integer programming, polyhedral theory, location and network design, robust optimization.

Bahar Yetiş, Professor
Ph.D., Industrial Engineering, Bilkent University, 1999. Hub location problems, hazardous materials transportation, bilevel optimization, mathematical programming.

Yıldıray Yıldız, Assistant Professor
Ph.D., Mechanical Engineering, Massachusetts Institute of Technology, 2009. System dynamics and control, reinforcement learning, game theory, aerospace, automotive and robotics applications.

ACADEMIC COORDINATORS

Nermin Fenmen, M.S., Chemical Engineering, Middle East Technical University, 1982.
Berrin Keyik Çelik, B.S., Industrial Engineering, Bilkent University, 1997.

LABORATORY COORDINATORS

Şakir Baytaroğlu, Ph.D., Metallurgy Department, Yıldız Technical University, 1996.

PART-TIME ACADEMIC STAFF

Haluk Altunel, Ph.D., Electrical and Electronics Engineering, Middle East Technical University, 2008.
Ömer Aka Anlağan, Ph.D., Machine Tool Technology Division, University of Manchester Institute of Science and Technology (UMIST), 1975.
Şerif Faruk Arınç, Ph.D., Nuclear Engineering, North Carolina State University, 1976.
Okan Arslan, M.Sc., Operations Research, Air Force Institute of Technology, 2009. Combinatorial optimization, network design, electrified transportation.
Şakir Baytaroğlu, Ph.D., Metallurgy Department, Yldz Technical University, 1996.
Hasan Semih Ergür, Ph.D., Mechanical Engineering, University of Manchester, 1984.
Kemal Göler, Ph.D., Social Science, Caltech, 1990. Game theory, applied auction/mechanism/incentive design, structural econometrics, pricing and revenue management.
Bora Güngören, M.B.A., Business Administration, Işk University, 2011. Marketing, finance, management.
Ali Taha Koç, Ph.D., Electrical Engineering, University of Texas at Dallas, 2013.
Yavuz Oruç, Ph.D., Syracuse University, 1983.
Bülent Emre Platin, Sc.D., Mechanical Engineering, Massachusetts Institute of Technology, 1978. System dynamics, modeling and simulation, control systems, nonlinear systems, variable structure systems, mechatronics, system identification.
William Sawyer, M.S., Electrical Engineering, Northeastern University, 1988. Digital design, CAD tools, computer architecture.
Ertuğrul Kartal Tabak, Ph.D., Computer Engineering, Bilkent University, 2013.
Müjdat Tohumcu, Ph.D., Elecrical and Electronics Engineering, Middle East Technical University, 1985.
Hakan Töreyin, Ph.D., Electrical and Computer Engineering, Georgia Institute of Technology, 2014. Wearable and implantable sensing and neuromodulation systems, energy-efficient analog/neuromorphic signal processing in hardware.
Eray Tüzün, Ph.D., Information Systems, Middle East Technical University, 2014.
İsmail Enis Ungan, Ph.D., Electrical and Electronics Engineering, Middle East Technical University, 1996.
Mehmet Yılmaz, Ph.D., Mechanical Engineering, Columbia University, 2013.

DEPARTMENT OF COMPUTER ENGINEERING

H. A. Güvenir (Chair), V. Akman, S. Aksoy, C. Alkan, E. Ayday, C. Aykanat, M. Baray, F. Can, R. G. Cinbiş, A. E. Çiçek, D. Davenport, A. Dayanık, T. Dayar, U. Doğrusöz, H. Ferhatosmanoğlu, B. Gedik, U. Güdükbay, Ç. Gündüz Demir, İ. Körpeoğlu, A. S. Mumcu, O. Mutlu, H. Öncül, M. M. Özdal, B. Özgüç, Ö. Öztürk, L. R. Russell Dağ, İ. Sözen, Ö. Taştan Okan, Ö. Ulusoy, A. Üstüner.

Part-time: H. Altunel, B. Güngören, Y. Oruç, W. Sawyer, E. K. Tabak, E. Tüzün.

The Computer Engineering Department offers programs that lead to B.S., M.S., and Ph.D. degrees.

UNDERGRADUATE PROGRAM

Bilkent University has been founded with the aim of establishing a center of excellence in higher education and research. The Department of Computer Engineering is responsible for the implementation of this mission in the area of computer engineering, and is dedicated to serving society and the advancement of knowledge through excellent teaching and scholarship.

As its educational objectives, our department is committed to prepare our alumni to

1. Pursue advanced studies and/or
2. Have successful careers in industry, government, or academia.

Beyond the educational objectives, we expect our alumni to be known for their

1. Intellectual maturity in problem solving, design, creativity and analytical/critical thinking.
2. Possession of a strong background in the principles and practices of computer engineering.
3. Knowledge that is relevant technological needs in a competitive global environment.
4. Continuing efforts to learn throughout their career.
5. Collaboration with others.
6. Strong written and oral communication skills.
7. Professional and ethical responsibility.

The program aims to provide students with the fundamental knowledge and interdisciplinary problem solving skills for a fulfilling career in high quality engineering work and advanced research, required in the information based society of the 21st century. The program emphasizes a solid background in basic science and mathematics, a strong preparation in hardware, software and theory towards the analysis, design and application of computers and information-processing techniques to the solution of real world problems. The courses are complemented with laboratory practice with state-of-the-art computing systems. With the help of two summer trainings each of which must be at least four weeks long, junior and senior students practice their knowledge, learn to function in a collaborative and most of the time multi-disciplinary environment, and improve their communication skills. The program also provides the students with a broad intellectual spectrum by including various elective courses in economics, social sciences, humanities and arts. For two semesters in the senior year, students work on a design project that requires creative thinking and present their work at the end of their study in the department.

The Computer Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 101	Algorithms and Programming I	4 / 7
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
MBG 110	Introduction to Modern Biology	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CS 102	Algorithms and Programming II	4 / 7
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
MATH 132	Discrete and Combinatorial Mathematics	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CS 201	Fundamental Structures of Computer Science I	3 / 6
CS 223	Digital Design	4 / 7
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
HUM 111	Cultures Civilizations and Ideas I	3 / 6
PHYS 101	General Physics I	4 / 6

Spring Semester		Credits / ECTS Credits
CS 202	Fundamental Structures of Computer Science II	3 / 6
CS 224	Computer Organization	4 / 7
GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6
MATH 225	Linear Algebra and Differential Equations	4 / 7
PHYS 102	General Physics II	4 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CS 299	Summer Training I	- / 6
CS 315	Programming Languages	3 / 6
CS 319	Object-Oriented Software Engineering	4 / 6
GE 301	Science Technology and Society	2 / 3
MATH 230	Probability and Statistics for Engineers	3 / 6
	Humanities and Social Sciences Elective	3 / 6

Spring Semester		Credits / ECTS Credits
CS 342	Operating Systems	4 / 6
CS 353	Database Systems	3 / 6
EEE 391	Basics of Signals and Systems	3 / 6
ENG 401	Technical Report Writing and Presentation	2 / 4
	Humanities and Social Sciences Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
CS 399	Summer Training II	- / 6
CS 473	Algorithms I	3 / 6
IE 400	Principles of Engineering Management	3 / 6

	Project Elective	3 / 6
	Technical Electives (2)	6 / 12

Spring Semester Credits / ECTS Credits

CS 476	Automata Theory and Formal Languages	3 / 6
	Project Elective	3 / 6
	Technical Electives (3)	9 / 18

PROJECT ELECTIVES

CS 491	Senior Design Project I	3 / 6
CS 492	Senior Design Project II	3 / 6
GE 401	Innovative Product Design and Development I	3 / 6
GE 402	Innovative Product Design and Development II	3 / 6

HUMANITIES and SOCIAL SCIENCES ELECTIVES

A list of approved elective courses is announced at the beginning of each semester by the Department.

TECHNICAL ELECTIVES

CS 411	Software Architecture Design	3 / 6
CS 412	Enterprise Software Systems	3 / 6
CS 413	Software Engineering Project Management	3 / 6
CS 415	Software Product Line Engineering	3 / 6
CS 421	Computer Networks	3 / 6
CS 423	Computer Architecture	3 / 6
CS 425	Algorithms for Web-Scale Data	3 / 6
CS 426	Parallel Computing	3 / 6
CS 432	Machine-to-Machine (M2M) Systems	3 / 6
CS 442	Distributed Systems and Algorithms	3 / 6
CS 443	Cloud Computing and Mobile Applications	3 / 6
CS 453	Application Lifecycle Management	3 / 6
CS 458	Software Verification and Validation	3 / 6
CS 461	Artificial Intelligence	3 / 6
CS 464	Introduction to Machine Learning	3 / 6
CS 465	Computer Graphics I	4 / 6
CS 470	Introduction to Applied Cryptography	3 / 6
CS 479	Introduction to Cyber Security	3 / 6
CS 481	Bioinformatics Algorithms	3 / 6
CS 484	Image Analysis	3 / 6
CS 490	Introduction to Research in Computer Engineering and Science	3 / 6
CS 502	Algorithms II	3 / 7.5
EEE 424	Digital Signal Processing	4 / 7
EEE 436	Wireless Networking Technologies and Applications	3 / 6
EEE 443	Neural Networks	3 / 6
EEE 485	Statistical Learning and Data Analytics	3 / 6
IE 324	Simulation	4 / 7
IE 325	Stochastic Models	3 / 6
IE 420	Heuristics in Optimization	3 / 6
IE 451	Applied Data Analysis	3 / 6
MATH 202	Complex Analysis	3 / 6
MATH 213	Advanced Calculus I	3 / 6
MATH 215	Mathematical Analysis	3 / 6
MATH 224	Linear Algebra II	3 / 6
MATH 253	Introduction to Number Theory	3 / 6
MATH 313	Real Analysis I	3 / 6
MATH 314	Real Analysis II	3 / 6

MATH 323	Algebra I	3 / 6
MATH 324	Algebra II	3 / 6
MATH 420	Introduction to Cryptography	3 / 6
MATH 453	Algebraic Number Theory	3 / 6
MATH 501	Real Analysis I	3 / 7.5
MBG 209	Principles of Genetics	3 / 6
MBG 210	Genetics	4 / 7
MBG 222	Fundamentals of Molecular Genetics	3 / 6
MBG 324	Molecular Biology of the Gene	4 / 7
MBG 326	Introduction to Bioinformatics	3 / 6
MBG 418	Genomics	4 / 6
MBG 482	Computational Approaches to Biology	3 / 6

GRADUATE PROGRAM

The Department of Computer Engineering offers M.S. and Ph.D. degree programs with the possibility of specialization in different areas of research in computer engineering. Current research areas are artificial intelligence, logic, computer vision, data mining, machine learning, pattern recognition, big data, data stream processing systems, data intensive distributed systems, bioinformatics, computational biology, genomics, database systems, distributed database systems, object-oriented systems, information storage and retrieval, software engineering, software architecture design, computer graphics, physically based animation, ray tracing, radiosity, user interfaces, image analysis, parallel processing, parallel algorithm design, task assignment, simulation of various applications on multicomputer architectures, multicores and manycores, cloud computing, high performance computing, parallel methods for scientific computing, computer networks, mobile and wireless networking, combinatorial algorithms, graph theory, graph drawing, graph coloring, computational geometry, graph visualization, capacity planning for web services, performance modeling.

Master of Science in Computer Engineering

Admission: All applicants are required to have a B.S. degree in computer engineering, computer science, or in a related field of science or engineering. Students with a B.S. degree in areas other than computer engineering may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
CS 590	Research Seminar I	- / 1
CS 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	Graduate Electives (6)	18 / 45
	Technical Elective	3 / 6

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

Technical Elective Courses: All 3XX and higher level CS coded or 2XX, 3XX, 4XX level CHEM, EEE, IE, MATH, MBG, ME, PHYS coded courses with at least 3 credits and ECON 513.

Doctor of Philosophy in Computer Engineering

Admission: All applicants are required to have a M.S. degree with thesis in computer engineering, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
CS 690	Research Seminar II	- / 1
CS 699	Ph.D. Dissertation	- / 140
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
	Graduate Electives (7)	21 / 52.5

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.

COURSE DESCRIPTIONS

CS 101 Algorithms and Programming I
Basic computer literacy: terminology, system components and operation. Fundamentals of computer programming: top-down structured design, sequence, decision, repetition, syntax, compilation, debugging and maintenance, object-oriented programming with Java, objects classes, methods, parameters, arrays, layout and style. The emphasis is on an engineering "right-first-time" approach to solving large problems using computers. *Credit units: 4 ECTS Credit Units: 7. Aut (D. Davenport, A. Dayanık) Spr (E. Ayday, H. A. Güvenir)*

CS 102 Algorithms and Programming II
Enhanced Object-Oriented Programming with Java. Inheritance and polymorphism, abstract classes and interfaces, graphical-user-interfaces, exceptions. Abstract data structures: lists, stacks, queues and trees. Recursion. Files. Searching and sorting. Hashing. Time and space considerations. Students undertake a large design project involving teamwork, independent learning, writing and presenting of requirements, user-interface design, and project documentation. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CS 101 or CS 114. Aut (U. Güdükbay, Ö. Taştan Okan) Spr (D. Davenport, A. Dayanık)*

CS 113 Introduction to Computing
Introduction to computers and programming. Programming with MATLAB: Basic data manipulation, user interface, scripts. Vectors and arrays: using built-in functions, data collections, vectors, arrays. Execution control: code blocks, conditional execution, iteration, loops. Functions: abstraction and encapsulation. Character strings:

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

mapping casting, tokens and delimiting, format conversion, character string operations, arrays of strings. Cell arrays and structures: collecting dissimilar objects, cell arrays, structure arrays. File input and output: Serial Input and Output. Principles of problem solving: solving simple problems, assembling solution steps, summary of operations, solving larger problems. Plotting: 2-D and 3-D plotting, surface plots. Matrices: behavioral abstraction, matrix operations, rotating coordinates, solving simultaneous linear equations, engineering examples. Numerical methods: interpolation, curve fitting, numerical integration, numerical differentiation. *Credit units: 4 ECTS Credit Units: 7. Aut (A. S. Mumcu, A. Üstüner) Spr (A. Üstüner)*

CS 114 Introduction to Programming

Introduction to programming with Java. Data and Expressions: character strings, variables and assignments, primitive data types, expressions, data conversion. Using classes and objects: creating objects, the String class, the Random class, the Math class, formatting output, enumerated types. Writing classes: classes and objects, anatomy of a class, encapsulation, anatomy of a method. Conditionals and loops: Boolean expressions, the if statement, comparing data, the switch statement, the while statement, iterators, the do statement, the for statement. Arrays: array elements, declaring and using arrays, arrays of objects, command-line arguments, variable length parameter lists, two-dimensional arrays, the ArrayList class, Recursion: recursive thinking, recursive programming, using recursion. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CS 111 or CS 113. Aut (L. R. Russell Dağ) Spr (L. R. Russell Dağ, İ. Sözen)*

CS 121 Introduction to Computer Tools

Fundamental office tools. Word processing, document formatting, paragraph formats, styles, hyphenation, spelling and grammar checking, outline, table of contents, indexes, citations, captions and bibliography; creating master document and subdocuments, tracking changes in a document; multiple user editing, versioning, mail merge and mailing labels. Introduction to spreadsheet concepts, formatting worksheets, managing worksheets; writing formulas and use of built-in functions and auditing; conditional formatting; common mistakes in writing formulas, circular reference, missing reference in formulas; charts. Database concepts. Preparing presentations, templates, use of multimedia. *Credit units: 3 ECTS Credit Units: 6. Aut (A. S. Mumcu, H. Öncül, L. R. Russell Dağ) Spr (A. S. Mumcu, H. Öncül)*

CS 123 Introduction to Computing and Programming

Introduction to spreadsheet concept. Formatting and managing worksheets. Entering data into cells, formulas and commonly-used functions, creating charts using Excel data. Relative and absolute addresses. Database query concept. Basic programming concepts. Array operations in MATLAB. Conditional statements and loops. Two-dimensional plots in MATLAB. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Sözen, S. Uğurlubilek) Spr (L. R. Russell Dağ, İ. Sözen, S. Uğurlubilek)*

CS 153 Introduction to Computer Graphics

Basics of computer literacy. Basics of file systems, image formats and compression methods. Basics of raster and vector images and related software. Basic application of design principles to digital medium. *Credit units: 3 ECTS Credit Units: 6. Aut (L. Y. İnce) Spr (L. Y. İnce)*

CS 154 Introduction to Web Design

Basics of web sites with digital text, image, video and links. Basics of Hyper Text Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript (JS). Basics of web browsers. Basics of web page design and interaction principles. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 153. Spr (L. Y. İnce, E. Tunalı)*

CS 155 Interactive Media Design and Development

Practical and theoretical fundamentals of design and the implementation of interactive multimedia systems. Basic principles of human-computer interaction and interaction design, including gaming, live audio and video processing, motion detection, gesture recognition, tangible media, and interactive spaces. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 154. Aut (L. Y. İnce)*

CS 201 Fundamental Structures of Computer Science I

Introduction to abstract data types. Lists. Stacks. Queues. Implementing abstract data types in C++. Recursion as a problem solving method for data abstraction. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 102. Aut (A. E. Çiçek, Ç. Gündüz Demir) Spr (A. E. Çiçek, Ç. Gündüz Demir)*

CS 202 Fundamental Structures of Computer Science II

Abstract data types. Algorithmic efficiency. Recursion. Sorting. Trees. Tables. Priority queues. Graphs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 201 and MATH 132. Aut (E. Ayday, U. Doğrusöz) Spr (S. Aksoy, U. Doğrusöz)*

CS 223 Digital Design

Number systems, Binary numbers, Logic levels, transistors, gates, Boolean expressions. Combinational logic: Boolean algebra, simplification of Boolean expressions. Logic minimization with Karnaugh maps, don't-care conditions. Introduction to System Verilog. Combinational building blocks, multiplexers, decoders, propagation delays, glitches. Verilog modeling. Sequential logic: SR latch, D-latch, D flip-flop, synchronous sequential

circuits. Finite State Machine design, Moore and Mealy models, state encodings, timing of sequential circuits. Verilog modeling of sequential circuits. Signed numbers, Adders, ALU, comparators. Registers, register files. Counters, timers. High level state machines, RTL design, RAM, ROM. FPGA, programmable processors. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CS 101. Aut (M. Baray, M. M. Özdal, Ö. Öztürk) Spr (M. Baray)*

CS 224 Computer Organization
MIPS instruction set and registers. Branching and procedure calls, addressing modes. Single cycle processor datapath. Single cycle control. Multicycle processor datapath. Multicycle control. Exceptions, interrupts. Pipelining. Pipelining hazards and stalls. Superscalar processor, out of order execution, Register renaming. IA-32 architecture. Memory system performance and hierarchy, caches. Memory system optimization, virtual memory. Memory mapped I/O. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CS 223. Aut (F. Can) Spr (F. Can, Ö. Öztürk, W. Sawyer)*

CS 281 Computers and Data Organization
File organization and indexing. Sequential and direct file processing techniques. Indexed and hash files. Database management systems. Relational data model. Relational algebra and calculus. SQL query language. Database design. Database application development. Recovery and concurrency. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 101 or CS 114. Aut (U. Güdükbay, Ö. Ulusoy) Spr (F. Can)*

CS 299 Summer Training I
Conducted in a company setting with involvement in real projects for a minimum of four weeks (20 working days). Application of knowledge and skills learned at school to solve engineering problems related to computer systems in the real-world. Familiarization with professional and ethical responsibility while working in multidisciplinary teams. Understanding the impact of engineering solutions in a global, economic, environmental and societal context. Learning to find relevant resources to access information. Observation of the use of contemporary tools, techniques, standards and methods. Preparing technical documentation. *Credit units: None ECTS Credit Units: 6, Prerequisite: CS 202. Aut (Staff) Spr (Staff)*

CS 315 Programming Languages
Language evaluation criteria. Describing syntax and semantics. Tools for constructing lexical and syntactical analyzers. Names, bindings, type checking, and scopes. Data types. Expressions and the assignment statement. Statement-level control structures. Subprograms. Abstract data types. Concurrency. Exception handling. Functional programming languages. Logic programming languages. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 201. Aut (R. G. Cinbiş, B. Gedik) Spr (B. Gedik, E. K. Tabak)*

CS 319 Object-Oriented Software Engineering
Principles and stages of object-oriented software development. Overview of object-oriented software modeling with Unified Modeling Language and exposure to CASE tools for object-oriented development. Experience with such tools and environments through programming assignments and/or a term project. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CS 201. Aut (U. Doğrusöz, B. Güngören) Spr (U. Doğrusöz, B. Güngören)*

CS 342 Operating Systems
Introduction to computer operating systems; processes, threads, interprocess communication, process scheduling, process synchronization, deadlocks, memory management and virtual memory, file systems - interface and implementation, mass-storage structure and management, input/output systems, examples from operating systems such as Linux and Windows. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CS 202 and CS 224. Aut (İ. Körpeoğlu) Spr (İ. Körpeoğlu, Ö. Öztürk)*

CS 353 Database Systems
Relational data model. Entity/Relationship model. Relational Algebra. Structured Query Language, SQL. Relational database design. Tree-structured and hash-based indexing. Query processing and optimization. Transaction management, concurrency control and recovery issues in database systems. Development of a relational database application as a term project. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 202. Aut (A. E. Çiçek) Spr (Ö. Ulusoy)*

CS 399 Summer Training II
Conducted in a company setting with involvement in real projects for a minimum of four weeks (20 working days). Application of knowledge and skills learned at school to solve engineering problems related to computer systems in the real-world. Familiarization with professional and ethical responsibility while working in multidisciplinary teams. Understanding the impact of engineering solutions in a global, economic, environmental and societal context. Learning to find relevant resources to access information. Observation of the use of contemporary tools, techniques, standards and methods. Preparing technical documentation. *Credit units: None ECTS Credit Units: 6, Prerequisite: CS 299. Aut (Staff) Spr (Staff)*

CS 411 Software Architecture Design
Basic concepts, methods and techniques for designing software architectures; rationale for software architecture design, modeling software architecture design, architectural styles/patterns, architectural requirements analysis,

comparison and evaluation of architecture design methods, synthesis-based software architecture design, software product-line architectures, domain modeling, domain engineering and application engineering, software architecture implementation, evaluating software architecture designs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 319. Aut (B. Güngören)*

CS 413 Software Engineering Project Management

Software development process models. Project planning techniques, developing an architecture decomposition view, Work Breakdown Structure (WBS), creating project schedule, resource profiles and Gantt charts. Software project effort and cost estimation techniques and software product size measures. Software metrics, measuring and controlling software products and processes. Risk management, teamwork, leadership, communication and organisational issues. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 319. Aut (H. Altunel) Spr (B. Akporay)*

CS 415 Software Product Line Engineering

Software reuse, SPLE methods, domain engineering, application engineering, commonality and variability analysis, variability modeling, reference architecture, application architecture, software product portfolio management, software product line scoping, testing in SPLE, organization structures for SPLE, risks of SPLE, adoption strategies for SPLE. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 319. Spr (E. Tüzün)*

CS 421 Computer Networks

Introduction to computer networks and the Internet. Application layer: HTTP, FTP, SMTP, DNS. Socket programming; client/server model; peer-to-peer networking. Transport layer protocols: TCP, UDP. Congestion control and congestion control in TCP. Network layer protocols: IP. Internet routing. Link layer: error control, multiple access. Data link layer protocols: Ethernet. Local area networks. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (CS 102 or CS 112 or CS 114) and (MATH 230 or MATH 250 or MATH 255). Aut (T. Dayar, E. Karaşan) Spr (E. Karaşan, C. Tekin)*

CS 425 Algorithms for Web-Scale Data

PageRank algorithm, locality sensitive hashing, map-reduce model, online algorithms for web advertising, recommender systems, frequent itemset counting, and social network analysis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 202. Aut (M. M. Özdal)*

CS 426 Parallel Computing

Parallel programming platforms: distributed memory, shared address space, accelerators. Principles of parallel algorithm design: decomposition techniques, tasks and interactions, mapping for load balancing, interaction overheads, parallel algorithm models (data-parallel, task-graph, work-pool, master-slave, pipeline). Basic communication operations. Analytical modeling of parallel programs: sources of parallel programming overhead, performance metrics for parallel systems, scalability of parallel systems (speedup, efficiency, cost, overhead function, isoefficiency, cost optimality, degree of concurrency, granularity), parallel programming paradigms: programming using MPI, programming shared address space platforms (threads, OpenMP, Intel Thread Building Blocks), programming GPU's (CUDA, OpenCL). Parallel computing kernels: matrix transposition, matrix-vector multiplication, matrix-matrix multiplication, matrix partitioning schemes for load-balancing and communication minimization. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Öztürk)*

CS 432 Machine-to-Machine (M2M) Systems

Introduction to Machine-to-Machine (M2M), Internet of Things (IoT), M2M node manufacturing, M2M node programming, sensors and sensor programming, Global System for Mobile (GSM) modules, GSM programming, Global Positioning System (GPS) module and GPS programming, Smart Cities, Intelligent Operations, End-to-End (E2E) testing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 342. Spr (Ö. Öztürk)*

CS 443 Cloud Computing and Mobile Applications

Hands-on introduction to cloud computing and developing mobile applications. Cloud computing services and infrastructures (virtualization, datacenter networking, wide-area storage/replication, distributed file systems), development tools (MapReduce, Hadoop, OpenStack), fundamental tradeoffs and algorithms (CAP theorem, NoSQL systems, Paxos) and applications (big-data analysis, real-time data systems, large-scale webservices). iOS and Android programming and programming to develop mobile applications with backend storage and computing components running on the cloud (Amazon AWS, Microsoft Azure, or Google AppEngine). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 342.*

CS 453 Application Lifecycle Management

Application lifecycle management process, software development in large-scale IT organizations, software development productivity, agile software development, project management, requirements management, architecture and design, software development, software test management, software configuration management, change management, and build management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 319. Aut (E. Tüzün)*

CS 458 Software Verification and Validation
Introduction and motivation for verification and validation; software testing overview, fundamentals of test process, general principles of testing, definitions and concepts, testing in software development life cycle, types of testing, levels of testing, test metrics; software inspection and code reviews, technical reviews, pair programming; specification-based testing, input-based partitioning, equivalence class partitioning, boundary value analysis, state transition test, decision table technique, used case testing; structural testing, graph coverage, logic coverage, syntax-based testing, statement coverage, branch coverage, condition coverage, path coverage, instrumentation and tool support; system, acceptance, and regression testing; model-based testing; run-time verification; model-checking, temporal logic in finite-state verification, computational tree logic; safety analysis and software reliability engineering. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 319.*

CS 461 Artificial Intelligence
Semantic nets and description matching. Generate and test, Means-ends analysis, and problem reduction. Nets and basic search. Nets and optimal search. Trees and adversarial search. Rules and rule chaining. Rules, substrates, and cognitive modeling. Frames and inheritance. Frames and commonsense. Numeric constraints and propagation. Symbolic constraints and propagation. Logic and resolution proof. Backtracking and truth maintenance. Planning. Learning by analyzing differences. Learning by explaining experience. Learning by correcting mistakes. Learning by recording cases. Learning by managing multiple models. Learning by building identification trees. Learning by training neural nets. Learning by training perceptrons. Learning by training approximation nets. Learning by simulating evolution. Recognizing objects. Describing images. Expressing language constraints. Responding to questions and commands. *Credit units: 3 ECTS Credit Units: 6. Spr (V. Akman)*

CS 464 Introduction to Machine Learning
Probability and statistics review, estimation (maximum likelihood, maximum a posterior), loss functions, model selection, feature representation, feature selection, naive Bayes, linear discriminant analysis, logistic regression, k-nearest neighbor, support vector machines, deep learning, linear regression, decision trees, ensemble methods (bagging, random forest, boosting) and clustering. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (CS102 or CS 114) and (MATH 225 or MATH 220 or MATH 241) and (MATH 230 or MATH 255 or MATH 260) . Aut (R. G. Cinbiş) Spr (Ö. Taştan Okan)*

CS 465 Computer Graphics I
Graphics systems and models. Graphics programming. Interaction and animation. Geometric objects and transformations. Viewing. Lighting and shading. Rasterization: from geometry to pixels. Modeling and hierarchy. Curves and surfaces. Advanced rendering. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CS 201. Spr (U. Güdükbay)*

CS 470 Introduction to Applied Cryptography
Fundamental concepts of cryptography, block ciphers, stream ciphers, cryptographic hash functions, public key encryption, digital signatures, key distribution protocols, authentication systems, security protocol pitfalls, Kerberos, Internet cryptography, IPsec, SSL/TLS, e-mail security. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 132.*

CS 473 Algorithms I
Asymptotic notation. Divide and conquer approach. Solving recurrences: substitution method, master method. Bounding summations. Analysis of randomized quicksort. Medians and order statistics. Heaps: heapsort, priority queues. Sorting in linear time. Dynamic programming. Greedy algorithms. Amortized analysis: aggregate, accounting and potential methods, dynamic tables. Elementary graph algorithms: breadth-/depth-first search, topological sort, strongly connected components. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 202. Aut (C. Aykanat) Spr (M. M. Özdal)*

CS 476 Automata Theory and Formal Languages
Finite automata, regular expressions, regular languages and their properties, the pumping lemma. Context free grammars and languages, normal forms, pushdown automata, the pumping lemma for the CFLs. Turing machines and their properties. Decidability and undecidable languages. Complexity theory, NP-completeness. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 201. Aut (C. Alkan) Spr (C. Alkan)*

CS 481 Bioinformatics Algorithms
Biomolecular sequence analysis, Needleman/Wunsch and Smith/Waterman alignment algorithms. Pattern matching algorithms and sequence similarity search. Phylogenetic trees, distance based hierarchical clustering and protein and genome sequence database search. RNA secondary structure prediction problem. Exact and approximation algorithms, heuristics, stochastic context-free grammars, hidden Markov models. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Alkan)*

CS 484 Image Analysis
Image acquisition, sampling and quantization. Spatial domain processing. Image enhancement. Texture analysis. Edge detection. Frequency domain processing. Color image processing. Mathematical morphology. Image segmentation and region representations. Statistical and structural scene descriptions. Applications.

Credit units: 3 ECTS Credit Units: 6, Prerequisite: (CS 102 or CS 114) and (MATH 225 or MATH 220 or MATH 241) and (MATH 230 or MATH 255 or MATH 260). Aut (S. Aksoy) Spr (R. G. Cinbiş)

CS 490 Introduction to Research in Computer Engineering and Science

Introduction to research techniques in computer engineering and science. Working on a research topic as an independent study, under the supervision of a faculty member. Preparation of academic papers to present the results of the study. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 315 and CS 319 and CS 342 and CS 353 and EEE 391 and ENG 401 and GE 301 and MATH 230. Aut (H. A. Güvenir) Spr (H. A. Güvenir)*

CS 491 Senior Design Project I

Capstone design project. Technical and innovative group project emphasizing engineering design principles on a specific topic in any field of computer science and engineering. Documentation on the specifications, analysis and the high level design of the project. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 202 and CS 319. Aut (Staff) Spr (Staff)*

CS 492 Senior Design Project II

Continuation of the capstone design project started in the CS 491 course, with the same team. Technical and innovative group project emphasizing engineering design principles on a specific topic in any field of computer science and engineering. Documentation on the low level design and the implementation of the project and an oral presentation, including a demo. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 491. Aut (Staff) Spr (Staff)*

CS 502 Algorithms II

Minimum spanning trees: algorithms of Kruskal and Prim. Single-source shortest paths: Dijkstra's and Bellman-Ford algorithms, shortest paths in directed acyclic graphs. All-pairs shortest paths: Floyd-Warshall and Johnson's algorithms. Parallel algorithms: pointer jumping, CRCW versus EREW, Brent's theorem, prefix computation. Polynomials and the FFT. String matching: Rabin-Karp algorithm, string matching with finite automata, Knuth-Morris-Pratt and Boyer-Moore algorithms. Elementary computational geometry algorithms. Approximation algorithms: vertex-cover, traveling salesman and subset-sum problems. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 513 Implications of the Internet

Basic concepts and history of the Internet. Origins of the information society. Access to information in the networked world. The Internet as a communications medium. Publishing on the Internet. Selling goods and services on the Internet. Entertainment on the Internet. Educational potential of the Internet. Security and privacy issues. Censorship and politics of the Internet. Tensions between local vs. global, individual vs. corporate, and democracy vs. authoritarianism in the context of Internet. *Credit units: 3 ECTS Credit Units: 7.5. Spr (V. Akman)*

CS 527 Advances in Switching Networks

Circuit switching and call models. Types of network connections. Unicast and multicast network models. Cellular permutation arrays. Rearrangeable networks. Benes and Waksman networks. Clos and Cantor Nonblocking networks. Expanders, concentrators, superconcentrators, generalizers. Bassalygo-Pinsker networks. Generalized connectors. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Y. Oruç)*

CS 528 Advances in Switching Networks II

Packet switching models. Buffered concentrators. Buffered superconcentrators, generalizers. Buffered unicast networks. Buffered multicast networks. Packet routing and scheduling algorithms. Quantum information processing. Quantum packet switching. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Y. Oruç)*

CS 531 Advances in Data Management Research

High dimensional data management (indexing, similarity search, data analytics); bitmap indexing (compression, query processing), data streams, mining multimedia, time-series, and biological data. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 533 Information Retrieval Systems

Introduction to information storage and retrieval (IR). IR vs. DBMS. User perspective, search models, evaluation of IR systems. Formal IR models. Data structures and techniques including, inverted files, signature files, information filtering, clustering and cluster-based retrieval, hypertext and multimedia systems. IR and the Internet, browsing strategies, search engines, web robots and intelligent agents. *Credit units: 3 ECTS Credit Units: 7.5. Aut (F. Can)*

CS 541 Chip Multiprocessors

Introduction to chip multiprocessing (CMP), multicore and manycore architectures. Instruction level parallelism. Explicit parallelism: Shared instruction processors (SIMD) shared sequencer processors (VLIW), shared network processors (MPP), shared memory processors (SMP). The march to multicore and manycore: Power efficiency, DRAM access latency. Network interfaces: Network topologies, buses, switches, multistage networks, hypercubes. Parallel programming: PThreads, MPI, multicore programming, OpenMP. Parallel programming concepts: Coverage, granularity, locality. Graphics processing unit (GPU): Hardware overview, performance, software environment, programming models, GPU Memory, CUDA, OpenCL. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 545 Fundamentals of Stream Processing
Fundamental concepts of stream processing, data flow programming (static, dynamic, and nested composition), large-scale streaming application development (modularity, extensibility, distribution, debugging, and visualization), software architecture for streaming middleware, design principles and patterns for streaming applications (including non-functional topics such as parallelization, load balancing, load shedding, and fault tolerance), and basic stream processing and mining algorithms. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 550 Machine Learning
Introduction to basic machine learning concepts and algorithms. Bayesian decision theory. Decision trees. Artificial neural networks. Evaluation of classification algorithms. Unsupervised learning and clustering. Reinforcement learning. Genetic algorithms. Recent topics in machine learning. Ensemble learning. Cost-sensitive learning. Active learning. Deep learning. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ç. Gündüz Demir)*

CS 551 Pattern Recognition
Basics of statistical and structural pattern recognition. Feature extraction and selection. Bayesian decision theory. Parametric and non-parametric density estimation. Clustering. Unsupervised and supervised learning. Classifiers and discriminant functions. Ensemble methods. Syntactic pattern description. Applications. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. Aksoy)*

CS 557 Computational Systems Biology
Short introduction to molecular biology and systems biology, gene; protein, function, biological data types; machine learning overview; analyzing and reconstructing biological networks, inferring protein signaling networks, inferring transcriptional regulatory networks, predicting host-pathogen networks; metabolic networks; regulatory motif finding; comparing and searching interaction networks, dynamical networks; annotating and predicting gene function. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. E. Çiçek)*

CS 559 Deep Learning
Overview of machine learning and its applications. Loss functions, numerical optimization and back-propagation. Fundamentals of feedforward neural networks. Modern architectures and techniques for training deep networks. Convolutional neural networks: basics, visualization, and techniques for efficient spatial localization in images. Recurrent neural networks and their variants. Applications of recurrent neural networks in language and image understanding, and image captioning. Recent advances in generative models learning, generative adversarial networks and variational auto encoders. Unsupervised and self-supervised representation learning. Deep reinforcement learning. *Credit units: 3 ECTS Credit Units: 7.5. Spr (R. G. Cinbiş)*

CS 564 Computational Geometry
Introduction: algorithmic background, data structures, geometric preliminaries, models of computation. Geometric searching: point-location problems, range-searching problems. Convex hulls: problem statement and lower bounds, convex hull algorithms in the plane, Graham's scan, Jarvis's march, Quickhull techniques, divide-and-conquer algorithms, dynamic convex hull, convex hull in 3D. Proximity: a collection of problems, a computational prototype: element uniqueness, lower bounds, the closest-pair problem: a divide-and-conquer approach, the Voronoi diagram, proximity problems solved by the Voronoi diagram. Triangulation: planar triangulations, Delaunay triangulation. Intersections: application areas, planar applications: intersection of convex polygons, intersection of star-shaped polygons, intersection of line segments, 3D applications: intersection of 3D convex polyhedra, intersection of half-spaces. *Credit units: 3 ECTS Credit Units: 7.5. Spr (U. Güdükbay)*

CS 565 Application of Computer Graphics
Use of computer graphics in various engineering fields. Three dimensional modeling and representation. Color, shading and lighting methods. Representation of surfaces. Graphical databases, graphics standards. Hidden surface problem, motion and animation. Texture mapping, controlled deformations. Previous knowledge of computer graphics is required. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Özgüç)*

CS 568 Advanced Topics in Computer Graphics
Advanced topics in computer graphics. Physical simulation of natural phenomena. Cloth and membrane simulation. Hydrodynamics (fire and liquid) simulation and rendering. Motion capture. Deformation and fracture simulation. Particle systems. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Özgüç)*

CS 573 Algorithms I
Asymptotic notation. Divide and conquer: Strassen's algorithm for matrix multiplication, quicksort. Solving recurrences: substitution method, master method. Bounding summations. Randomized quicksort: analysis. Medians and order statistics. Heaps: heapsort, priority queues. Sorting in linear time. Dynamic programming: matrix-chain multiplication, longest common subsequence, O/1 Knapsack problem, resource allocation problem. Greedy algorithms: activity selection problem, Hufmann codes, task scheduling problem. Amortized analysis: aggregate, accounting and potential methods, dynamic tables. *Credit units: 3 ECTS Credit Units: 7.5. Aut (C. Aykanat) Spr (M. M. Özdal)*

CS 577 Data Privacy
Introduction to privacy, economics and incentives, crypto-based solution for privacy, hiding data from the database user, hiding access patterns from the database owner, anonymous routing and TOR, privacy in online social networks, privacy in cellular and Wi-Fi networks, location privacy, privacy in e-cash systems, privacy in e-voting, genomic privacy. *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Ayday)*

CS 590 Research Seminar I
Presentation on the preliminary results of the graduate thesis work. Participation in the presentations given by other classmates. *Credit units: None ECTS Credit Units: 1. Aut (V. Akman, A. E. Çiçek) Spr (Ç. Gündüz Demir, Ö. Taştan Okan)*

CS 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

CS 612 Algorithms for Electronic Design Automation
Graph partitioning heuristics, floorplanning models and algorithms, simulated annealing, placement algorithms, routing topology generation, global routing, network flow formulation. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 683 Cloud Computing
Cloud computing introduction, definition and types; fundamental tradeoffs and distributed algorithms, CAP theorem, consensus, Paxos; cloud computing platforms and infrastructures, datacenter networking, virtualization; algorithms, resource allocation, load-balancing, scheduling; distributed file systems, wide-area storage, NoSQL, replication; programming frameworks, MapReduce; practical systems, Dynamo, BigTable, Dryad, Hadoop; cloud computing providers, applications and services. *Credit units: 3 ECTS Credit Units: 7.5.*

CS 690 Research Seminar II
Presentation on the preliminary results of the Ph.D. thesis work. Participation in the presentations given by other classmates. *Credit units: None ECTS Credit Units: 1. Aut (V. Akman, A. E. Çiçek) Spr (Ç. Gündüz Demir, Ö. Taştan Okan)*

CS 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (Staff) Spr (Staff)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

O. Arıkan (Chair), N. Akar, A. Altıntaş, E. Arıkan, A. Atalar, E. Atalar, O. Aytür, B. Barshan, A. E. Çetin, T. Çukur, H. V. Demir, T. M. Duman, V. B. Ertürk, S. Gezici, Y. Z. İder, F. Ö. İlday, E. Karaşan, S. S. Kozat, H. Köymen, M. A. Kutay, Ö. Morgül, L. Onural, H. Özaktaş, E. Özbay, H. Özbay, A. B. Özgüler, E. Ü. Sarıtaş, C. Tekin.

Part-time: A. T. Koç, H. Töreyin, İ. E. Ungan.

The Department of Electrical and Electronics Engineering offers programs that lead to B.S., M.S., and Ph.D. degrees.

UNDERGRADUATE PROGRAM

Electrical and Electronics Engineering Department has the vision to provide a program of the highest quality to produce leader engineers who can address the challenges of the new century and excel at an international level.

With this vision, the mission is to provide our graduates with the knowledge and skills needed for high quality engineering work as well as advanced engineering research and to equip them with a broad intellectual spectrum in order to prepare them for diverse and competitive career paths.

As individuals and as members of a team, our majors will have successful careers in the academic environment, industrial or government organizations. They will be able to pursue advanced degrees in diverse fields and continue professional development. We prepare our graduates to be able to function in national/international/multi-cultural corporations and organizations.

To meet these objectives, our undergraduate program is built on a strong analytical foundation in mathematics, science and engineering courses. Upon this foundation, core electrical and electronics engineering background is established. A variety of elective courses are offered in order to serve the technical needs and objectives of students. The program is enriched by providing the student with courses in social sciences, humanities and economics to broaden their intellectual spectrum. In addition, our students are exposed to the professional life with the help of two summer practices. Also, a capstone design sequence is offered to students in the senior year to consolidate their technical knowledge by developing an engineering solution to a problem with multiple realistic constraints.

The Electrical and Electronics Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 101	Algorithms and Programming I	4 / 7
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
PHYS 101	General Physics I	4 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CS 102	Algorithms and Programming II	4 / 7
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
PHYS 102	General Physics II	4 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
EEE 102	Introduction to Digital Circuit Design	4 / 7
EEE 211	Analog Electronics	4 / 7

GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MATH 241	Engineering Mathematics I	4 / 7

Spring Semester Credits / ECTS Credits

EEE 202	Circuit Theory	4 / 7
EEE 212	Microprocessors	4 / 7
GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6
MATH 242	Engineering Mathematics II	4 / 6
	Unrestricted Elective	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

EEE 299	Summer Training I	- / 6
EEE 313	Electronic Circuit Design	4 / 7
EEE 321	Signals and Systems	4 / 7
EEE 351	Engineering Electromagnetics	3 / 6
	Humanities or Social Science Elective	3 / 6
	Mathematics / Science Elective	3 / 6

Spring Semester Credits / ECTS Credits

EEE 342	Feedback Control Systems	3 / 6
ENG 401	Technical Report Writing and Presentation	2 / 4
MATH 255	Probability and Statistics	4 / 7
	Basic Engineering Elective	3 / 6
	EEE Elective	3 / 6
	Humanities or Social Science Elective	3 / 6

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

EEE 399	Summer Training II	- / 6
GE 301	Science Technology and Society	2 / 3
	EEE Elective	3 / 6
	EEE Restricted Elective	3 / 6
	Mathematics / Science Elective	3 / 6
	Project Elective-I	3 / 6

Spring Semester Credits / ECTS Credits

GE 304	Technology Society and Professional Development Seminar	1 / 1
	EEE Expanded Electives (2)	6 / 12
	EEE Restricted Elective	3 / 6
	Project Elective-II	3 / 6
	Unrestricted Elective	3 / 6

PROJECT ELECTIVE-I

EEE 491	Electrical and Electronics Engineering Design I	3 / 6
EEE 493	Industrial Design Project I	3 / 6
GE 401	Innovative Product Design and Development I	3 / 6

PROJECT ELECTIVE-II

EEE 494	Industrial Design Project II	3 / 6
EEE 495	Electrical and Electronics Engineering Design II	3 / 6
GE 402	Innovative Product Design and Development II	3 / 6

EEE ELECTIVE

CS 421	Computer Networks	3 / 6
CS 423	Computer Architecture	3 / 6

EEE 314	Digital Electronics	4 / 7
EEE 352	Applied Electromagnetics	3 / 6
EEE 411	Telecommunication Electronics	4 / 7
EEE 412	Microwave Electronics	4 / 7
EEE 414	Introduction to CMOS VLSI Design	3 / 6
EEE 415	Analog CMOS Integrated Circuits	3 / 6
EEE 418	Principles of Electronic Devices	4 / 7
EEE 419	Power Electronics	3 / 6
EEE 424	Digital Signal Processing	4 / 7
EEE 428	Optics	4 / 7
EEE 429	Photonics	3 / 6
EEE 431	Telecommunications I	3 / 6
EEE 432	Telecommunications II	3 / 6
EEE 436	Wireless Networking Technologies and Applications	3 / 6
EEE 442	Nonlinear Systems	3 / 6
EEE 443	Neural Networks	3 / 6
EEE 444	Robust Feedback Theory	3 / 6
EEE 446	Control and Optimization of Stochastic Systems	3 / 6
EEE 447	Introduction to Robotics	3 / 6
EEE 451	Microwave Engineering	4 / 7
EEE 452	Antenna Engineering	4 / 7
EEE 473	Medical Imaging	3 / 6
EEE 474	Foundations of Magnetic Resonance Imaging	3 / 6
EEE 475	Medical Image Reconstruction and Processing	3 / 6
EEE 480	Advanced Optoelectronics: Innovative Design	3 / 6
EEE 481	Biomedical Signals and Instrumentation	3 / 7
EEE 482	Computational Neuroscience	3 / 6
EEE 485	Statistical Learning and Data Analytics	3 / 6
EEE 492	Senior Project	3 / 6
EEE 497	Digital Signal Processing Laboratory	3 / 6

Students may take at most two EEE 500 or higher coded courses.

GRADUATE PROGRAM

Graduate programs focus on those fields which are heavily in demand worldwide. Current research areas are signal and image processing, electronics, optics, acoustics, electromagnetics, nanotechnology, robotics, telecommunications and networks, biomedical engineering, neuroscience, and system and control theory. The department emphasizes research with the support of excellent laboratories, computing facilities, and libraries. These facilities are continuously upgraded through various grants from national and international resources. Currently there are image processing, signal processing, optics, electronics, telecommunications, robotics and control, microwaves and antennas, nanophotonics, and biomedical laboratories.

Master of Science in Electrical and Electronics Engineering

Admission: All applicants are required to have a B.S. degree in electrical and electronics engineering, or in a related field of science or engineering. Students with a B.S. degree in areas other than electrics and electronics engineering may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
EEE 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	Core graduate course	3 / 7.5
	EEE Graduate Seminar	- / 1
	Graduate Elective	3 / 7.5
	Restricted graduate electives (5)	15 / 37.5

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Core Graduate Courses: EEE 501,EEE 525,EEE 533,EEE 560,EEE 603

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

Restricted Graduate Elective Courses: All 5XX or higher level CS, EEE, IE, MATH, ME , PHYS coded courses with at least 3 credits and MSN 551.

Master of Science in Telecommunications and Networking

Non-thesis M.S. program on Telecommunications and Networking (MSTN) is an interdisciplinary program specifically focusing on the constantly evolving field of information technologies. Graduates of this program are expected to find employment in a broad range of businesses including telecommunications equipment/software manufacturers, internet service providers, wireless network operators, mobile application development businesses, telecommunication chip manufacturers, telecommunications regulatory agencies, and military telecommunication systems development companies. The program is intended for recent graduates as well as engineers who are currently employed by these businesses/organizations and wish to obtain a specialized advanced degree in telecommunications and networking. Students in this program will learn how to become leader engineers in the ever changing world of global information networking, wireless/optical telecommunication systems and technologies. In order to get the MSTN degree, students are required to successfully complete courses from a wide range of subjects in telecommunications, networking, computer science, operations research, management and law related to information technologies.

Admission: All applicants are required to have a B.S. degree in electrical and electronics engineering, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: Students are expected to complete at least ten courses equivalent to at least 30 credit units of course work. Up to three of these courses can be selected from the undergraduate courses in related fields. In addition to these courses, the students should also complete a one-semester project under the supervision of a faculty member in the Department of Electrical and Electronics Engineering. The maximum duration to complete the MSTN program is three semesters.

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

CURRICULUM

Courses		Credits / ECTS Credits
EEE 530	Digital Communications Theory	3 / 7.5
EEE 533	Random Processes	3 / 7.5
EEE 536	Internet Architecture and Protocols	3 / 7.5
EEE 596	Graduate Research Project in Telecommunications and Networking	- / 22.5
	Broad Elective	3 / 6
	Technical Graduate Electives (2)	6 / 15
	Technical Graduate Elective or Non-Technical Graduate Electives (2)	6 / 12
	Technical Graduate Elective or Undergraduate electives (2)	6 / 12

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Broad Elective Courses: Selected 4XX or higher level CS, EEE, LAW, MATH and MBA coded courses with at least 2 credits.

Technical Graduate Elective Courses: Selected 5XX or higher level CS, EEE and IE coded courses with at least 3 credits.

Technical Graduate Elective or Non-Technical Graduate Elective Courses: Selected 5XX or higher level CS, EEE, IE, LAW and MBA coded courses with at least 3 credits.

Technical Graduate Elective or Undergraduate Elective Courses: Selected 4XX or higher level CS, EEE, IE and MATH coded courses with at least 3 credits and MATH 255.

Doctor of Philosophy in Electrical and Electronics Engineering

Admission: All applicants are required to have a M.S. degree with thesis in electrical and electronics engineering, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
EEE 699	Ph.D. Dissertation	- / 140
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
	EEE Graduate Seminar	- / 1
	Graduate Electives (4)	12 / 30
	Restricted graduate electives (3)	9 / 22.5

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Core Graduate Courses: EEE 501,EEE 525,EEE 533,EEE 560,EEE 603

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

Restricted Graduate Elective Courses: All 5XX or higher level CS, EEE, IE, MATH, ME , PHYS coded courses with at least 3 credits and MSN 551.

COURSE DESCRIPTIONS

EEE 102 Introduction to Digital Circuit Design
Number systems and conversions, data representation, analysis and design of combinational logic circuits, Boolean algebra, logic gates, minimization techniques, HDL, sequential logic, flip-flops, registers, clocked circuits, clock generation, counters, shift registers, arithmetic circuits. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CS 101. Aut (E. Atalar, C. Tekin) Spr (S. S. Kozat, M. A. Kutay)*

EEE 202 Circuit Theory
Resistive circuits. Matrix formulation of KCL, KVL. Two ports, circuit theorems, Thevenin and Norton equivalent circuits, superposition. Simple nonlinear circuits. Operational amplifiers. 1st and 2nd order circuits. General circuit analysis. Sinusoidal steady state. Application of Laplace transform to circuits. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 211 and MATH 241. Aut (E. Ü. Sarıtaş) Spr (Ö. Morgül, E. Ü. Sarıtaş)*

EEE 211 Analog Electronics
Design of an HF radio transceiver using the following topics in the frequency range 100 Hz - 30 MHz: Block diagram concept, passive electronic components (R, L, C, diode, crystals, etc.) and integrated circuits, as active devices; filters, power supplies, audio amplifiers, speakers, microphones, radio amplifiers, oscillators, mixers, noise intermodulation, and antennas. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: PHYS 102. Aut (Y. Z. İder, H. Köymen) Spr (Y. Z. İder, H. Köymen)*

EEE 212 Microprocessors
Introduction to microprocessors and microcontrollers. 8051 microcontroller. 8051 Assembly Language. Input/output interfacing. Timers. Serial Port. Interrupt programming. External Memory Interfacing. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: (EEE 102 or CS 223) and CS 102. Aut (N. Akar) Spr (N. Akar, M. A. Kutay)*

EEE 299 Summer Training I
A minimum of four weeks summer practice in a company working on fundamental areas of electrical and electronics engineering; observation of company in its original settings and working on projects relevant to the company; submission of a written report. *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

EEE 313 Electronic Circuit Design
Diode circuits. Transistors and biasing. Basic transistor amplifiers. Frequency response. Transistor current sources. Differential amplifiers. Multistage amplifiers. Digital circuits and logic gates. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 202 and EEE 211. Aut (F. Ö. İlday) Spr (A. Dana)*

EEE 314 Digital Electronics
MOSFET digital inverters (VTC & Transients). Principles of CMOS circuits and logic layout design. CMOS Gate Circuits and the Analysis. Junction diodes, switching transient, and diode digital circuits. BJT switching transient & Charge-control analysis. Digital DTL & TTL GateCircuits. ECL, Schottky) I^2L, & Bi-CMOS Gates. Regenerative Logic Circuits. Semiconductor Memories and the Circuit Analysis. Sample and Hold Circuits and Data Converters. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 212 and EEE 313. Spr (H. Töreyin)*

EEE 321 Signals and Systems
Basic discrete and continuous signals and systems, linear time-invariant systems, Fourier analysis for continuous and discrete signals and systems, filtering, sampling of continuous time signals, FIR and IIR filters, z-transform, elementary modulation techniques. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 202. Aut (H. Özaktaş) Spr (H. Özaktaş)*

EEE 342 Feedback Control Systems
Use of Feedback: open loop and closed loop control systems. Mathematical Models of Dynamical Systems: State equations, transfer functions. Block diagram manipulations. Bounded Input Bounded Output Stability, Routh-Hurwitz and Nyquist stability test. Relative stability and stability margins. Bode plots. The Root locus method. Design of Feedback controllers. Sensitivity and robustness. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321 and MATH 242. Aut (Ö. Morgül) Spr (H. Özbay, A. B. Özgüler)*

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

EEE 351 Engineering Electromagnetics
Review of vector analysis. Static electric fields, electric potential, boundary conditions and capacitances. Steady electric currents. Static magnetic fields, vector magnetic potential, boundary conditions and inductances. Faraday's law of electromagnetic induction. Maxwell's equations. Time-harmonic fields. Plane electromagnetic power and Pointing vector. Reflection of plane waves from plane boundaries. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 242 and PHYS 102. Aut (V. B. Ertürk) Spr (T. Çukur)*

EEE 352 Applied Electromagnetics
Review of static electric and magnetic fields. Dielectric and magnetic materials. Electrostatic and magnetostatic energy and forces. Magnetic circuits, transformers and electromagnetic energy conversion. Basic of electric machinery. Review of Maxwell's equations and plane waves. Reflection and transmission of plane waves at plane boundaries. Transmission lines, Smith chart and impedance matching. Waveguides and cavity resonators. Electromagnetic radiation and antennas. Antenna arrays, effective aperture, Friis transmission formula and radar equation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 351. Spr (E. Atalar)*

EEE 391 Basics of Signals and Systems
Basics of discrete- and continuous-time signals and systems, sinusoids and complex exponentials, phasor representation, spectrum representation, sampling and aliasing, Shannon/Nyquist sampling theorem, finite impulse response (FIR) filters, frequency response of FIR filters, z-transforms, infinite impulse response (IIR) filters, continuous-time signals and systems, linearity, time-invariance, linear time-invariant (LTI) systems, convolution, causality, stability, frequency response of systems, continuous-time Fourier transform. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102. Aut (L. Onural) Spr (B. Barshan, H. Özaktaş)*

EEE 399 Summer Training II
A minimum of four weeks summer practice in a company working on fundamental areas of electrical and electronics engineering; observation of company in its original settings and working on projects relevant to the company; submission of a written report. *Credit units: None ECTS Credit Units: 6, Prerequisite: EEE 299. Aut (Staff) Spr (Staff)*

EEE 411 Telecommunication Electronics
Nonlinear controlled sources: piece-wise linear, square law, exponential and differential pair characteristics. Low level amplitude modulation and analog multiplication. Nonlinear loading of tuned circuits. Sinusoidal oscillators. Frequency mixers. High level amplitude modulation techniques. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 313.*

EEE 412 Microwave Electronics
Microstrip and stripline techniques. Transistor and amplifier measurement techniques. Small and large signal high frequency amplifier design. Noise considerations in amplifiers. RF power amplifiers. Neutralization in RF amplifiers. Computer-aided design of amplifiers. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 313 and EEE 351.*

EEE 414 Introduction to CMOS VLSI Design
Introduction to CMOS circuits, MOS transistor theory, CMOS processing technology, CMOS circuit characterization. CMOS VLSI circuit design, clocking strategies, case studies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 313.*

EEE 415 Analog CMOS Integrated Circuits
Review of MOS device physics, single stage amplifiers, differential amplifiers, current mirrors, frequency response of amplifiers, Miller effect, noise in amplifiers, feedback, operational amplifiers, slew rate, power supply rejection, stability and frequency compensation, band gap references, switched capacitor circuits, nonlinearities, linearization, offset, oscillators, phase locked loops. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 313. Spr (A. Atalar)*

EEE 418 Principles of Electronic Devices
Crystal structure and Growth techniques. Foundations of modern electronics. Energy bands in solids. Tunneling. Carrier concentrations and transport properties in semiconductors. Equilibrium states of PN junctions. Transient analysis of PN junction diodes. SS, MS, SIS junction characteristics and principles of special purpose diodes. BJT equilibrium states and Ebers-Moll static model. Secondary effects and transient states in BJTs. Small signal model. JFET characteristics and equilibrium states. Principles of metal-insulator-semiconductor transistors and dc characteristics. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 202 and EEE 211 and PHYS 102.*

EEE 419 Power Electronics
Analysis and design of linear regulators, inverters, DC-DC converters, different topologies of converters, efficiencies of power conversion circuits, transformers and magnetic design, power semiconductor devices, power factor and power factor correction. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 313. Aut (A. Atalar)*

EEE 424 Digital Signal Processing
Discrete-time signals and systems. Review of the z-transform. DFT and its compilation. Some other linear transform. DCT, DST, Hartley, Hilbert, Walsh, Hadamard, etc. Digital filters (FIR and IIR) and filtering. Introduction

to multirate signal processing. Introduction to time-frequency representations. Inverse problems. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 321 and MATH 255. Aut (S. S. Kozat) Spr (L. Onural)*

EEE 428 Optics
Geometrical, scalar wave, and electromagnetic wave theories of light. Gaussian beam propagation. Signals and systems concepts for analyzing optical systems (Fourier optics). Interference, diffraction, imaging, frequency domain filtering, and holography. Polarization, propagation in anisotropic media, optical waveguides, fibers, resonators, and their applications. Temporal and spatial coherence. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 321 and EEE 351. Aut (O. Aytür)*

EEE 429 Photonics
Photon theory of light with matter. Spontaneous emission, absorption, and stimulated emission. Principles of laser amplifiers. Semi-conductor lasers, light emitting diodes, and light detectors. Electro-optics, accousto-optics, and their applications. Introduction to nonlinear optics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 428. Spr (O. Aytür)*

EEE 431 Telecommunications I
Measure of information, entropy, source coding, rate distortion. Sampling theorem, waveform coding. AM, FM signals. Signal representation. Noise processes, white noise and Gaussian processes. Digital modulation/demodulation, receiver design, matched filter. Performance analysis of digital modulation schemes. Channel coding, linear block codes, convolutional codes. Noise figure, link budget analysis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321 and MATH 255. Aut (T. M. Duman) Spr (S. Gezici)*

EEE 432 Telecommunications II
Intersymbol interference and the Nyquist criterion. Partial response signaling. Channel equalization techniques. Carrier and symbol synchronization. Wireless communications. Diversity and multi-antenna techniques. Examples of current wireless systems. Cellular system design concepts. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 431. Spr (T. M. Duman)*

EEE 436 Wireless Networking Technologies and Applications
Wireless networking fundamentals. Wireless channel characteristics. Wireless LANs. Medium access control in WLANs. Bluetooth and WPANs. WiFi/Bluetooth coexistence. Ad hoc networks. MANET routing algorithms. Mobile IP, DHCP, NAT. Wireless sensor networks. Real-time OS for wireless sensor applications. Network programming for mobile applications. Energy-efficient routing and scheduling in sensor networks. TCP performance in wireless networks. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 102.*

EEE 442 Nonlinear Systems
Linear versus nonlinear. Basic nonlinear analysis. Nonlinear ordinary differential equations. Second order systems; Poincare-Bendixon theorem, limit cycles. Stability in the sense of Lyapunov. Input-output stability, passivity, small gain theorem. Singular pertubations. Differential geometric methods. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 342. Aut (Ö. Morgül)*

EEE 443 Neural Networks
The structure of the brain. Learning in machines. Pattern recognition. Classification techniques. Linear classifiers. Basic Neuron. Modeling the single neuron. The perceptron. The multilayer perceptron. Kohonen self-organizing network. Hopfield network. Neural network classifiers. Adaptive resonance theory. Cellular neural networks. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 342.*

EEE 444 Robust Feedback Theory
Review of time and frequency domain analysis and design of feedback systems. Internal stability, asymptotic tracking, performance. Robust stability and robust performance. Stabilization. Parametrization of stabilizing controllers. Loopshaping. Model matching. Introduction to H-infinity control. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 342. Aut (H. Özbay)*

EEE 446 Control and Optimization of Stochastic Systems
Stochastic stability of dynamical and distributed systems under probabilistic uncertainty. Optimal control problems and dynamic programming. Partially observed models; introduction to filtering and average cost minimization problems. Team decision theory and information structures; static and dynamic teams. Networked control systems, stabilization and optimization. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 342 and MATH 255.*

EEE 447 Introduction to Robotics
Robot arm kinematics (forward and inverse kinematics); robot arm dynamics (equations of motion, equivalent formulations); planning of manipulator trajectories; range sensing (time-of-flight and triangulation systems, nown target size, optical flow), proximity sensing (optical, magnetic, capacitive, inductive, ultrasonic), tactile (touch) sensing, force and torque sensing, dead reckoning (odometry and inertial sensing); mobile robots (localization, mapping, path planning, navigation, obstacle avoidance, object classification); multi-sensor data fusion. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 241 and PHYS 102. Aut (B. Barshan)*

EEE 451 Microwave Engineering
Transmission lines and waveguides. Circuit theory for waveguiding systems, scattering matrix formulation. Excitation of waveguides. Impedance transformation and matching. Smith chart. Passive microwave devices. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 352. Aut (V. B. Ertürk)*

EEE 452 Antenna Engineering
Fundamentals of electromagnetic radiation. Antennas and antenna impedance. Small and finite size dipole antennas. Ground interference effects. Loop antennas. Aperture antennas. Parabolic reflectors. Microstrip antennas. Other practical antenna configurations. Analysis and synthesis of linear arrays. Self impedance. Moment methods. Radio wave propagation. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: EEE 351. Spr (V. B. Ertürk)*

EEE 473 Medical Imaging
Fundamentals and applications of four medical imaging techniques: magnetic resonance imaging, ultrasound, nuclear medicine X-ray computed tomography. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321. Aut (E. Ü. Sarıtaş)*

EEE 474 Foundations of Magnetic Resonance Imaging
Basic principles of magnetic resonance imaging (MRI), instrumentation, and various methods used in MRI. Various research areas in this highly active field are discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321.*

EEE 475 Medical Image Reconstruction and Processing
Fundamentals and applications of medical image reconstruction and processing. Reconstruction from non-uniformly sampled data, projection data, regularly/randomly undersampled data. Parallel imaging and compressed sensing for medical imaging. Improving image quality, denoising, deconvolution, off-resonance correction. Post-processing of images, image registration, image segmentation. Examples from magnetic resonance imaging (MRI), X-ray computed tomography (CT), and magnetic particle imaging (MPI). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321. Spr (E. Ü. Sarıtaş)*

EEE 480 Advanced Optoelectronics: Innovative Design
Review of physics of optoelectronic devices. Heterostructures. Optical absorption, emission and refraction processes. Junction theory. Light emitting diodes. Laser diodes. Photodetectors. Modulators. Photonic switches. Integrated photonic devices. Innovative optoelectronic devices. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 102.*

EEE 481 Biomedical Signals and Instrumentation
Biophysics of cell membranes, models of neuron membrane potential, Hodgkin-Huxley equations for the action potential, propagation of the action potential, neurocommunication, simple neural networks which explain behavior, volume conductor fields, theory of Electrocardiography (ECG), ECG amplifiers and instrumentation ECG signal processing, EEG, EMG, and other bioelectric signals, model of the cardiovascular system, model of the respiratory system, model of the neurocardiac control system, transducers for bioelectric, cardiovascular and respiratory measurements, preconditing circuits and instrumentation techniques. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: EEE 313 and EEE 321 and EEE 351. Spr (Y. Z. İder)*

EEE 482 Computational Neuroscience
Mathematical techniques for analysis and modeling of neural systems. Neural encoding: reverse-correlation and regression, receptive-field models. Representation: Hebbian learning (PCA), sparse coding (ICA). Cortical maps: clustering, dimensionality reduction, manifold models. Neural decoding: classification, identification, Bayesian inference. Connectomics: structural and functional connectivity. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 220 or MATH 225 or MATH 241. Aut (T. Çukur)*

EEE 485 Statistical Learning and Data Analytics
Introduction to the goals and tools of machine learning and data analytics. Overview of machine learning on diverse data acquired by: sensor networks, physiological devices, etc. Fundamental learning models. Applications: decision support, computer vision, recommender systems. Performance analysis by using probabilistic approach. Bayesian and frequentist machine learning. Classification and regression. Linear regression, Ridge regression, Lasso. Parameter estimation and Bayesian regression. Generalized linear models. Neural Networks. Learning from unlabeled data: probabilistic clustering, blind signal separation and feature extraction. Graphical models. Techniques for handling missing and corrupted data. Deep learning, transfer learning, online learning. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (MATH 255 or MATH 230 or MATH 260) and (MATH 241 or MATH 225 or MATH 220) . Aut (C. Tekin) Spr (S. S. Kozat, C. Tekin)*

EEE 491 Electrical and Electronics Engineering Design I
Senior design project involving design and implementation of a complete electrical and electronics engineering system. Development involving multiple areas of electrical and electronics engineering. Simulations. Prototype development and testing. Technical communications and teamwork skills enrichment. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 212 and EEE 313 and EEE 321. Aut (İ. E. Ungan) Spr (İ. E. Ungan)*

EEE 492 Senior Project
A technical project emphasizing engineering design principles on a specific topic in any field of electrical engineering to be carried out by the senior student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

EEE 493 Industrial Design Project I
Conducting team based research and development on projects with industrial significance. Design process components: research, concept, feasibility, simulations, specifications, benchmarking, proposal generation and critical design review. Technical communications and team skills enrichment. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 212 and EEE 313 and EEE 321. Aut (O. Arıkan)*

EEE 494 Industrial Design Project II
Continuation of EEE 493. Implementation, evaluation and documentation of designs developed in EEE 493. Social, economic and safety considerations. Technical communications and team skills enrichment. Preparing a detailed report on the project. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 493. Spr (O. Arıkan)*

EEE 495 Electrical and Electronics Engineering Design II
Senior design project involving design and implementation of a complete electrical and electronics engineering system. Major design experience which is based on integration of previously gained knowledge. Simulations. Prototype development and testing. Technical communications skills enrichment. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 491. Aut (A. Altıntaş) Spr (A. Altıntaş)*

EEE 497 Digital Signal Processing Laboratory
Fundamentals of operating and analyzing real time digital signal processing systems, including the required theory, the hardware used to sample and process the signals, and real time software development environments. Implementation of a project that develops system-level design skills. Project work covering design and implementation of FIR and IIR filters, and applications of the discrete Fourier transformation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: EEE 321 and MATH 255.*

EEE 501 Linear System Theory
Mathematical preliminaries: linear spaces, linear transformations, matrix algebra, normed linear spaces, inner product spaces, differential equations, distributions, Fourier transform. Dynamical system concepts: state, response, equivalence, linearity, time-invariance. Linear differential systems: solution, impulse response, stability, controllability and observability, time-invariant systems, periodically varying systems. Discrete-time systems. Some applications: linear quadratic optimization, estimation, filtering identification. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. B. Özgüler)*

EEE 511 Telecommunication Electronics
Resonant circuits, impedance matching, filter sections. Bandwidth estimation, open circuit time constants, short circuit time constants. RF amplifiers. Nonlinear circuits. Oscillators. Mixers. Phase locked loop. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 512 Microwave Electronics
Microstrip and stripline techniques. Transistor and amplifier measurement techniques. Small and large signal high frequency amplifier design. Noise considerations in amplifiers. RF power amplifiers. Neutralization in RF amplifiers. Computer-aided design of amplifiers. Recent topics in microwave electronics. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 514 Introduction to CMOS VLSI Design
Introduction to CMOS circuits, MOS transistor theory, CMOS processing technology, CMOS circuit charactearization. CMOS VLSI circuit design, clocking strategies, case studies. Recent topics and developments in Introduction to CMOS VLSI Design. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 515 Analog CMOS Integrated Circuits
Review of MOS device physics, single stage amplifiers, differential amplifiers, current mirrors, frequency response of amplifiers, Miller effect, noise in amplifiers, feedback, operational amplifiers, slew rate, power supply rejection, stability and frequency compensation, bandgap references, switched capacitor circuits, nonlinearities, linearization, offset, oscillators, phase locked loops. Recent topics in CMOS design. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Atalar)*

EEE 518 Principles of Electronic Devices
Crystal structure and growth techniques. Foundations of modern electronic. Energy bands in solids. Tunneling. Carrier concentrations and transport properties in semiconductors. Equilibrium states of PN junctions. Transient analysis of PN junction diodes. SS, MS, SIS junction characteristics and principles of special purpose diodes. BJT equilibrium states and Ebers-Moll static model. Secondary effects and transient states in BJT's. Small signal model. JFET characteristics and equilibrium states Principles of metal-insulator-semiconductor transistors and dc characteristics. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 519 Power Electronics
Analysis and design of linear regulators, inverters, DC-DC converters, different topologies of converters, efficiencies of power conversion circuits, transformers and magnetic design, power semiconductor devices, power factor and power factor correction. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Atalar)*

EEE 520 Multirate Signal Processing and Wavelet Theory
Sampling Theory, Upsampling, Downsampling, Decimation, and Interpolation, Perfect reconstruction filterbanks and subband coding. Wavelet basis of L2 (R). Orthogonal wavelets and the relation between the perfect reconstruction filterbanks and wavelets. Biorthoghonal filterbanks, lifting structures. Applications: Image coding and JPEG-2000, MPEG Audio Coding, Signal Analysis using wavelets. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 521 Introduction to Radar Signal Processing
Radar Fundamentals, radar equation, range and Doppler, system losses. Radar Cross Section of simple objects and models. CW and Pulsed Radars. Radar detection. Radar waveform analysis. Matched filter and ambiguity function. Pulse Compression. Pulse Compression. Radar Wave propagation. Clutter and moving target detection. Radar antennas. Single and multiple target tracking. Synthetic Aperture Radars and their applications. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 522 Optical Information Processing
Two-dimensional signals and systems. Space-frequency representations. Signal transformations. Linear system formulation of propagation of light through free space, lenses, and lens-like media and their analogy with electrical systems. Analog signal and image processing with optical systems, including transformations, filtering, etc. Alternative mathematical formulations of optical propagation: geometrical optics, scalar wave theory, phase-space approaches, variational and Hamiltonian formulation, operator algebras. Invariants and conservation laws. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 525 Advanced Signal Processing
Signal spaces, signal representation and approximation, wavelets, signal modeling: AR, MA, ARMA models, adaptive filters, iterative and recursive methods in signal processing, spectrum estimation, beam forming and array processing, inverse problems. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. E. Çetin)*

EEE 526 Digital Image Processing
Two-dimensional system fundamentals, image sampling and quantization, multi-dimensional transforms: DFT, Sine and Cosine, Hadamard, Walsh, KL transforms. Image models, image enhancement, image filtering and restoration, image analysis and computer vision. Image reconstruction from projections, image data compression. Inverse problems. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. E. Çetin)*

EEE 527 Digital Coding of Waveforms
Sampling of band limited waveforms; characteristics of speech and image waveforms; quantization of discrete time signals. Pulse code modulation (PCM), differential PCM. Vector quantization, tree and Trellis coders. Subband coding, KL transform, DCT, DHT, OWHT, transform coding. Run-length coding of binary waveforms. Recent topics on digital coding. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 528 Optics
Geometrical, scalar wave and electromagnetic wave theories of light. Gaussian beam propagation. Signals and systems concepts for analyzing optical systems (Fourier optics). Interference, diffraction, imaging, frequency domain filtering, and holography. Polarization, propagation in anisotropic media, optical waveguides, fibers, resonators, and their applications. Temporal and spatial coherence. recent topics and developments in optics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (O. Aytür)*

EEE 529 Photonics
Photon theory of light and interaction of light with matter. Spontaneous emission, absorption, and stimulated emission. Principles of lasers and laser amplifiers. Semi-conductor lasers, light emitting diodes, and light detectors. Electro-optics, acousto-optics, and their applications. Introduction to nonlinear optics. Recent topics in photonics. *Credit units: 3 ECTS Credit Units: 7.5. Spr (O. Aytür)*

EEE 530 Digital Communications Theory
Physical layer aspects of digital communication systems. Signal representations, power spectrum. Optimum receivers for Gaussian noise channels. Linear modulations with memory: sequence detection. Carrier recovery and timing estimation. Communication in dispersive channels: Signal design, optimum receivers, equalization. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 533 Random Processes
A first year graduate course on theory and applications of random processes. Review of probability theory. Random sequences. Autocorrelation and covariance. Ergodicity and stationarity. Stochastic calculus. Poisson process. Gaussian process. Brownian motion/Wiener process. Markov process. Shot noise process. Linear systems driven by stochastic inputs. Elementary queueing theory. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. Gezici)*

EEE 534 Wireless Communications
Evolution of radio communications and broadcast systems, new trends, economics of radio communications. Spectrum usage. Cellular concept, coverage, frequency re-use, interference. Broadcast concepts. Radio propagation. Large scale path loss, small scale fading and multipath. Modulation techniques for mobile radio and broadcast. Multiple access techniques for wireless communications. Networking and planning. Recent topics on wireless communications. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. T. Koç)*

EEE 536 Internet Architecture and Protocols
Internet architecture. Hubs, switches, and routes. Data link layer protocols. Traffic engineering. Transport protocols: UDP, TCP. Quality of Service. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 538 Communication Network Analysis
Layered network architecture. Point-to-point protocols and links. Queuing models. Networks of queues. Multiple access communications. Routing. Flow control. *Credit units: 3 ECTS Credit Units: 7.5. Spr (N. Akar)*

EEE 539 Detection and Estimation Theory
Graduate course on the theory of detection and estimation. Hypothesis testing: Bayesian, minimax and Neyman-Pearson approaches. Signal detection in discrete time: Detector structures and performance evaluation. Parameter estimation: Bayesian estimation, nonrandom parameter estimation, maximum likelihood estimation. Signal estimation in discrete time: Linear estimation theory and Kalman-Bucy filtering. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. Gezici)*

EEE 542 Nonlinear Systems
Linear versus nonlinear. Basic nonlinear analysis. Nonlinear ordinary differential equations. Second order systems; Poincare-Bendixon theorem, limit cycles. Stability in the sense of Lyapunov. Input-output stability, passivity, small gain theorem. Singular Perturbations. Differential geometric methods. Recent topics on nonlinear systems. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ö. Morgül)*

EEE 543 Neural Networks
The structure of the brain. Learning in machines. Pattern recognition. Classification Techniques. Linear classifiers. Basic Neuron. Modeling the single neuron. The perceptron. The multiplayer perceptron. Kohonen self-organizing network. Hopfield network. Neural network Classifiers. Adaptive resonance theory. Cellular neural network. Recent topics and developments in neural networks. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 544 Robust Feedback Theory
Review of time and frequency domain analysis and design of feedback systems. Internal stability, asymptotic tracking, performance. Robust stability and robust performance. Stabilization. Parametrization of stabilizing controllers. Loopshaping. Model matching. Introduction to H-infinity control. Recent topics and developments Feedback Control Theory. *Credit units: 3 ECTS Credit Units: 7.5. Aut (H. Özbay)*

EEE 546 Control and Optimization of Stochastic Systems
Stochastic stability of dynamical and distributed systems under probabilistic uncertainty. Optimal control problems and dynamic programming. Partially observed models; introduction to filtering and average cost minimization problems. Team decision theory and information structures; static and dynamic teams. Networked control systems, stabilization and optimization. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 547 Introduction to Robotics
Robot arm kinematics (forward and inverse kinematics); robot arm dynamics (equations of motion, equivalent formulations); planning of manipulator trajectories; range sensing (time-of-flight and triangulation systems, nown target size, optical flow), proximity sensing (optical, magnetic, capacitive, inductive, ultrasonic), tactile (touch) sensing, force and torque sensing, dead reckoning (odometry and inertial sensing); mobile robots (localization, mapping, path planning, navigation, obstacle avoidance, object classification); multi-sensor data fusion. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Barshan)*

EEE 549 Nanoscale Fabrication Technologies for Semiconductors
Nanoscale fabrication methods used for semiconductor devices and VLSI technology. Revief of Semiconductor Technology, Review of Semiconductor Device Physics, Outline of a nanoscale CMOS fabrication process, Crystal Growth, Semiconductor Manufacturing, Cleanrooms and wafer cleaning, Nanolithography, Oxidation, Diffusion, Ion Implantation, Thin film deposition, Etching, and Backend technology. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Özbay)*

EEE 550 Nanoelectronic Devices: Physics and Technology
Semiconductor electronics technology, overview of fabrication methods, physics of semiconductors in equilibrium and non-equilibrium, movement of free carriers in semiconductors, p-n and metal-semiconductor junctions, heterojunctions and quasi-electric fields, basic quantum mechanics for nanoscale semiconductor structures and quantum-effect devices, metal-oxide-semiconductor capacitor and MOS transistors, bipolar junction transistors,

field effect transistors and nanowire FETs, high electron mobility transistors, resonant tunneling in semiconductor nanostructures, transistor scaling issues, ballistic transport and ballistic transistors, graphene transistors. *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Özbay)*

EEE 551 Microwave Engineering
Transmission lines and waveguides. Circuit theory for waveguiding systems, scattering matrix formulation. Excitation of waveguides. Impedance transformation and matching. Smith chart. Passive microwave devices. recent topics and developments in microwave engineering. *Credit units: 3 ECTS Credit Units: 7.5. Aut (V. B. Ertürk)*

EEE 552 Antenna Engineering
Fundamentals of electromagnetic radiation. Antennas and antenna impedance. Small and finite size dipole antennas. Ground interference effects. Loop antennas. Aperture antennas. Parabolic reflectors. Microstrip antennas. Other practical antenna configurations. Analysis and synthesis of linear arrays. Self impedance. Moment methods. Radio wave propagation. Recent topics on antenna engineering. *Credit units: 3 ECTS Credit Units: 7.5. Spr (V. B. Ertürk)*

EEE 557 Acoustic Waves and Devices
Plane waves in fluids, acoustic wave equation; transient and steady-state reflection and transmission; lumped elements; refraction; strings, membranes, and cavities; ray acoustics; absorption and dispersion; source theory; vibrating piston, transducers; diffraction. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 558 Electroacoustic Transduction
Introduction to acoustics, wave equation, propagation basics. Piezoelectricity, piezoelectric materials, constitutive equations. Electric field, stress, strain, tensors. Resonance modes and lumped element modeling of piezoelectric materials. Application of circuit theory and microwave theory to transducers. Piezoelectric piston transducer and hydrophone design, transducer passive materials. Transducer measurements Radiation impedance and its interaction with transducer, radiated and reactive power, energy Performance: coupling coefficient, bandwidth, efficiency, noise Capacitive Transducers: Electrodynamic transduction Radiation impedance, surface particle velocity profile and radiation impedance interrelations. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 560 Nanoengineering and Nanodevices
Fundamentals and comparison of nanophotonics and nanoelectronics, with emphasis on applications in nanodevices based on quantum properties of light and matter interactions. Electrons and electromagnetic waves in complex structures, light propagation and reflection, tunnelling, light in disordered medium, simple periodic structures, photonic crystals, plasmonics, surface plasmons, localized plasmons, plasmonic devices and sensors, optical transitions in quantum systems, elements of quantum mechanics, quantum confined structures, nanocrystals. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 573 Medical Imaging
Fundamentals and applications of four medical imaging techniques: magnetic resonance imaging, ultrasound, nuclear medicine X-ray computed tomography. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Ü. Sarıtaş)*

EEE 574 Foundations of Magnetic Resonance Imaging
Basic principles of magnetic resonance imaging (MRI), instrumentation, and various methods used in MRI. Various research areas in this highly active field are discussed. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 575 Medical Image Reconstruction and Processing
Fundamentals and applications of medical image reconstruction and processing. Reconstruction from non-uniformly sampled data, projection data, regularly/randomly undersampled data. Parallel imaging and compressed sensing for medical imaging. Improving image quality, denoising, deconvolution, off-resonance correction. Post-processing of images, image registration, image segmentation. Examples from magnetic resonance imaging (MRI), X-ray computed tomography (CT), and magnetic particle imaging (MPI). *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Ü. Sarıtaş)*

EEE 580 Advanced Optoelectronics: Innovative Design
Review of physics of optoelectronic devices. Heterostructures. Optical absorption, emission and refraction processes. Junction theory. Light emitting diodes. Laser diodes. Photodetectors. Modulators. Photonic switches. Integrated photonic devices. Innovative optoelectronic devices. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 581 Biomedical Signals and Instrumentation
Biophysics of cell membranes, models of neuron membrane potential, Hodgkin-Huxley equations for the action potential, propagation of the action potential, neurocommunication, simple neural networks which explain behavior, volume conductor fields, theory of Electrocardiography (ECG), ECG amplifiers and instrumentation, ECG signal processing, EEG, EMG, and other bioelectric signals, model of the cardiovascular system, model of the respiratory system, model of the neurocardiac control system, transducers for bioelectric, cardiovascular an respiratory measurements, preconditioning circuits and instrumentation techniques. Recent topics and developments in biomedical signals and instrumentation. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Y. Z. İder)*

EEE 582 Computational Neuroscience
Mathematical techniques for analysis and modeling of neural systems.Neural encoding: reverse-correlation and regression, receptive-field models. Representation: Hebbian learning (PCA), sparse coding (ICA). Cortical maps: clustering, dimensionality reduction, manifold models. Neural decoding: classification, identification, Bayesian inference. Connectomics: structural and functional connectivity. *Credit units: 3 ECTS Credit Units: 7.5. Aut (T. Çukur)*

EEE 585 Statistical Learning and Data Analytics
Introduction to the goals and tools of machine learning and data analytics. Overview of machine learning on diverse data acquired by: sensor networks, physiological devices, etc. Fundamental learning models. Applications: decision support, computer vision, recommender systems. Performance analysis by using probabilistic approach. Bayesian and frequentist machine learning. Classification and regression. Linear regression, Ridge regression, Lasso. Parameter estimation and Bayesian regression. Generalized linear models. Neural Networks. Learning from unlabeled data: probabilistic clustering, blind signal separation and feature extraction. Graphical models. Techniques for handling missing and corrupted data. Deep learning, transfer learning, online learning. *Credit units: 3 ECTS Credit Units: 7.5. Spr (S. S. Kozat, C. Tekin)*

EEE 591 Graduate Seminar I
Seminars on recent topics in electrical and electronics engineering. *Credit units: None ECTS Credit Units: 1. Aut (C. Tekin) Spr (C. Tekin)*

EEE 592 Graduate Seminar II
Seminars on recent topics in electrical and electronics engineering. *Credit units: None ECTS Credit Units: 1. Aut (C. Tekin) Spr (Staff)*

EEE 596 Graduate Research Project in Telecommunications and Networking
A technical project emphasizing engineering design principles on telecommunications or networks to be carried out by the graduate student under the supervision of a faculty member. *Credit units: None ECTS Credit Units: 22.5.*

EEE 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

EEE 603 Advanced Electromagnetic Theory I
Fundamentals of electrostatic and magnetostratic. Time varying fields Maxwell's equations. Plane, cylindrical, and spherical electromagnetic waves and boundary value problems. Waveguides and resonant cavities. Radiating systems and diffraction. Introduction to special relativity. *Credit units: 3 ECTS Credit Units: 7.5. Spr (V. B. Ertürk)*

EEE 633 Coding Theory
Error correction techniques used to protect digital information against noise. (i) Algebraic coding techniques, including BCH and RS codes and the Berlekamp-Massey decoding algorithm. (ii) Convolutional codes and the Viterbi decoding algorithm. (iii) Turbo and LDPC codes and the message passing decoding algorithm. *Credit units: 3 ECTS Credit Units: 7.5. Spr (T. M. Duman)*

EEE 634 Information Theory
Fundamental information-theoretic concepts: Entropy, mutual information, asymptotic equipartition property. Lossless data compression: Kraft inequality, Huffman codes. Shannon's coding theorem. Gaussian channel capacity. Network information theory: Multiple user channel capacity. Lossy data compression: Rate distortion theory. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 644 Advanced Robust Control Theory
Review of multi-input-multi-output linear time invariant systems: stability, controllability and observability, Lyapunov methods. Linear Matrix Inequality (LMI)-based controller design. Passivity based methods: analysis and design. Frequency domain design and analysis of infinite dimensional systems: spatially distributed parameter systems, systems with time delays and applications. *Credit units: 3 ECTS Credit Units: 7.5.*

EEE 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (Staff) Spr (Staff)

DEPARTMENT OF INDUSTRIAL ENGINEERING

M. S. Aktürk (Chair), Ç. Ararat, Ö. Çavuş İyigün, S. Dayanık, N. K. Erkip, K. Gökbayrak, Ü. Gürler, O. Karaşan, Y. Karpat, Ö. Karsu, A. S. Kocaman, E. Nadar, O. Oğuz, A. G. Özbaygın, M. Ç. Pınar, N. Şahin, A. Şen, A. Toptal Bilhan, F. Ulus, E. Uzun, H. Yaman Paternotte, B. Yetiş.

Part-time: O. Arslan, H. S. Ergür, K. Göler, M. Yılmaz.

The Department of Industrial Engineering offers B.S., M.S. and Ph.D. degrees in Industrial Engineering.

UNDERGRADUATE PROGRAM

Industrial Engineering (IE) is the scientific discipline that is concerned with how best to organize people, information, money, and materials to produce and distribute services and products efficiently. It draws upon specialized knowledge and skills in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems.

The mission of the Industrial Engineering Program is to foster a world-class academic environment for industrial engineering research and education in collaboration with industry. The department is committed to graduate competent industrial engineers equipped with the proficiency to adapt to technological and societal changes, and who are poised to excel in the field. The educational objectives are: 1) Graduates will solve problems in their respective professional domains by applying industrial engineering knowledge and skills, such as analytical and systems thinking. 2) Graduates will participate actively in functions such as analysis, design, implementation and improvement of systems in manufacturing or service sectors. 3) Graduates will engage in advanced degree programs or continue professional development via workshops, training programs, license certifications, or independent studies.

The Industrial Engineering program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

A necessary condition for the realization of this goal is to provide a solid preparation in foundations through courses in mathematics, computers, and basic sciences. The undergraduate IE curriculum is well supplemented in such foundational courses. To this is added a solid preparation in fundamentals of engineering through various specialized courses. Through the course work, the student acquires the necessary skills in modeling and analysis of engineering systems and learns to develop insightful approaches to problem solving. With a number of technical elective courses, students build up additional strength in engineering. To provide the student with a broad intellectual spectrum, electives in economics, social sciences and humanities are offered. Additional courses in communication, history, and professional ethics help develop self-confidence, articulation skills, and professional attitude in business and social environments. A special research course at the senior level allows higher achieving students to participate in a research project under the guidance of a faculty member. Design experience is incorporated in the courses as the student progresses through the program. A capstone two course sequence in system design in the fourth year gives the student the experience of how to integrate and use in creative ways the various modeling skills and analysis techniques he/she has acquired in designing real world manufacturing or service systems. This course sequence addresses real world problems supplied each year to the department by various companies in Turkey. These problems are studied and solved by students under the guidance of company officials and faculty members from the department. This hands-on experience gives students the unique opportunity to work on challenging problems and produce solutions of good quality within an imposed deadline.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
HIST 200	History of Turkey	4 / 8
MATH 101	Calculus I	4 / 7
PHYS 101	General Physics I	4 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
IE 102	A Process Outlook for Industrial Engineering	3 / 6
MATH 102	Calculus II	4 / 7
PHYS 102	General Physics II	4 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CS 113	Introduction to Computing	4 / 7
GE 250	Collegiate Activities Program I	- / 1
HUM 111	Cultures Civilizations and Ideas I	3 / 6
IE 262	Manufacturing Processes	4 / 6
MATH 225	Linear Algebra and Differential Equations	4 / 7
MATH 250	Introduction to Probability	3 / 6

Spring Semester		Credits / ECTS Credits
CS 114	Introduction to Programming	4 / 7
GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6
IE 202	Introduction to Modeling and Optimization	3 / 6
IE 271	Operations Analysis and Design	3 / 6
MATH 260	Introduction to Statistics	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CS 281	Computers and Data Organization	3 / 6
ECON 207	Economics Theory for Engineers	3 / 6
GE 301	Science Technology and Society	2 / 3
IE 299	Summer Training I	- / 6
IE 303	Modeling and Methods in Optimization	3 / 6
IE 325	Stochastic Models	3 / 6
IE 375	Production Planning	3 / 6

Spring Semester		Credits / ECTS Credits
ENG 401	Technical Report Writing and Presentation	2 / 4
IE 324	Simulation	4 / 7
IE 342	Engineering Economic Analysis	3 / 6
IE 376	Production Information Systems	3 / 7
IE 380	Quality Assurance and Reliability	3 / 6
IE 496	Seminar in Production Systems	- / 1
	IE Restricted Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
IE 399	Summer Training II	- / 6
	Breadth Elective	3 / 6
	Humanities and Social Science Elective	3 / 6

	IE Restricted Electives (2)	6 / 12
	Project Elective I	3 / 6

Spring Semester Credits / ECTS Credits

	Breadth Electives (2)	6 / 12
	Humanities and Social Science Elective	3 / 6
	IE Restricted Elective	3 / 6
	Project Elective II	3 / 6

ELECTIVE COURSES

A list of approved elective courses is announced at the beginning of each semester by the department. Humanities/Social Sciences electives are any approved courses offered by the Faculty of Humanities and Letters or the Faculty of Art, Design and Architecture or the Faculty of Economics, Administrative, and Social Sciences. Breadth electives are any approved courses offered by the Faculty of Engineering, Faculty of Science, Faculty of Economics, Administrative, and Social Sciences or the Faculty of Business Administration.

GRADUATE PROGRAM

The overall objective of the graduate programs in the department is to conduct fundamental research in industrial engineering and operations research in accordance with scientific and technological developments, and to provide the students with a strong analytical basis for advanced theoretical work or for development of new approaches to applications. Current research areas are optimization theory/mathematical programming (linear and non-linear optimization, combinatorial and integer optimization, graph theory and network optimization, large scale optimization, optimization under uncertainty), stochastic systems (queueing models, maintenance, inventory control, modeling and optimization), simulation, statistics (estimation in stochastic systems, nonparametric analysis, Bayesian methods, data analysis), manufacturing systems (advanced manufacturing technologies, robotics, flexible manufacturing systems, micro/nano technologies, modeling and analysis of production systems), supply chain management and logistics, pricing and revenue optimization, scheduling, production planning and control systems, operations research methods in finance and energy, sustainable operations.

Master of Science in Industrial Engineering

Admission: All applicants are required to have a B.S. degree in industrial engineering, or in a related field of science or engineering. Students with a B.S. degree in areas other than industrial engineering may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
IE 500	Mathematics of Operations Research	3 / 7.5
IE 505	Mathematical Programming	3 / 7.5

IE 523	Probabilistic Analysis	3 / 7.5
IE 599	Master's Thesis	- / 56
	Graduate Electives (2)	6 / 15
	IE Graduate Electives (2)	6 / 15
	IE Graduate Seminar	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science* and selected 5XX ECON and MAN coded courses.

IE Graduate Elective Courses: All 5XX or higher level IE coded courses with at least 3 credits.

Doctor of Philosophy in Industrial Engineering

Admission: All applicants are required to have a M.S. degree with thesis in industrial engineering, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
IE 521	Stochastic Processes	3 / 7.5
IE 699	Ph.D. Dissertation	- / 140
MATH 500	Mathematical Analysis	3 / 7.5
	Graduate Electives (2)	6 / 15
	IE Graduate Electives (2)	6 / 15
	IE Graduate Seminar	- / 1
	IE Restricted Graduate Elective	3 / 7.5

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science and selected 5XX ECON and MAN coded courses.

IE Graduate Elective Courses: All 5XX or higher level IE coded courses with at least 3 credits.

IE Restricted Graduate Elective Courses: IE 513, IE 518, IE 614

COURSE DESCRIPTIONS

IE 102 A Process Outlook for Industrial Engineering
Familiarize the IE freshmen with the profession by introducing the basic notion of process. Design of processes and process improvements. Notions of performance evaluation. Processes, performance and their relations to

*Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

decision making. Mathematical representation of the decision making. Demonstration using simple examples from daily life as well as more complicated examples from industry. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Yetiş)*

IE 202 Introduction to Modeling and Optimization

Introduction to mathematical modelling. Linear and integer models. Linear programming. Graphical method. Simplex method. Duality and sensitivity analysis. Network models. Network simplex method. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 220 or MATH 223 or MATH 225 or MATH 241. Aut (O. Karaşan, M. Ç. Pınar) Spr (O. Karaşan, M. Ç. Pınar)*

IE 262 Manufacturing Processes

Survey of machining, welding and finishing processes. Analysis of product and process design together with material selection for manufacturing. Special emphasis given to economics of metal cutting. Introduction to numerical control, automation and manufacturing systems. Laboratory use of traditional manufacturing processes, CNC programming, robotics, FMS cell controller, and related software. *Credit units: 4 ECTS Credit Units: 6. Aut (Y. Karpat, M. Yılmaz) Spr (Y. Karpat)*

IE 271 Operations Analysis and Design

Introduction to traditional industrial engineering. Concepts and functions in the design, improvement, and analysis of man - machine systems mainly in the context of a manufacturing environment. Design and improvement of manufacturing systems. Time study, work measurement, material handling systems, and layout design. A term project on simulating manufacturing systems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 262. Spr (Y. Karpat, A. S. Kocaman)*

IE 299 Summer Training I

A minimum of four weeks summer practice in a manufacturing organization; observation of organization in its original settings; written report. *Credit units: None ECTS Credit Units: 6, Prerequisite: IE 271. Aut (N. Şahin) Spr (N. Şahin)*

IE 303 Modeling and Methods in Optimization

Extension of linear programming to different methodologies including network models, integer programming and dynamic programming. Discrete optimization: local search heuristics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202. Aut (M. Ç. Pınar, H. Yaman Paternotte) Spr (H. Yaman Paternotte)*

IE 324 Simulation

Use and misuse of simulation as a decision tool. The design and analysis of simulation. The use of simulation for estimation, and comparison of policies. Emphasis is primarily on applications in the areas of production management. Topics include modeling and programming simulations, random number and variate generation, statistical analysis of simulation output data. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 260 and (CS 112 or CS 102 or CS 114). Aut (K. Gökbayrak) Spr (K. Gökbayrak)*

IE 325 Stochastic Models

Markov chains. Basic queuing models and applications. Stochastic inventory models: periodic and continuous review. Introduction to stochastic maintenance models. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 250. Aut (Ü. Gürler, F. Ulus) Spr (Ö. Çavuş İyigün, S. Dayanık)*

IE 342 Engineering Economic Analysis

Analysis of engineering decisions; principles and methodology of comparing decision alternatives, such as various engineering designs, manufacturing equipment, or industrial projects. Dealing with uncertainty and risk; rational decision making when future outcomes are uncertain. Concepts of time value of money. Effects of depreciation, inflation, and taxation on economic decisions. Cost-benefit analysis of public projects. Replacement analysis. Introduction to financial engineering. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Uzun) Spr (A. G. Özbaygın, E. Uzun)*

IE 375 Production Planning

Design of production planning systems using mathematical, computational and other modern analytical techniques. Forecasting; integrated production-inventory systems; deterministic inventory and lot-sizing models; multi-echelon supply networks; machine scheduling and capacity planning. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202. Aut (N. K. Erkip, A. Toptal Bilhan) Spr (N. K. Erkip, A. Toptal Bilhan)*

IE 376 Production Information Systems

The role of computers and data bases in production systems. Fundamental concepts in developing integrated production management systems including ERP, lean production and JIT with emphasis on inventory, lead time, work-order management, shop floor control and group technology based parts classification and coding systems. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: IE 375. Aut (A. Şen) Spr (Ö. Karsu, A. Şen)*

IE 380 Quality Assurance and Reliability
Various philosophies and definitions of quality. Statistical process control. Process capability. Experimental design and the Taguchi methods for quality improvement. Acceptance sampling. Reliability. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 260. Aut (E. Nadar) Spr (Ç. Ararat, E. Nadar)*

IE 399 Summer Training II
A minimum of four weeks summer practice in a manufacturing or service organization; formulation of an IE problem and propose solutions to it; written report. *Credit units: None ECTS Credit Units: 6, Prerequisite: IE 299. Aut (O. Oğuz) Spr (O. Oğuz)*

IE 400 Principles of Engineering Management
Introduction to management analysis such as management layers, network analysis, project management via CPM/PERT networks, optimization concepts, linear programming, integer programming, and decision analysis; and economic concepts such as cash flow, interest rates, rate of return, demand supply relations, product pricing, taxes, inflation, and related subjects. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 220 or MATH 223 or MATH 225 or MATH 241. Aut (Ö. Karsu, O. Oğuz) Spr (O. Oğuz)*

IE 423 Forecasting Methods and Applications
Basic quantitative methods of forecasting, time series decomposition, regression methods, exponential smoothing, moving average (MA), autoregressive (AR) and autoregressive integrated moving average (ARIMA) models, brief introduction to autoregressive conditional heteroskedasticity (ARCH) and generalized ARCH (G-ARCH) models. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 260.*

IE 427 Introduction to Defense Analysis
Introduction to military operations research; firing theory, detection, sensors, search and screening, target defense, attrition models, force disposition and unmanned aerial vehicles. Contemporary issues such as the effect of information and technology in the presence of guided munitions and sensors. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202.*

IE 428 Project Scheduling
Introduction to project network analysis with CPM and PERT. Time-cost trade-off and learning curve analysis in relation to makespan minimization. Mathematical programming models for resource allocation and scheduling under resource constraints. Financial aspects including cash flow management. Exact and heuristic methods for solving the scheduling and resource management problems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202.*

IE 432 Quantitative Risk Management
Basic concepts and methods of risk management; the structure of risk and copulas; how to measure risk: VaR, coherent measures of risk, expected utility theory, the concept of stochastic dominance; extreme value theory; how to incorporate risk measures into stochastic optimization problems; applications in management, finance, and energy. *Credit units: 3 ECTS Credit Units: 6. Spr (Ö. Çavuş İyigün)*

IE 436 Simulation Experiment Design and Analysis
Data analysis for input modeling; statistical design and analysis of simulation experiments; introduction to response surface models and simulation metamodeling; simulation-based optimization; applications in manufacturing systems, service operations, and supply chain management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 324.*

IE 440 Introduction to Financial Engineering
Financial markets (bonds, stocks, futures, forwards, options, interest rates and their term structures), models of security prices (Brownian motion, geometric Brownian motions, Ornstein-Uhlenbeck processes, Cox-Ross-Rubinstein binomial model, Merton-Black-Scholes model), pricing and hedging financial derivatives (Ito's rule, stochastic integration, diffusion processes, probabilistic solutions of PDEs, no-arbitrage pricing in a complete market of futures, forwards, European and American type options, pricing in incomplete markets), Hedging with futures and options, bond hedging, numerical methods (pricing using trees, Monte-Carlo simulations, finite-difference methods), mean-variance analysis of portfolios, value at risk, optimal consumption and portfolio strategies (formulations and solutions of appropriate dynamic programming models and Hamilton-Jacobi-Bellman equations). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 250. Spr (Ç. Ararat)*

IE 441 Cost Analysis and Control
Fundamentals of managerial cost accounting practices applied to manufacturing and service organizations. Cost terms, cost-volume-profit analysis, job costing, activity based costing as bases of accounting systems. Master budgets and flexible budgets for planning and control. Determination of cost behaviour and pricing decisions, cost allocation and revenues for profitability analysis. *Credit units: 3 ECTS Credit Units: 6.*

IE 443 Multi-Objective Decision Analysis
Quantitative decision analysis. Structuring of objectives and value hierarchies, and determination of value functions. Introduction to consistent characterization of preferences under certainty. Value analysis under

uncertainty including expected value analysis, utility theory, multi-attribute risk aversion, certainty equivalent calculations and the analytical hierarchy process. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202. Spr (F. Ulus)*

IE 444 Operations Research in Finance

Bonds, interest rates, duration and convexity, bond portfolios, options, binomial model, early exercise options, dynamic programming in finance, portfolio optimization value-at-risk, robust portfolio optimization. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202.*

IE 448 Financial Issues in Engineering Projects

Analysis of investment and financial decisions from the perspective of top management in a corporation; financing methods and techniques including working capital, project finance, shareholder, export credit agency loans and derivatives; optimization of debt/equity ratios; business and risk analysis to meet the requirements of the financiers; corporate valuation methods and business plans; mergers and acquisitions. Case studies covering topics such as energy, infrastructure, privatizations and buyouts. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 342. Aut (H. S. Ergür) Spr (H. S. Ergür)*

IE 451 Applied Data Analysis

Introduction to exploratory data analysis, multivariate regression, semiparametric regression, scatterplot smoothing, linear mixed models, generalized linear models, recursive partitioning, and hidden Markov models through the applications on real data sets using the statistical software R. Applications to consumer choice models, modeling the number of emergency room visits, building e-mail spam filters, detecting fraudulent transactions, and other applications from manufacturing and service systems illustrating big data analytics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 260. Aut (S. Dayanık) Spr (S. Dayanık)*

IE 453 Energy Systems Planning

Historical trends of energy supply and demand; alternative energy resources and related technologies. Global climate change, security, reliability and economic issues in energy operations and planning problems. Energy demand and supply forecasting, energy modeling under uncertainty, intermittency and role of storage, grid operations and reliability, smart grid, and generation expansion planning. Case studies and problem solving techniques and methods applied in the pursuit of improved decision making in energy systems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202. Aut (A. S. Kocaman)*

IE 457 Sustainable Operations

Concepts of sustainability and sustainable operations. Evaluation and implementation of sustainability measures. Analysis of sustainable operations from the value chain perspective. Sustainable actions and policies at different phases in the product life cycle. The use of quantitative operations models and techniques to analyze and evaluate the viability of sustainable opportunities. Topics include Triple Bottom (3BL), Life Cycle Assessment, Carbon Disclosure, Remanufacturing, Material Choice and Sustainable Product Design, Logistics, Product Differentiation, Closed-Loop Supply Chains, LEED building, ISO 14001:2004, and Sustainable Resource Extraction. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Nadar)*

IE 467 Emerging Trends in Manufacturing

Advanced manufacturing processes, micro/nano manufacturing, physics based process modeling, additive manufacturing. *Credit units: 3 ECTS Credit Units: 6.*

IE 468 Pricing and Revenue Optimization

Estimation and optimization for pricing and revenue optimization. Review of price-demand functions. Pricing under constrained supply. Price differentiation. Customized pricing. Dynamic pricing and markdown management. Revenue management. Network revenue management. Overbooking. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202 and MATH 260. Aut (A. Şen)*

IE 469 Industrial Applications of Operations Research

Survey of optimization models in manufacturing, logistics and project management. Applications to real production contexts in project management, lot sizing, location, finite-capacity scheduling, and cutting stock. Use of Excel optimization tools. *Credit units: 3 ECTS Credit Units: 6. Aut (O. Arslan) Spr (E. Uzun)*

IE 477 Production Systems Design-Synthesis

Project team-work dealing with open-ended, interdisciplinary real-world problems. Analysis of real-world problems; design, implementation and testing procedures. Project skills, including problem definition, functional design specifications, conceptualization, analysis, and solution methods. Team dynamics, communication skills, time-management issues. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 325 and IE 375. Aut (M. S. Aktürk, N. K. Erkip, E. Uzun)*

IE 478 Production Systems Design-Practice

Continuation of the IE 477 course. Validation, verification and implementation of the developed methodologies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 477. Spr (M. S. Aktürk, N. K. Erkip, E. Uzun)*

IE 479 Distribution Logistics
Logistics network design; strategic, tactical, operational level decision making; location models, planning and controlling freight transportation; long-haul, short-haul, practical examples; projects and case studies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 202. Aut (B. Yetiş)*

IE 482 Humanitarian Logistics
Introduction to humanitarian operations; decision problems related to meeting the ongoing needs of the society; relief logistics; disaster management cycle; decision problems faced in preparing for, responding to, and recovering from disasters; the activities and challenges in the supply chain for the procurement, delivery, warehousing and distribution of the aid; practical examples, projects and case studies. *Credit units: 3 ECTS Credit Units: 6.*

IE 485 Decision Making in Health Care
Applications of decision sciences in health-care industry; methods to allocate health-care resources; decision making for health economics and medicine; decision analysis using Markov processes, Monte Carlo simulations; cost-effectiveness analysis; quality-adjusted life years. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Karsu)*

IE 490 Introduction to Research in IE and OR
Introduction to research techniques in industrial engineering and operations research. Independent study under the supervision of a departmental faculty member. Written and oral presentations to report research findings. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Uzun) Spr (A. S. Kocaman)*

IE 491 Introduction to Research in IE and OR II
Continuation of IE490 Introduction to Research in IE and OR. The same research problem under the supervision of the same faculty advisor as in IE490 investigated to get deeper and extended results. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: IE 490. Aut (E. Uzun) Spr (A. S. Kocaman)*

IE 496 Seminar in Production Systems
A series of seminars on issues of current interest to the practice of industrial engineering. *Credit units: None ECTS Credit Units: 1, Prerequisite: Senior standing in IE. Spr (M. S. Aktürk, N. K. Erkip)*

IE 500 Mathematics of Operations Research
Introduction to methods of proof, sets and functions, metric spaces, functions on metric spaces, differential and integral equations, fundamentals of linear algebra. *Credit units: 3 ECTS Credit Units: 7.5. Aut (N. Şahin)*

IE 505 Mathematical Programming
Fermat rule, lagrange multipliers, duality theory, Karush-Kuhn-Tucker conditions, convexity, conic optimization, linear optimization, networks, integer programming. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. Ç. Pınar)*

IE 513 Linear Programming
Theory, algorithms, and computational aspects of linear programming. Formulation of problems as linear programs. Development of simplex algorithm, geometry of simplex method, duality theory, and economic interpretations. Sensitivity analysis. Variants of simplex method. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. Ç. Pınar)*

IE 514 Network Flows
Flow problems on networks. Transportation and assignment problems, special purpose algorithms and advanced computational techniques. Maximum flow problem, theory, algorithms, and applications. Shortest paths. Minimum cost flows. Network simplex method. Multicommodity flow problems. Generalized networks. *Credit units: 3 ECTS Credit Units: 7.5. Aut (O. Karaşan)*

IE 515 Convex Analysis
Convex sets in IR and their basic properties, separation of convex sets, properties of convex polyhedra (and polytones). Convex functions continuity and differentiability properties, subdifferentiability, duality of convex sets, Fenchel dual of a convex function, bipolar theorem. Convex programming, dual convex programs, perturbation and lagrangian approaches to duality, the connection between the two approaches, saddle point theorems. Applications of convex analysis: inequalities, interior-point methods, approximation, merit functions. *Credit units: 3 ECTS Credit Units: 7.5. Spr (F. Ulus)*

IE 518 Discrete Optimization
The models and methods of integer programming. Structure of integer programs, pure integer and mixed integer programming problems. Zero-one programming, branch and bound methods. Cutting plane and polyhedral approach. Lagrangean relaxation. Applications to combinatorial optimization, heuristic methods and dynamic programming. Applications in resource allocation, facility location, scheduling, capital budgeting. Computer implementation. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 519 Approximation Algorithms
Combinatorial and mathematical programming techniques in approximation algorithms for NP-hard optimization problems. Greedy algorithms for vertex/set cover, approximation schemes via dynamic programming, rounding LP relaxations of integer programs, and semi definite relaxations. Implementation of selected algorithms using a high-level language. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 521 Stochastic Processes
Stochastic processes with independent increments, Wiener process and Poisson process. Non-homogeneous and compound Poisson processes. Discrete time Markov chains (classification of states, ergodic properties), random walks, branching processes. Continuous-time Markov processes, Kolmogorov's differential equations. Birth and death processes, applications to Markov queueing models. Non-Markov processes, renewal process, renewal reward process, alternating and regenerative processes, ergodic theorems. Semi-Markov processes. Applications in reliability and inventory models. Selected topics from stationary processes and time-series. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 523 Probabilistic Analysis
Axiomatic construction of probability theory, properties of probability, conditional probability, independence. Discrete and continuous random variables and vectors (distribution function, expectation, variance, moments). Chebyshev inequality and law of large numbers. Conditional expectation. Transformations of random variables. Generating and characteristics functions. Asymptotic methods in probability theory, types of convergence of random variables. Sums of independence random variables, central limit theorem, Poisson theorem. Selected topics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ç. Ararat)*

IE 528 Dynamic Programming
Deterministic and discrete-time stochastic dynamic programming. Markov Decision Process under discounted and average payoff criteria, Adaptive Control Processes, bandit problems, stochastic games, and applications. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 530 Advanced Logistics Modeling and Optimization
Modeling advanced logistics problems. Extensions of network design, location and routing problems and formulations. Solution methodologies. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 535 Stochastic and Risk-Sensitive Optimization
Models, solution methods, and theory for optimization problems under uncertainty and risk. Introduction to stochastic programming, optimization problems with probabilistic constraints, two-stage and multi-stage stochastic programming problems, Markov decision processes, utility functions, mean-risk optimization models, coherent measures of risk, and concept of stochastic dominance. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ö. Çavuş İyigün)*

IE 543 Multiple Criteria Decision Making
Discrete and continuous multiple criteria problems. Solution methods for multiple criteria decision making problems. Methods of generating nondominated solutions. Interactive approaches. Multiple criteria ranking and sorting techniques. Multiple criteria decision making applications. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 563 Game Theory with Applications in Operations Management
Introduction to Game Theory: Pre-commitment, the normal form, the extensive form; static games with complete information: pure strategy nash equilibrum, mixed strategy nash equilibrum; dynamic games with complete information: sub-game perfect equilibrum; games with incomplete information: bayesian nash equilibrum, perfect bayesian nash equilibrum; applications: oligopoly, supply chain management, queuing, competitive location. *Credit units: 3 ECTS Credit Units: 7.5. Aut (K. Göler)*

IE 568 Theory of Pricing and Revenue Management
An introduction to pricing and revenue management and their applications. Single-resource capacity allocation. Network capacity control. Modeling customer-behavior and market response. Estimation and forecasting for pricing and revenue management. Dynamic pricing. Assortment optimization. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Şen)*

IE 571 Analytical Models for Supply Chain Management
Theoretical and practical issues in the design and management of the supply chain. Logistic network configuration, risk pooling and multi-echelon inventory systems, value of information and bullwhip effect in supply chains, coordination of the supply chain using contracts, distribution strategies and strategic alliances for the supply chain and product design for supply chain efficiency. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 573 Theory of Machine Scheduling
An overview of computational complexity, heuristic problem solving, and implicit enumeration. Deterministic machine scheduling problems: single stage, open shop, flow shop, and job shop problems with single and parallel machines. Dynamic scheduling problems and priority dispatching. A survey of other scheduling problems. Applications in manufacturing systems. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 586 Computational Optimization
Strong models and valid inequalities. Extended formulations. Cutting plane and column generation algorithms. Decomposition approaches in deterministic and stochastic optimization. Applications in production planning, network design and logistics. *Credit units: 3 ECTS Credit Units: 7.5. Spr (H. Yaman Paternotte)*

IE 590 Research Topics in IE and OR
Seminars on research topics in industrial engineering and operations research. *Credit units: None ECTS Credit Units: 1. Aut (Ö. Çavuş İyigün) Spr (Ö. Çavuş İyigün)*

IE 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (H. Yaman Paternotte)

IE 614 Nonlinear Programming
Local and global optima. Newton-type, quasi-Newton, and conjugate gradient methods for unconstrained optimization. Kuhn-Tucker theory and Lagrangean duality. Algorithms for linearly constrained optimization, including steepest ascent and reduced gradient methods with applications to linear and quadratic programming. Nonlinearly constrained optimization including penalty and barrier function methods, reduced and projected gradient methods, Lagrangean methods. Computer implementation. *Credit units: 3 ECTS Credit Units: 7.5.*

IE 690 Advanced Research Topics in IExOR
Seminars on research topics in industrial engineering and operations research. *Credit units: None ECTS Credit Units: 1. Aut (Ö. Çavuş İyigün) Spr (Ö. Çavuş İyigün)*

IE 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (Staff) Spr (H. Yaman Paternotte)

DEPARTMENT OF MECHANICAL ENGINEERING

A. Akay (Chair), M. Z. Baykara, L. Biancofiore, M. Çakmakcı, B. Çetin, E. Y. Erdem, M. S. Hanay, A. Javili, Y. Karpat, O. Özcan, İ. Temizer, Y. Yıldız.

Part-time: Ö. A. Anlağan, Ş. F. Arınç, Ş. Baytaroğlu, B. E. Platin, M. Tohumcu.

The Mechanical Engineering Department offers programs that lead to B.S., M.S., and Ph.D. degrees.

The mission of our department is to provide our students with a rich environment for learning through a broad-based education in the scientific and applied foundations of engineering and a solid foundation in problem solving, design and communication skills that they will need to pursue and meet the challenges of their individual career goals.

The ME program provides the students a strong foundation in engineering sciences through thermo-fluids, mechanics and materials and dynamics and control tracks, which emphasize students' analytical abilities. These are combined with courses on design and manufacturing that address from component-to system-level design and emphasize the creativity of students.

The mission of the ME program is to prepare engineers for the global environment in which they can make responsible decisions while serving societal needs. The program emphasizes communication skills, knowledge of humanities, and ability to work in teams. The program also recognizes the significant role mechanical engineering can have in life sciences and thus the need for familiarity with molecular biology. A mandatory physics course that includes quantum mechanics further fosters interdisciplinary interaction beyond traditional boundaries.

The Department envisions future engineers as life-long learners. The ME program offers numerous electives to respond to the different needs and interests of our students along this vision in the leap to 21st century engineering.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
ME 101	Fundamentals of Mechanical Engineering	2 / 5
PHYS 101	General Physics I	4 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
ME 102	Introduction to Systems Engineering	3 / 6
PHYS 102	General Physics II	4 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CS 113	Introduction to Computing	4 / 7
GE 250	Collegiate Activities Program I	- / 1
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MATH 220	Linear Algebra	3 / 6
ME 211	Thermo-Fluids Engineering I	4 / 7
ME 231	Mechanics and Materials I	4 / 7

Spring Semester		Credits / ECTS Credits
CS 114	Introduction to Programming	4 / 7
GE 251	Collegiate Activities Program II	1 / 1

HUM 112	Cultures Civilizations and Ideas II	3 / 6
MATH 240	Differential Equations	3 / 6
ME 212	Thermo-Fluids Engineering II	4 / 7
ME 232	Mechanics and Materials II	4 / 7

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 201	Materials Science and Technology	3 / 6
ENG 401	Technical Report Writing and Presentation	2 / 4
MATH 230	Probability and Statistics for Engineers	3 / 6
ME 299	Summer Practice I	- / 6
ME 341	Dynamics and Control I	4 / 7
ME 371	Measurement and Instrumentation	3 / 6
	ME Elective	3 / 6

Spring Semester		Credits / ECTS Credits
HIST 200	History of Turkey	4 / 8
MBG 110	Introduction to Modern Biology	3 / 6
ME 342	Dynamics and Control II	4 / 7
ME 381	Design and Manufacturing	3 / 6
ME 384	Mechatronic Systems	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
GE 301	Science Technology and Society	2 / 3
ME 399	Summer Practice II	- / 6
ME 481	Mechanical Engineering Design I	3 / 6
	Engineering Elective	3 / 6
	Humanities or Social Science Elective	3 / 6
	ME Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
ME 482	Mechanical Engineering Design II	3 / 6
	Elective	3 / 6
	Engineering Elective	3 / 6
	Humanities or Social Science Elective	3 / 6
	ME Elective	3 / 6
	Science Elective	3 / 6

MECHANICAL ENGINEERING ELECTIVES

ME 343	Mechanical Vibrations	3 / 6
ME 361	Numerical Methods for Engineers	3 / 6
ME 362	Finite Elements	3 / 6
ME 401	Acoustics and Noise Control	3 / 6
ME 412	Introduction to Computational Fluid Dynamics	3 / 6
ME 430	Heat Exchanger Design	3 / 6
ME 431	Industrial Fluid Power	3 / 6
ME 432	Applied Thermodynamics	3 / 6
ME 436	Energy Conversion Systems	3 / 6
ME 440	Automotive Engineering	3 / 6
ME 442	Machinery Dynamics	3 / 6
ME 446	Applications of Solid Mechanics	3 / 6
ME 490	Undergraduate Research in ME	3 / 6
ME 500	Integrated Product Development	3 / 7.5
ME 501	Mathematical Techniques in Mechanical Engineering	3 / 7.5
ME 503	Numerical Methods in Mechanical Engineering	3 / 7.5
ME 511	Fluid Mechanics	3 / 7.5
ME 516	Tribology : Friction, Lubrication and Wear	3 / 7.5
ME 523	Molecular Simulation of Materials	3 / 7.5

ME 525	Introduction to Nanomechanics	3 / 7.5
ME 543	Sound and Vibration	3 / 7.5
ME 550	Continuum Mechanics	3 / 7.5
ME 552	The Finite Element Method	3 / 7.5
ME 554	Mechanics of Composite Materials	3 / 7.5
ME 555	Cellular Biomechanics	3 / 7.5
ME 557	Metal Cutting Principles	3 / 7.5
ME 565	Dynamics	3 / 7.5
ME 571	Advanced System Modeling	3 / 7.5
ME 575	Micro/Nano Robotics	3 / 7.5
ME 576	Linear Control System Design	3 / 7.5
ME 578	Vehicle Control Systems	3 / 7.5
ME 579	Adaptive Control Systems	3 / 7.5
ME 580	Introduction to MEMS and Micro Systems	3 / 7.5
ME 582	Fundamentals of Design for Reliability	3 / 7.5
ME 615	Microfluidics	3 / 7.5
ME 631	Conductive Heat Transfer	3 / 7.5
ME 657	Nano/Micro Manufacturing	3 / 7.5

GRADUATE PROGRAM

The Department of Mechanical Engineering offers M.S. and Ph.D. degree programs with the possibility of specialization in different areas of research in mechanical engineering.

Master of Science in Mechanical Engineering

Admission: All applicants are required to have a B.S. degree in mechanical engineering, or in a related field of science or engineering. Students with a B.S. degree in areas other than mechanical engineering may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
ME 599	Master's Thesis	- / 56
	Graduate Electives (2)	6 / 15
	Graduate Elective or Undergraduate Elective	3 / 6
	ME Graduate Elective	3 / 7.5
	ME Graduate Mathematical Elective	3 / 7.5
	ME Graduate Seminar	- / 1
	Restricted ME Graduate Technical Electives (2)	6 / 15

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.* There are further restrictions on the elective courses to fulfill departments breadth requirements.

Graduate Elective or Undergraduate Elective Courses: All 3XX or higher level CHEM, CS, EEE, IE, MATH, ME, MBG, MSN and PHYS coded courses with at least 3 credits.

ME Graduate Elective Courses: All 5XX or higher level ME coded courses with at least 3 credits.

ME Graduate Mathematical Elective Courses: ME 501, ME 503, ME 552

Restricted ME Graduate Technical Elective Courses: Selected 5XX or higher level ME coded courses with at least 3 credits and EEE 501.

Doctor of Philosophy in Mechanical Engineering

Admission: All applicants are required to have a M.S. degree with thesis in mechanical engineering, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
ME 699	Ph.D. Dissertation	- / 140
	Graduate Electives (3)	9 / 22.5
	ME Graduate Elective	3 / 7.5
	ME Graduate Mathematical Elective	3 / 7.5
	ME Graduate Seminar	- / 1
	Restricted ME Graduate Technical Electives (2)	6 / 15

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science. There are further restrictions on the elective courses to fulfill departments breadth requirements.

ME Graduate Elective Courses: All 5XX or higher level ME coded courses with at least 3 credits.

ME Graduate Mathematical Elective Courses: ME 501, ME 503, ME 552

Restricted ME Graduate Technical Elective Courses: Selected 5XX or higher level ME coded courses with at least 3 credits and EEE 501.

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

COURSE DESCRIPTIONS

ME 101 Fundamentals of Mechanical Engineering
Introduction to Mechanical Engineering. Analysis of real engineering problems using mechanical engineering principles. *Credit units: 2 ECTS Credit Units: 5. Aut (A. Akay, O. Özcan) Spr (O. Özcan)*

ME 102 Introduction to Systems Engineering
Treatment of engineering problems from a systems perspective and a unified application of mechanical engineering principles, introduction to and use of CAD systems and group projects. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Çetin, M. Tohumcu)*

ME 211 Thermo-Fluids Engineering I
First law of thermodynamics, first law in differential form, thermal resistance approach for heat transfer, fundamentals of fluid mechanics, thermodynamic properties, open systems, thermodynamic cycles, second law, refrigeration, heat pump, power cycles. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 101 and ME 101 and PHYS 101. Aut (E. Y. Erdem)*

ME 212 Thermo-Fluids Engineering II
Differential analysis of fluid flow, laminar and turbulent flow, head loss, boundary layer, drag and lift, conductive heat transfer, forced and natural convection, heat exchangers, radiative heat transfer. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 102 and ME 211. Spr (L. Biancofiore, E. Y. Erdem)*

ME 231 Mechanics and Materials I
Introduction to statics, Average stress and strain, Linear elasticity, Axial loading, Torsion, Bending, Deflection of beams and shafts, Transverse shear stress, Combined loadings, Energy methods. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 101 and ME 101 and PHYS 101. Aut (M. Z. Baykara)*

ME 232 Mechanics and Materials II
Three-dimensional stress and strain, Stress and strain transformation, Failure criteria, Stress-strain curve, Plasticity, Fracture of cracked members, Fatigue crack growth, Stress- and strain-based approach to fatigue. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 102 and ME 231. Spr (M. Z. Baykara)*

ME 299 Summer Practice I
A minimum of four weeks summer practice in a manufacturing organization; observation of organization in its original settings; written report. *Credit units: None ECTS Credit Units: 6, Prerequisite: ME 211 and ME 231. Aut (Ş. Baytaroğlu) Spr (Ş. Baytaroğlu)*

ME 341 Dynamics and Control I
Modeling and control of dynamical systems. Particles, groups of particles and motion of solids, effects of forces, kinematics, Lagrange equations. Solutions in time and frequency domains. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: (MATH 240 and ME 231 and PHYS 102) or (MATH 242 and ME 231 and PHYS 102) . Aut (M. Çakmakcı, M. S. Hanay)*

ME 342 Dynamics and Control II
Parametric modeling of systems and their analysis and control. Linear system theory, Laplace Transforms, transfer functions, introduction to feedback controls, root-locus analysis. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: (ME 341 and MATH 220) or (ME 341 and MATH 241). Spr (M. Çakmakcı)*

ME 343 Mechanical Vibrations
Free and forced vibrations of single- and multi-degree-of-freedom systems. Fundamentals of modal analysis, damping and vibration control methods. Vibration measurement and anaylsis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ME 341 and MATH 240) or (ME 341 and MATH 242) .*

ME 361 Numerical Methods for Engineers
Taylor series and approximation errors, solving systems of linear and nonlinear equations, curve fitting and interpolation, numerical differentiation and integration, applications to systems of ordinary differential equations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 114 and (MATH 220 or MATH 241) and (MATH 240 or MATH 242). Aut (Ş. F. Arınç)*

ME 362 Finite Elements
Solving partial differential equations of mechanics numerically. Fundamentals of the finite element method including weak form, shape functions, isoparametric approximation, Gauss quadrature, element types, assembly operation, sparsity pattern with application to 2D problems. Self-written finite element code in MATLAB. Computationa simulations of elastic materials and stress analysis using the MATLAB code. Domian discretization, pre-processing and post-processing aspects. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CS 114 and (MATH 220 or MATH 241) and (MATH 240 or MATH 242). Spr (A. Javili)*

ME 371 Measurement and Instrumentation
Principles of experiment design, measurement, recording and analysis of force, strain, temperature, flow, and acceleration. Principles of impedance match, measurement circuits, MEMS sensors, Fourier transfer, and

applications of probability and statistics. Use of typical laboratory equipment such as oscilloscopes, frequency analyzers, operational amplifiers, and thermo couples. *Credit units: 3 ECTS Credit Units: 6. Aut (Ş. Baytaroğlu, O. Özcan)*

ME 381 Design and Manufacturing
Engineering materials, bulk deformation processes, material removal processes and machines, sintering, polymeric materials processes, additive manufacturing, economic and quality considerations, design principles, machine elements. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 201 and ME 102 and ME 232. Spr (Ö. A. Anlağan)*

ME 384 Mechatronic Systems
IIntroduction to analog electronics, semiconductor electronics, operational amplifiers and analog signal processing, digital electronics, microcontrollers, actuators, sensors, data acquisition, systems integration. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ME 341 and MATH 220) or (ME 341 and MATH 241). Spr (M. S. Hanay)*

ME 399 Summer Practice II
A minimum of four weeks summer practice in an engineering company; formulation of an ME problem and proposal for solutions to it; written report. *Credit units: None ECTS Credit Units: 6, Prerequisite: ME 342 and ME 371 and ME 381. Aut (Ş. Baytaroğlu) Spr (Ş. Baytaroğlu)*

ME 412 Introduction to Computational Fluid Dynamics
Finite volume methods (FVM) as a means of solving different type of differential equations that arise in fluid dynamics. Fundamentals of numerical analysis, ordinary differential equations and partial differential equations related to fliuid mechanics and heat transfer. Error control and stability considerations. Numerical solutions to the Navier-Stokes equations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 240 and ME 212. Spr (L. Biancofiore)*

ME 430 Heat Exchanger Design
Principles of design, manufacture, and use of major types of heat exchangers. Applications of thermodynamics, heat transfer, fluid mechanics laws, and emprical relations for common heat exchangers including boilers, condensors, evaporators, and cooling towers. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 212.*

ME 431 Industrial Fluid Power
Basic principles, introduction to hydraulic and pneumatic power systems. Hydraulic power systems: hydraulic fluids; distribution system; energy input and transfer devices; energy modulation devices; energy output and transfer devices; other components such as reservoirs, filters, and accumulators; system design and circuit analysis. Pneumatic power systems. Case studies. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 212 and ME 342. Spr (Staff)*

ME 432 Applied Thermodynamics
Design and analysis of devices and thermal processes using principles of thermodynamics. Examples include nuclear power stations, jet engines, energy conversion, internal combustion engines, desaliniation and others. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 212. Aut (B. Çetin)*

ME 440 Automotive Engineering
Automotive components. Modeling of vehicle dynamics. Maximum speed and acceleration calculations. Wheels and tires. Brake systems and performance. Suspension system and geometry. Steering system and geometry. Aerodynamics drag and effects on vehicle performance. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 341. Aut (M. Çakmakcı)*

ME 442 Machinery Dynamics
Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 232 and ME 341. Spr (O. Özcan)

ME 446 Applications of Solid Mechanics
Introduction to elasticity theory; tension-compression, continuity equations. Advanced strength of materials: torsion of axisymmetric cross sections, curved beams, thick-walled cylinders. Mechanics of composite materials. Introduction to layered materials and applications. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 232.*

ME 481 Mechanical Engineering Design I
Development of a mechanical engineering project, design procedures, design selection, engineering statement of customer preferences, ethical and professional responsibilities of engineers. Projects lead to products. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (CHEM 201 and ME 212 and ME 232 and ME 342 and ME 371 and ME 381 and ME 384) and (ENG 400 or ENG 401) . Aut (M. Tohumcu, Y. Yıldız)*

ME 482 Mechanical Engineering Design II
Group project stressing the mechanical engineering design principles. Projects spanning from conceptual development to working products. Reports explaining the projects, design steps, analyses complemented by oral presentations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ME 481. Spr (M. Tohumcu, Y. Yıldız)*

ME 490 Undergraduate Research in ME
Introduction to research techniques in mechanical engineering. Independent study on a research topic under the supervision of a faculty member. Documentation of the results for evaluation by the supervisor. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

ME 500 Integrated Product Development
Basic review of systems engineering concepts, integrated product development (IPD) context, life cycle of an integrated product, key features of IPD, time and cost analysis of IPD, management of IPD, IPD examples, term project. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 501 Mathematical Techniques in Mechanical Engineering
Ordinary differential equations and introduction to partial differential equations, series solutions, Fourier, Bessel and Legrendre functions, boundary value problems and eigenfunction expansions; calculus of variations. Classical partial differential equations related to mathematical physics, including Laplace transformation and the method of separation of variables. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Çetin)*

ME 511 Fluid Mechanics
Development and application of control volume forms of mass, momentum and energy conservation laws, differential forms of these laws in Eulerian and Lagrangian coordinates, and Navier-Stokes equations. Applications to problems in incompressible and compressible laminar flows, boundary layers, hydrodynamic lubrication, transient and periodic flows, thermal boundary layers, convective heat transfer, and aerodynamic heating. *Credit units: 3 ECTS Credit Units: 7.5. Aut (L. Biancofiore)*

ME 516 Tribology : Friction, Lubrication and Wear
Introduction to the field of tribology. Fundamental principles of friction, lubrication, and wear from a mechanical engineering point of view. Surface roughness, contact between surfaces, adhesion, macroscopic laws of friction, fluid film lubrication, boundary lubrication, wear mechanisms, nanotribology. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 523 Molecular Simulation of Materials
Review of continuum field theories, atomistic potentials, molecular statics, discrete-to-continuum transition, finite element implementation, calculation of various material properties. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Javili)*

ME 525 Introduction to Nanomechanics
Linear atomic chains, lattice vibrations in 2D and 3D. Properties of phonon gas. Elasticity relations. Piezoelectricity. Static and dynamic deformations of solids. Accelerometers, gyroscopes and resonant mechanical sensors. Nanomechanical measurement techniques, dissipation and nonlinearity in nanomechanics. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 543 Sound and Vibration
Forced and free oscillations, frequency and impulse response of mechanical systems. Wave propagation in solids and fluids. Interaction of waves with boundaries, transmission, reflection, and absorption. Radiation and scattering of sound and interference. Waveguides and cavities. Wave propagation in periodic structures. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Akay)*

ME 550 Continuum Mechanics
Introduction to the fundamental concepts and tools for mechanics. Overview of tensor calculus, the kinematics of deformation, concepts of stress, strain, linearization, objectivity and the balance laws for mass, momentum and energy. Materials modeling aspects such as constitutive laws and material symmetry applications to solid and fluid mechanics. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 552 The Finite Element Method
Numerical solution of partial differential equations describing engineering problems. Fundamentals of the finite element methods including the weighted residual method, shape functions, numerical integration, assembly and error analysis by solving 1D linear second order elliptic equations technique and extension to 2D and 3D elliptic problems. Fourth order equations, time-dependent parabolic and hyperbolic partial differential equations and non-linear problems. Applications problems in applied mechanics, elasticity, vibrations, heat conduction, and others. Background required in calculus, linear algebra and differential equations. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 554 Mechanics of Composite Materials
Introduction to metallic, ceramic and polymeric composites and their manufacturing. Microstructural descriptors for unidirectional, short-fiber and particular composites. Macro- and micromechanical analysis. Statistical aspects of composite strength. Fatigue and time-dependent deformation. *Credit units: 3 ECTS Credit Units: 7.5, Prerequisite: CHEM 201 and ME 232.*

ME 555 Cellular Biomechanics
Fundamental concepts and experimental techniques in molecular biology, statistical mechanics of polymers, review of solid and fluid mechanics. Mechanics of cellular polymers. Polymer networks and cytoskeleton. The

role of stress in cytoskeleton dynamics as related to cell growth, spreading, motility and adhesion. Cellular mechanotransduction. Current research topics in cellular biomechanics. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 557 Metal Cutting Principles
The basic principles of metal cutting. The mechanics of metal cutting, heat generation during metal cutting, modern cutting materials, tool life and tool wear, cutting fluids, surface roughness generated by cutting actions, chip control, economics of cutting, chatter vibration, abrasive machining and non-conventional machining processes. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ö. A. Anlağan)*

ME 565 Dynamics
Kinematics of particles and rigid bodies; dynamics of a particle, systems of particles and rigid bodies; central force fields, orbits and trajectories variable mass systems; Lagrange's equations of motion; Hamilton's Principle; variational methods; and applications to dynamics problems and the fundamentals of gyroscopes. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. S. Hanay)*

ME 571 Advanced System Modeling
Modeling of linear and nonlinear dynamical systems that have components from mechanical, electrical, chemical, thermal and fluidic domains. State space models, interaction between domains, time and frequency domain analysis. Control system design using root locus and bode plots. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Y. Yıldız)*

ME 576 Linear Control System Design
Frequency response and root locus analysis and design; engineering applications. Static error coefficients, log-magnitude diagrams, polar plots and Nyquist diagram, Nyquist stability criterion, relative stabililty analysis, closed-loop frequency response specifications, constant M and N circles and Nichols charts. Design and compensation techniques. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. E. Platin)*

ME 579 Adaptive Control Systems
Control systems with undetermined or time-varying parameters, theory and application of self-tuning and model reference adaptive control for continuous and discrete-time deterministic systems, methods for estimation and control, stability of nonlinear systems, adaptation laws, and design and application of adaptive control systems. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Y. Yıldız)*

ME 580 Introduction to MEMS and Micro Systems
Analysis of microelectromechanical systems (MEMS), design of microsystems, components of MEMS devices such as beams, folded suspensions and their analysis & design metrics, beams as micromechanical springs, clean room fabrication techniques, MEMS sensors, accelerometers, gyroscopes, resonant mass/force sensors, MEMS actuation methods, measurement and noise analysis of MEMS devices.
Credit units: 3 ECTS Credit Units: 7.5.

ME 582 Fundamentals of Design for Reliability
Comprehensive definition of reliability. Introduction to reliability engineering, its basic definitions, applications and benefits. Confidence intervals and levels. Concept of target reliability. Case histories from aerospace, military, process control and power systems applications. Basic statistical and analytical functions and distribution types used by reliability engineers. Reliability analysis during the design phase. Qualification tests for components and assemblies. Interfaces of reliability, maintainability and risk engineering. Design guidelines for reliability, maintainability and quality. Statistical reliability testing. Reliability during the production phase. Standards about aerospace, defense and nuclear engineering. System reviews and related checklists. Construction of fault trees and fault tree analysis. Design of reliability testing. Failure causes and types. Effects of environmental conditions, age, mission time and stress. Mission profile and requirements. Failure modes, effects and criticality analysis and two different methods supported by examples. Ageing testing methods. Role of reliability departments in engineering organizations and systems projects. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. Tohumcu)*

ME 590 Mechanical Engineering Seminar
Participation in university-wide departmental research seminars. Discussion of scientific and technological aspects with supervising faculty. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

ME 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

ME 615 Microfluidics
Pressure-driven and electrokinetically-driven flows in microchannels, surface effects, micro-fabrication methods, micro/nanoparticles for biotechnology, biochemical reactions and assays, mixing and separation, two-phase flows, integration and design of microfluidic chips. *Credit units: 3 ECTS Credit Units: 7.5.*

ME 631 Conductive Heat Transfer
Focuses on exact (separation of variables, integral transform techniques and Green's function method) and approximate analytical methods (integral method and variational formulation) to solve problems of conduction heat transfer. Covered topics include heat conduction in Cartesian, cylindrical and spherical coordinates at

steady state as well as the transient processes, steady periodic problems, Duhamel's theorem, heat conduction through composite medium, heat conduction with a moving heat source. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Çetin)*

ME 657 Nano/Micro Manufacturing
Lithography, laser processes, mechanical micro-manufacturing, measurement techniques, micro-electrochemical machining, e-beam lithography and ion-beam machining, micro-stereolithography techniques, soft lithography, nanofabrication, nanoimprinting, clean room processes. *Credit units: 3 ECTS Credit Units: 7.5. Spr (E. Y. Erdem)*

ME 690 Mechanical Engineering Seminar
Participation in university-wide departmental research seminars. Discussion of scientific and technological aspects with supervising faculty. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

ME 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (Staff) Spr (Staff)

FACULTY OF HUMANITIES AND LETTERS

Hitay Özbay, Ph.D., Acting Dean
Mehmet Kalpaklı, Ph.D., Assoc. Dean

The Faculty of Humanities and Letters comprises six departments and three teaching units:

- American Culture and Literature
- Archaeology
- English Language and Literature
- Philosophy
- Translation and Interpretation
- Turkish Literature

The Faculty of Humanities and Letters comprises six departments and three teaching units. The departments of American Culture and Literature, Archaeology, English Language and Literature, Philosophy, and Translation and Interpretation all have Bachelor of Arts (B.A.) programs. In addition, the Department of Turkish Literature offers graduate programs leading to Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) degrees, while the Department of Archaeology and Department of Philosophy have M.A. programs with thesis work, and the Department of Translation and Interpretation has a non-thesis MA program in Conference Interpretation.

The Faculty also houses three non-degree-granting units (FRL, CCI, TURK) which offer university-wide service courses. Foreign Languages unit offers French, German, Italian, Japanese, Russian, Spanish, Chinese, Arabic, Persian, Korean, Hebrew and Turkish language for foreigners. The Cultures, Civilizations and Ideas unit offers humanities courses to students from various departments in the university. The Turkish Unit offers mandatory Turkish writing courses to all students who are Turkish nationals.

ACADEMIC STAFF

Istvan Albert Aranyosi, Assistant Professor (on leave)
Ph.D., Philosophy, Central European University, 2005. Metaphysics, philosophy of mind.

Sema Aydın, Instructor
M.A., German Language and Literature, Hacettepe University, 1989.

Aylin Bayrakçeken Akın, Assistant Professor
Ph.D., English Language and Literature, Hacettepe University, 1996.

Julian Bennett, Associate Professor
Ph.D., Archaeology, University of Newcastle upon Tyne, 1991. Roman provinces and frontier studies, cultural heritage, archaeological drafting and surveying.

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Ph.D., Philosophy, University of Leeds, 2000. Moral and Political Philosophy, Ancient Philosophy, Feminist Philosophy.

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Ph.D., Philosophy, Oxford University, 2005. Logical positivism, philosophy of logic, Kant, possible worlds, philosophy of science.

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Ph.D., Management, University of Baghdad, 1994. Arabic.

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B.A., Italian Language and Literature, Ankara University 1991.

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Ph.D., History, University of California, Irvine, 1993. 20th century US cultural, intellectual, and social history. Critical theory, history of the foundations and social sciences in the US, family and gender history.

Ayşe Candoğan, Instructor
B.A., Italian Language and Literature, Ankara University, 1992.

Cenk Cangır, Instructor
B.A., French Language and Literature, Hacettepe University, 1989.

William Norman Coker, Assistant Professor
Ph.D., Comparative Literature, Yale University, 2010. German literature and intellectual history.

Costantino Costantini, Instructor
Ph.D., Comparative Literature, Emory University, 2001. Classics, French and Italian literature, theory.

Gülay Çayan, Instructor
B.A., German Language Teaching, Hacettepe University, 1992.

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Ph.D., Rice University, 2006. 19th-century British and American literature, liberalism, history of globalization.

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Ph.D., American Literature, Hacettepe University, 1998. A.D.L.T.M., Cambridge University, 1997.

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B.A., French Language and Literature, Ankara University, 1994.

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Ph.D., American Studies, University of Iowa, 1986. Modern African-American novel, American novel, 1865-1945; representations of the City, Ethnicity and Migration.

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B.A., Spanish Language Teaching, Corazon de Maria University, 1970.

Yıldız Fakıoğlu Gökduman, Instructor
B.A., French Language Teaching, Hacettepe University, 2012.

Patrick Flaherty Fessenbecker, Assistant Professor
Ph.D., 19th Century British Literature, John Hopkins University, 2014.

Charles Varner Gates, Senior Lecturer
Ph.D., Classical Archaeology, University of Pennsylvania, 1979. Aegean Bronze Age, Greek art and archaeology, Byzantine art and archaeology.

Marie Henriette Gates, Associate Professor
Ph.D., Ancient Near Eastern Languages and Literatures, Yale University, 1976. Archaeology of Mesopotamia, archaeology of Egypt, archaeology of Syria and Palestine, archaeological method and theory.

Ali Turan Görgü, Instructor
M.A., Teaching of Turkish, Gazi University, 1998.

Barbara Gülen, Instructor
M.S., English Language Teaching, Middle East Technical University, 1987.

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B.A., French Language Teaching, Gazi University, 1988.

Mihaela P. Harper, Assistant Professor
Ph.D., University of Rhode Island, 2012. Department of English. Twentieth century and contemporary literature.

Patrick Hart, Assistant Professor
Ph.D., English Studies Department, University of Strathclyde, 2011. Renaissance Literature, Renaissance poetry in England and Scotland, particularly in the Petrarchan mode; modernist and contemporary experimental poetry.

John Spencer Hawkins, Assistant Professor (on leave)
Ph.D., Comparative Literature, University of Michigan, 2014.

Dragan Ilic, Instructor
Ph.D., Comparative Literature, University of Colorado (Boulder), 2014.

Craig Ireland, Lecturer
Ph.D., Theory and Epistemology of Literature, Université de Montréal, 2000. Social and literary theory, public sphere theory, Western Marxism, Cultural Studies, 18th to 20th-century Western intellectual and cultural history.

Tanju İnal, Professor
Ph.D., French Literature, University of Poitiers, 1968. Contemporary French literature, critical approach, translation.

Daniel Peter Johnson, Assistant Professor (on leave)
Ph.D., History, State University of New York at Binghamton, 2011. 17th and 18th century American social and Cultural history, early modern imperialism and popular politics, Historiography and social theory.

Mehmet Kalpaklı, Associate Professor
Ph.D., Turkish Literature, University of Washington/İstanbul University, 1992. Ottoman literature and cultural history, Near Eastern languages and literature, modern Turkish literature, theory of literature, use of computers for humanities.

Engin Karacaören, Instructor
Ph.D., Spanish Language and Literature, Ankara University, 2002.

Valerie June Kennedy, Assistant Professor
Ph.D., English Literature, University of East Anglia, 1979. Victorian fiction, 20th century fiction, postcolonial writing, travel writing.

Nazım Keven, Assistant Professor
Ph.D., Philosophy - Neuroscience - Psychology, Washington University in St. Louis, 2016. Philosophy of Cognitive Science, Neurophilosophy, Moral Psychology.

Paul Elliot Kimball, Instructor
Ph.D., Classics (concentration in ancient history) State University of New York at Buffalo, 2004. Hellenistic and late antique history, Byzantine social and cultural history, Greek religion, myth and ritual.

Edward Kohn, Associate Professor
Ph.D., History, McGill University, 2000. US History, 20th century US foreign relations; Theodore Roosevelt.

David Kovacs, Assistant Professor
Ph.D., Philosophy, Cornell University, 2016. Metaphysics and Philosophy of Mind.

Gül Kurtuluş, Instructor
Ph.D., English Literature, Bilkent University, 1997. Modern drama, 16th and 17th century English Literature, Modern British and American short fiction.

Daniel Harrison Leonard, Assistant Professor
Ph.D., Colombia University, 2007. Enlightenment, French Literature and philosophy, aesthetics, history of science.

Sjoerd Levelt, Assistant Professor
Ph.D., Combined Historical Studies, The Warburg Institute, University of London, 2010.

Joanna Gwen Mansbridge, Assistant Professor
Ph.D., English, Graduate Center, City University of New York, 2010. American Theater, Performance Studies, Film and Visual Culture, Gender Studies, Dramaturgy.

Jacques Morin, Instructor
Ph.D., Classics, McGill University, 1991. Greek and Roman art and archaeology, Aegean prehistory.

Nurdane Mumcu, Instructor
M.A., Turkish Language and Literature, Ankara University, 2002.

Mukaddes Mutluer, Instructor
B.A., German Language and Literature, Hacettepe University, 1976.

Mustafa Nakeeb, Visiting Assistant Professor
Ph.D., Philosophy, State University of New York at Buffalo, 1999. Philosophy, ancient philosophy (Plato), ancient historiography, philosophy of history.

Alexandra Noyanalpan, Instructor
M.A., Linguistics, Roven University France, 2013.

Saeko Ohashi, Instructor
B.A., Japanese Language and Education, Gifu University, 1979.

Ayşe Şirin Okyayuz, Assistant Professor
Ph.D., Department of Linguistics, Hacettepe University, 2001.

Michael Kurt Ozment, Visiting Assistant Professor
Ph.D., Comparative Literature, University of California, 2007. Aesthetics, literary theory, poetry.

Özlem Özduran, Instructor
B.A., Italian Language and Literature, Ankara University, 1990.

Güçlü Özkök, Instructor
M.A., French Language and Literature, Hacettepe University, 1995.

Valery C. E. Paternotte, Instructor
Ph.D., Environmental Management,Universite Libre de Bruxelles, 2002.

Andrew Jonathan Ploeg, Assistant Professor
Ph.D., English, University of Rhode Island, 2012. Post modern and contemporary American literature.

Jennifer Andrea Reimer, Assistant Professor
Ph.D., Ethnic Studies, University of California, Berkeley. Race, ethnicity, and gender in American literary and cultural studies, immigration and Diaspora studies, Latino/a Studies, and creative writing.

Özlem Saçak, Instructor
M.A., Italian Language and Literature, Ankara University, 1993.

Zeynep Seviner, Assistant Professor
Ph.D., Near and Middle Eastern Studies, University of Washington, 2015. Literary Market and Modern Authorship in the Late Ottoman Empire.

Neda Siami, Instructor
M.A., French Language and Literature, Beheshti University, 2002.

Kory Spencer Sorrell, Assistant Professor
Ph.D., Pennsylvania State University, 2000. American pragmatism, ethics, international human rights, and feminist epistemology and moral theory.

Şengül Soytetir Şentürk, Instructor
Ph.D., German Language and Literature, Hacettepe University, 1999.

Cory Douglas Stockwell, Assistant Professor
Ph.D., University of Minnesota, Comparative Literature, 2010. 18th and 20th century comparative literature.

Yasemin Tanbi, Instructor
M.A., Translation and Interpretation, Atılım University, 2011.
Gülnara Tanrıkulu, Instructor
Ph.D., Russian Language and Literature, Şevçenko Russian University , 1988.
Burcu Taşkıran, Instructor
M.A., Graduate School of Education, Bilkent University, 2002.
Dominique Selin Tezgör Kassab, Professor
Ph.D., State Doctorate, History of Civilization and Archaeology, University of Human Sciences of Dijon, 1993.
Buson Zelda Turan, Instructor
B.A., French Language and Literature, Hacettepe University, 1982.
İbrahim Turan, Instructor
Ph.D., Education, Hacettepe University, 1998.
Nurhan Turgut, Instructor
M.A., German Language and Literature, Hacettepe University, 1996.
Buffy Ann Turner, Instructor
Ph.D., Comparative Literature, Purdue University (Indiana), 2014.
Rina Michaela Tzinman, Instructor
Ph.D., Philosophy, University of Miami, 2016. Metaphysics and Philosophy of Mind.
Seda Uyanık Tanrıverdi, Instructor
Ph.D., Turkish Literature, Bilkent University, 2011.
Lars Roland Vinx, Assistant Professor
Ph.D., Philosophy, University of Toronto, 2006. Political philosophy and history of political thought, philosophy of law, medieval and early modern philosophy.
Simon Drummond Wigley, Associate Professor
Ph.D., Political Philosophy, London School of Economics and Political Science, 1998. Political Philosophy, Ethics, distributive justice, responsibility, desert, well-being.
William Giles Wringe, Assistant Professor
Ph.D., Philosophy, University of Leeds, 2000. Philosophical logic, Epistemology.
Burçak Yakıcı, Instructor
M.A., Professional Translation (Eng.F.-Turk.) ITIRI, Strasbourg, France, 2010.
Heather Hei Tai Yeung, Assistant Professor
Ph.D., University of Durham, 2012. Poetry and poetics, literary theory, contemporary literature and the arts.
Thomas Zimmermann, Assistant Professor
Ph.D., Regensburg University, 2006. European and Anatolian prehistory and protohistory, Archaeometallurgy.

PART-TIME ACADEMIC STAFF

Mariela Del Carmen Aguirre Fidan, B.S., Food Safety and Hygiene, National University of the Littoral, 2002.
Ayşe Akıncı Candoğan, B.A., Translation and Interpreting, Hacettepe University, 2000.
Ekrem Aksoy, Ph.D., Hacettepe University, French Language and Literature, 1989.
Rukiye Aslıhan Aksoy Sheridan, Ph.D., History, Bilkent University, 2016.
Ayşe Aslı Alanat Kılıç, M.A., Conference Interpreting, Bilkent University, 2009.
Luidmyla Alyeksyeyenkova, M.S., Mechanical Engineering, Kiev Polytechnic Institute, Ukranie, 1982.
Nurdan Arslan Göçmen, M.A., Faculty of Education, Başkent University , 2012.
Fatih Aşan, B.A., Law, TOBB University of Economy and Technology, 2014.
Ayşegül Avcı, Ph.D., History, Bilkent University, 2016.
Özgecan Aydın, M.A., Settlement Archaeology, Graduate School of Social Sciences, METU, 2009.

Melek Aydoğan, B.A., Turkish Language and Literature, Hacettepe University, 2009.
Yiğit Bener, B.A., Faculty of Medicine (ULB-Belgique), 1982.
Kutlay Bensan, B.A., Translation and Interpretation Boğaziçi University, 1992.
Nurten Bulduk, M.A., Museum Studies, Yıldız Teknik University, 2011.
Taner Can, Ph.D., English Language and Literature, Ankara University, 2011.
Mehpare Çelik, B.A., Civil Engineering, Ankara University, 1972.
Cihan Demir, M.A., History, Bilkent University, 2014.
Nurbanu Demirtaş, B.A., Turkish Language Education, Başkent University , 2013.
Özlem Doğan, B.A., Spanish Language and Literature, Ankara University, 2000.
Ragıp Duran, B.A., Faculty of Law, University of Aix-Marseille, 1978.
Ahmet Barış Ekiz, M.A., Turkish Literature, Bilkent University, 2016.
Cahide Ekiz, M.A., European Politics, Business and Law, University of Surrey (U.K.), 2004.
Kudret Emiroğlu, B.A., International Relations, Ankara University, 1979.
Müfit Erdoğan, B.A., French Language and Literature, Ankara University, 1967.
Uğur Ermez Yetkin, B.A., Political Science and Public Administration, Hacettepe University, 2007.
Ayşen Gençtürk, M.A., Graduate School of Education, Bilkent University, 2013.
Nebahat İlgi Gerçek, Ph.D., Hittite and Mesopotamian Studies, University of Michigan, 2012.
Adem Gergöy, B.A., Turkish Language and Literature, Kocaeli University, 2011.
Ahu Gümüşkan, B.A., German Language and Literature, Hacettepe University, 2005.
Murat İplikçi, M.A., History, Bilkent University, 2015.
Melih Kalender, B.A., English Language and Literature, Bilkent University, 2013.
Ebru Kanık, M.A., English Translation and Interpreting, Hacettepe University, 1998.
Müzeyyen Karabağ, M.A., History, Bilkent University, 2013.
Mesut Koçyiğit, B.A., Turkish Language and Literature, Kocaeli University, 2011.
Meryem Pelin Kohn, M.A., Education Science, Bilkent niversitesi. 2003.
Meriç Kurtuluş, Ph.D., Turkish Literature, Bilkent University, 2015.
Fatma Özden Mercan, Ph.D., Department of History and Civilization, European University Institute, 2016.
Laurance Sophie Agnes Mercerolle Herculin, M.A., French and German Translation, University of Angers, France, 1995.
Anooshirvan Miandji, M.S., Pharmacy, Gazi University, 2005. Persian.
Hatice Özge Okatan, B.A., Turkish Language, Ankara University, 2009.
Dilek Önay, B.A., Public Administration, Middle East Technical University, 1961.
Aynur Özcan, B.A., Spanish Language and Literature, Ankara University, 1980.
İbrahim Öztürk, B.A., Turkish Language and Literature, Gaziosmanpaşa University, 2009.
Büşra Sadeler, B.A., French Language Education, Gazi University, 2013.
İsmail Emre Soyalp, B.A., Russian Language and Literature, Ankara University, 2012.
Nihan Simge Soyöz, M.A., Turkish Literature, Bilkent University, 2016.
Cevat Sucu, B.A., History, Middle East Technical University, 2014.
Abdulhak Hamit Sunel, Ph.D., Education, Hacettepe University, 1968.
Burcu Şafak, M.A., Turkish Literature, Bilkent University, 2007.
Sevcan Tiftik, B.A., Turkish Language and Literature Teaching, Balıkesir University, 2012.
Rebekka Toder, M.A., Turkology, Free University Berlin, 2016.
Simay Erdem Tuğlu, M.A., Chinese Language and Literature, Ankara University, 2006.
Nalan Tuna, B.A., Turkish Language and Literature, Ankara University, 1984.
Aynur Tunaboylu, B.A., Turkish Language and Literature, Ankara University, 1985.
Aslı Uçar, Ph.D., Turkish Literature, Bilkent University, 2012.
Melike Ünal, Ph.D., Department of History, Bilkent University, 2016.
Seren Üstündağ, M.A., History, İstanbul Bilgi University, 2015.
Nam Sig Yang, B.A., History, Hacettepe University, 2014.
Sena Yapar, M.A., Cultural Studies, İstanbul Bilgi University, 2014.
Aslı Yerlikaya, M.A., Turkish Literature, Bilkent University, 2014.
Nezih Yılmaz, B.A., Italian Language and Literature, Ankara University, 1991.

GENERAL COURSES

TURK 101 Turkish I
This course is the first of a sequence of two courses designed to develop creative writing skills of the students through their own writings in Turkish. It is an active learning course. Students write their own blogs and instructors comment and send feedback about the creativity, content, composition, grammar, spelling and punctuation of the writing regularly. *Credit units: 2 ECTS Credit Units: 2. Aut (R. A. Aksoy Sheridan, F. Aşan, A. Avcı, M. Aydoğan, N. Bulduk, A. B. Ekiz, A. Gençtürk, A. Gergöy, A. T. Görgü, M. Koçyiğit, M. Kurtuluş, İ. Öztürk, N. S. Soyöz, C. Sucu, B. Taşkıran, S. Tiftik, A. Uçar, S. Uyanık Tanrıverdi, A. Yerlikaya) Spr (R. A. Aksoy Sheridan, Ö. Aksu Kurtoğlu, A. Avcı, M. İplikçi, F. Ö. Mercan, S. Üstündağ, S. Yapar)*

TURK 102 Turkish II
This course is the second of a sequence of two courses designed to develop creative writing skills of the students through their own writings in Turkish. It is an active learning course. Students write their own blogs and instructors comment and send feedback about the creativity, content, compositon, grammar, spelling and punctuation of the writing regularly. *Credit units: 2 ECTS Credit Units: 2. Aut (R. A. Aksoy Sheridan, U. Ermez Yetkin, M. İplikçi, F. Ö. Mercan, B. Şafak, S. Üstündağ, S. Yapar) Spr (F. Aşan, N. Bulduk, A. B. Ekiz, U. Ermez Yetkin, A. Gençtürk, A. Gergöy, A. T. Görgü, M. Koçyiğit, İ. Öztürk, N. S. Soyöz, C. Sucu, B. Taşkıran, S. Tiftik, S. Uyanık Tanrıverdi, A. Yerlikaya)*

PROGRAM IN CULTURES, CIVILIZATIONS AND IDEAS

M. Nakeeb (Acting Coordinator), W. N. Coker, C. Costantini, P. F. Fessenbecker, M. P. Harper, J. S. Hawkins, D. Ilic, P. E. Kimball, D. H. Leonard, S. Levelt, M. K. Ozment, A. J. Ploeg, K. S. Sorrell, C. D. Stockwell, B. A. Turner.

COURSE DESCRIPTIONS

HUM 111 Cultures Civilizations and Ideas I
This half of the year-long course “Cultures, Civilizations, and Ideas” introduces students to the study of culture and civilization through close reading of primary texts in the ancient traditions of the Near East and the Mediterranean. It also introduces students to more modern critical readings and discussion of the value and weight of this tradition. The course aims to provide students with an understanding of the ancient roots of literary craft and philosophical thought, and to enhance the student’s ability in interpretative and critical reasoning. Successful completion of the course requires careful and timely reading of assigned texts, essay writing, and active participation in class discussion. Grading is based on a course project, a mid-term examination or term-paper, comprehensive final examination, reading quizzes and class participation. Required texts include: *Epic of Gilgamesh*; Freud: *Civilization and Its Discontents;* Homer: *Iliad*; Sophocles: *Theban Plays*; Plato: *Republic*; and a course reader of other shorter works and critical essays. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ENG 101. Aut (W. N. Coker, C. Costantini, M. P. Harper, D. Ilic, P. E. Kimball, D. H. Leonard, S. Levelt, M. Nakeeb, A. J. Ploeg, K. S. Sorrell, B. A. Turner) Spr (P. F. Fessenbecker, J. S. Hawkins, P. E. Kimball, M. Nakeeb, M. K. Ozment, K. S. Sorrell)*

HUM 112 Cultures Civilizations and Ideas II
The second half of the year-long course “Cultures, Civilizations and Ideas”, continues the study of culture through examination of texts through the periods of the Late Middle Ages, the Renaissance, Enlightenment, and up to modern times. The course focuses on several themes, most importantly, the concepts of Modernity and Knowledge, Individualism, Cross-Cultural Contact, Social Order and Disorder. As in HUM 111, close reading and discussion of primary texts is the vehicle for the course. Grading is based on a course project, a mid-term examination or term-paper, comprehensive final examination, reading quizzes and class participation. Required authors include, among others: Machiavelli, Shakespeare, Descartes, Rousseau, Hegel, Marx, Kafka. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HUM 111 or HUM 121. Aut (P. F. Fessenbecker, M. K. Ozment, C. D. Stockwell) Spr (W. N. Coker, C. Costantini, M. P. Harper, D. Ilic, D. H. Leonard, S. Levelt, A. J. Ploeg, C. D. Stockwell, B. A. Turner)*

HUM 331 Humanities and Social Science Honors Seminar
This seminar is restricted to students who have a cumulative grade point average of 3.30 or higher. The seminar is designed to provide students with a sense of basic concepts and theoretical approaches which are common to advanced research in the humanities and social sciences. Though the specific content of the seminar will change from one year to the next, each seminar will present important readings and texts from several disciplines (philosophy, psychology, sociology, literary theory, etc.). Students will discuss their work with one another in seminar meetings, and also in one-on-one meetings with the seminar leader throughout the semester. Each student will complete a term paper on a topic of his or her choice related to the issues covered in the

seminar, and will leave the course with a polished piece of academic writing which they can use in applications to graduate school, as well as a detailed letter of recommendation from the seminar instructor. *Credit units: 3 ECTS Credit Units: 6. Aut (P. F. Fessenbecker, D. Ilic) Spr (K. S. Sorrell)*

FOREIGN LANGUAGES UNIT

Ş. Soytetir Şentürk (Coordinator)

Chinese: S. E. Tuğlu.

French: M. Erdoğan, S. Güner, B. Sadeler, B. Z. Turan.

German: S. Aydın, G. Çayan, A. Gümüşkan, M. Mutluer, Ş. Soytetir Şentürk, R. Toder, İ. Turan, N. Turgut.

Italian: A. Bezgin, A. Candoğan, Ö. Özduran, Ö. Saçak, N. Yılmaz.

Japanese: S. Ohashi.

Spanish: M. D. C. Aguirre Fidan, Ö. Doğan, M. G. Erdem, E. Karacaören, A. Özcan.

Russian: L. Alyeksyeyenkova, İ. E. Soyalp, G. Tanrıkulu.

Arabic: A. Beyatlı.

Persian: A. Miandji.

Turkish: N. Arslan Göçmen, N. Demirtaş, N. Mumcu, H. Ö. Okatan, N. Tuna, A. Tunaboylu.

Korean: N. S. Yang.

FOREIGN LANGUAGE COURSES

The Foreign Languages Unit offers basic- and intermediate-level courses in German, French, Italian, Japanese, Russian, Spanish, Chinise, Arabic, Hewrew, Turkish, and Persian. Advanced level courses as well as special-purpose courses emphasizing language skills in various professions are also offered. *Credit Units: 3, ECTS Credit Units: 6.*

BASIC LEVEL COURSES

GER 111/112/113/114	**Basic German I / II / III / IV**
FRE 111/112/113/114	**Basic French I / II / III / IV**
ITA 111/112/113/114	**Basic Italian I / II / III / IV**
SPA 111/112/113/114	**Basic Spanish I / II / III / IV**
RUS 111/112/113/114	**Basic Russian I / II / III / IV**
FRL 131/132/133/134	**Basic Arabic I / II / III / IV**
FRL 141/142/143/144	**Basic Persian I / II / III**
JAP 111/112/113/114	**Basic Japanese I / II / III / IV**
FRL 155/156/157/158	**Basic Chinese I / II / III / IV**
FRL 181/182	**Basic Adygei I / II**
FRL 175/176	**Basic Kurdis I / II**
FRL 111/112	**Basic Hebrew I / II**
TRK 111/112/113/114	**Basic Turkish I / II / III / IV**
FRL 195/196	**Basic Korean I / II**

INTERMEDIATE LEVEL COURSES

GER 211/212/213/214	**Intermediate German I / II / III / IV**
FRE 211/212/213/214	**Intermediate French I / II / III / IV**
ITA 211/212/213/214	**Intermediate Italian I / II / III / IV**
SPA 211/212/213/214	**Intermediate Spanish I / II / III / IV**
RUS 211/212/213/214	**Intermediate Russian I / II / III / IV**
JAP 211/212	**Intermediate Japanese I / II**
FRL 255	**Intermediate Chinese I**

ADVANCED LEVEL COURSES

FRE 381/382	**Communication Skills in French I / II**
GER 381/382	**Communication Skills in German I / II**
TRK 381/382	**Advanced Turkish I / II**

LANGUAGE COURSES FOR SPECIFIC PROGRAMS

The following courses are designed for the students of the Archaeology department. Particular emphasis is given to text comprehension, and translation into Turkish.

FRE 401/402	**Readings in French I / II**
GER 421/422	**Readings in German I / II**

DEPARTMENT OF AMERICAN CULTURE AND LITERATURE

E. Kohn (Chair), D. R. Bryson, A. Çelikkol, E. L. Demirtürk, C. Ireland, D. P. Johnson, J. G. Mansbridge, J. A. Reimer.

Part-time: A. Avcı, M. P. Kohn, M. Ünal.

The Department of American Culture and Literature offers a program leading to the Bachelor of Arts degree. The department offers a course selection that examines the United States in all its complexity, integrating literature, culture, and history. This interdisciplinary program will not only introduce students to the study of the United States but will also develop critical and creative thinking skills that will enable students to reflect upon their own culture and its history and literature. The newly revised curriculum seeks to ground students in the skills of close reading and textual analysis. Further, it asks students to consider works in their historical and cultural contexts, illustrating the complicated social relations that exist between writer, text, history, and reader. In recognition of the demands of contemporary professional and academic life, the program now requires courses in the natural and social sciences. The program, as is true of most other programs in the humanities, does not offer vocational training per se but rather develops fluency in English, analytical skills, and ability in written expression that will prepare students for success in their professional lives and in further academic study.

UNDERGRADUATE PROGRAM

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
AMER 115	Methods and Texts I	3 / 7
AMER 195	Introduction to American Studies I	3 / 7
CS 123	Introduction to Computing and Programming	3 / 6
ENG 101	English and Composition I	3 / 6
ENG 117	Advanced English Grammar I	3 / 4
GE 100	Orientation	1 / 1
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
AMER 116	Methods and Texts II	3 / 7
AMER 196	Introduction to American Studies II	3 / 7
ENG 102	English and Composition II	3 / 6
ENG 118	Advanced English Grammar II	3 / 4
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
AMER 207	American Texts and Contexts I	4 / 6
AMER 293	American History I	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MATH 103	Introductory Mathematics	3 / 6
SOC 101	Introduction to Sociology	3 / 6

Spring Semester		Credits / ECTS Credits
AMER 208	American Texts and Contexts II	4 / 6
AMER 294	American History II	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HUM 112	Cultures Civilizations and Ideas II	3 / 6
PHYS 200	Physics for Poets	3 / 5
POLS 104	Introduction to Political Science II	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
AMER 303	Film Studies in American Culture to 1960	4 / 8
AMER 343	American Theater	3 / 6
AMER 357	American Intellectual History I	3 / 6
AMER 383	American Novel to 1900	3 / 6
	Non Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
AMER 304	Film Studies in American Culture Since 1960	4 / 8
AMER 358	American Intellectual History II	3 / 6
AMER 374	American Poetry	3 / 6
AMER 384	American Novel From 1900	3 / 6
	Non Technical Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
AMER 390	Summer Training	- / 9
AMER 427	Topics in Theory for American Culture	3 / 6
AMER 459	Race and Ethnicity in American Culture	3 / 6
	Non Technical Elective	3 / 6
	Restricted Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
AMER 406	Senior Project	3 / 6
AMER 426	American Studies in a Global Context	3 / 6
AMER 492	Gender Studies in American Culture	3 / 6
	Non Technical Elective	3 / 6
	Restricted Elective	3 / 6

RESTRICTED ELECTIVES

AMER 430	The Thirties: the Great Depression and the New Deal	3 / 6
AMER 441	Culture in its Historical Contexts	3 / 6
AMER 447	Topics in Cultural Studies	3 / 6
AMER 448	American Pragmatism	3 / 6
AMER 458	History of American Presidential Campaigns	3 / 6
AMER 460	Contemporary Native American Writers	3 / 6
AMER 468	American Fiction in the 21. Century: Migration, Space, Identity	3 / 6
AMER 469	American Law Culture and Society	3 / 6
AMER 474	Colonialism and the Making of the New World	3 / 6
AMER 476	Selfhood and Emotional Life in American Culture and History	3 / 6
AMER 477	American Gothic	3 / 6
AMER 480	Hemispheric American Studies	3 / 6
AMER 482	Creative Writing Workshop	3 / 6
AMER 483	Freedom and Philosophy in Anglo-America	3 / 6
HIST 435	History of US Foreign Relations: the Cold War and Beyond	3 / 6
HUM 331	Humanities and Social Science Honors Seminar	3 / 6
IR 338	Politics of International Economy	3 / 6
IR 349	International Relations in Movies	3 / 6
IR 472	Diplomatic Language and Translation	3 / 6
POLS 488	Film and Politics	3 / 6
POLS 4204	Politics of The Balkans	3 / 6
POLS 4536	Turkish Politics in Comparative Perspective	3 / 6
POLS 4544	Theories of State	3 / 6

MINOR PROGRAM

The Minor Program in American Culture and Literature takes an interdisciplinary approach to the study of the United States, its people, and its culture. The program allows students from any academic background to explore the main themes and ideas of American literature, film, theater, poetry,

and history. Such ideas include gender, race, ethnicity, and other forms of identity. Moreover, the program will allow students to increase their fluency in English, as courses emphasize developing their reading, writing, and analytical skills. At the end, students should have a much better understanding of what the term "American" means, as courses and instructors seek to replace a superficial understanding of America with a deeper, more layered, and more nuanced understanding.

Prerequisite Courses:

A minimum grade of B- in ENG 102

CURRICULUM

Courses		Credits / ECTS Credits
AMER 195	Introduction to American Studies I	3 / 7
AMER 196	Introduction to American Studies II	3 / 7
AMER 207	American Texts and Contexts I	4 / 6
AMER 208	American Texts and Contexts II	4 / 6
	AMER Course Electives (2)	6 / 12

COURSE DESCRIPTIONS

AMER 115 Methods and Texts I
This course gives students the critical methods necessary to interpret a variety of social texts. The primary mode of organization is around genre. A unit on poetry will teach students to identify poetic forms and to scan lines; a unit on fiction will address such issues as narrative voice, characterization, and symbolism; a unit on drama will examine the dimensions of staging and performance; a unit on film will teach students to approach texts in two and three dimensions; a unit on music will examine harmony, musical form, and performance; and a unit on nonfiction prose will examine the status of objectivity in source materials. Other major issues concern the distinction between literal and figurative language, terms for literary studies, and the linguistic diversity of the United States. Students will also learn how to develop a bibliography and how to cite sources using established styles. *Credit units: 3 ECTS Credit Units: 7. Aut (C. Ireland)*

AMER 116 Methods and Texts II
This course continues the work of AMER 115. The primary mode of organization is around genre. A unit on drama will examine the dimensions of staging and performance. A unit on film will teach students how to analyze the formal development of a shot sequence. A unit on the novel will continue the study of the formal components of fiction. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: AMER 115 or AMER 117. Spr (C. Ireland)*

AMER 195 Introduction to American Studies I
This course provides an introduction to the interdisciplinary study of American culture and literature. Through consideration of exemplary moments and problems in the history of the United States, students will consider how different disciplines (history, cultural studies, textual criticism, political science, or sociology) provide interpretive strategies for American studies. In addition, students will be asked to consider how these disciplinary approaches might be combined or integrated into an interdisciplinary method. Throughout the course, a foundation of knowledge in American geography, political systems, demography, institutions, economics, and social structure will be established so as to create the possibility of further study. Tutorial support will be provided. *Credit units: 3 ECTS Credit Units: 7. Aut (M. Ünal)*

AMER 196 Introduction to American Studies II
This course continues the work of AMER 195 in building a foundation for the interdisciplinary study of the United States. In this semester, students will study such as education, political systems, gender, race, and class in greater depth. Specifically, students will examine primary documents to develop their understanding of these topics. Tutorial support will be provided. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: AMER 195. Spr (M. Ünal)*

AMER 207 American Texts and Contexts I
This course provides an interdisciplinary node of connection between the survey in history and the survey in literature. Drawing from exemplary moments and problems in American culture from the beginnings to the Civil War, the course asks students to relate a variety of primary sources to broader contextual issues. This course will be writing intensive, with tutorial support provided. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: AMER 116 and AMER 196. Aut (E. L. Demirtürk, D. P. Johnson)*

AMER 208 American Texts and Contexts II
This course provides an interdisciplinary node of connection between the survey in history and the survey in literature. Drawing from exemplary moments and problems in American culture from the Civil War to the present, the course asks students to relate a variety of primary sources to broader contextual issues. This course requires

writing intensively, with tutorial support provided. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: AMER 207. Spr (D. R. Bryson, E. L. Demirtürk)*

AMER 293 American History I
A study of the history of the United States, with particular attention to the colonial era, the American Revolution, the early national period, and the Civil War. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 116 and AMER 196. Aut (D. P. Johnson)*

AMER 294 American History II
A study of the history of the United States, beginning with the Reconstruction era and devoting particular attention to the Gilded Age, the Great Depression, the two World Wars, and the Cold War. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Avcı)*

AMER 303 Film Studies in American Culture to 1960
This course is designed to introduce students to American film studies and cultural history, including issues pertaining to aesthetic analysis, film genres and issues of representation -from the beginnings of film history until 1960. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: AMER 207 or AMER 293. Aut (J. G. Mansbridge)*

AMER 304 Film Studies in American Culture Since 1960
This course is designed to introduce students to American film history and culture, including issues pertaining to aesthetic analysis, film genres, and issues of representation from 1960 to the present. *Credit units: 4 ECTS Credit Units: 8. Spr (J. G. Mansbridge)*

AMER 343 American Theater
A study of selected 20th century plays, movements, and issues raised by the study of theater, including its relationship to mass cultural forms, state support, and documentary truth. Writers will include Lorraine Hansberry, Arthur Miller, Eugene O'Neill, Marc Blitzstein, Arthur Arent, Luis Valdez, and Anna Deavere Smith. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 207 or AMER 293. Aut (J. G. Mansbridge)*

AMER 357 American Intellectual History I
This course will ideal with the intellectual history of the United States from the colonial era to the Civil War. It will explore such topics as the Puritan tradition, republican ideology in America, Tocqueville and democracy, the Transcendentalists, the debate over slavery, views on the role of women in the new republic, and antebellum social science. Primary texts by John Winthrop, Benjamin Franklin, Thomas Paine, Thomas Jefferson, James Madison, Alexis de Tocqueville, Ralph Waldo Emerson, Henry David Thoreau, William Lloyd Garrison, David Walker, Frederick Douglass, Sarah Grimke, Catharine Beecher, Margaret Fuller, Horace Bushnell, Henry C. Carey, and George Fitzhugh will be read and discussed in the course. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 207 or AMER 293. Aut (D. R. Bryson)*

AMER 358 American Intellectual History II
This course will deal with the intellectual history of the United States from 1865 to the present. It will explore such topics as the pragmetist tradition, the plight of African Americans and their struggle for civil rights and economic betterment, the American social sciences, intellectuals and the public sphere, feminist thought, trends in American literary studies and cultural studies, debates over multiculturalism, the controversy over the "clash of civilizations", and recent American thought on the philosophy and history of science. Writers to be considered include: Lester Frank Ward, William Graham Summer, Charlotte Perkins Gilman, W.E.B. Du Bois, William James, John Dewey, Margaret Meadi Gunnar Myrdal, Henry R. Luce, Henry Wallace, J.K. Galbraith, Milton Friedman, Martin Luther King Jr., Malcom X, Lionel Trilling, Susan Sontag, Betty Friedan, Gloria Anzaldua, Hannah Arendt, Herbert Marcuse, Edward Said, Samuel Hutington, Russell Jacoby, T.S. Kuhn, and Walter Benn Michaels. *Credit units: 3 ECTS Credit Units: 6. Spr (D. R. Bryson)*

AMER 374 American Poetry
This course studies the social and formal development of poetic expression in the United States, with particular attention given to Bradstreet, Wheatley, Whitman, Dickinson, Longfellow, Crane, Pound, Eliot, Hughes, Brooks, Lowell, Frost, and Rich. *Credit units: 3 ECTS Credit Units: 6. Spr (J. A. Reimer)*

AMER 383 American Novel to 1900
Introducing the novel as a literary form, the course offers a history of the development of the novel in America. Students are expected to apply various approaches to the reading of any selected novel or novels. Authors may include Hawthorne, Melville, Twain, S. Crane, H. James, R. Hall, K. Chopin, R.H. Davis, E. Wharton, C. Perkins Gilman, K.A. Porter, A. Smedley. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 207 or AMER 293. Aut (E. L. Demirtürk)*

AMER 384 American Novel From 1900
A study of novels covering the period from 1900 to the present. Selections can include works by E. Hemingway, F.S. Fitzgerald, W. Faulkner, J. Steinbeck, W. Cather, T. Dreiser, J. Smiley, and "popular" novels, novels by women, African-American, Native American, and ethnic writers. *Credit units: 3 ECTS Credit Units: 6. Spr (E. L. Demirtürk)*

AMER 390 Summer Training
The minimum time for this practice in an organization is six weeks (30 workdays). The main objective is to observe a non-academic organization in an original setting, with the idea of applying skills learned in AMER, learning new skills, and preparing for a life after university. Organizations can be any of the following: think-tanks, human rights organizations, NGOs, charities, business and law firms, newspapers, magazines, broadcasting companies, publishing houses, etc. Students are especially encouraged to find community service-oriented training, in order to learn responsibility both for oneself and others. It is crucial to secure the approval of the department chair re the suitability of the intended summer training place. Students should do this before they make arrangements with the organization. A written report summarizing training experience is required. *Credit units: None ECTS Credit Units: 9. Aut (E. Kohn)*

AMER 406 Senior Project
The minimum time for this practice in an organization is six weeks (30 workdays). The main objective is to observe a non-academic organization in an original setting, with the idea of applying skills learned in AMER, learning new skills, and preparing for a life after university. Organizations can be any of the following: think-tanks, human rights organizations, NGOs, charities, business and law firms, newspapers, magazines, broadcasting companies, publishing houses, etc. Students are especially encouraged to find community service-oriented training, in order to learn responsibility both for oneself and others. It is crucial to secure the approval of the department chair re the suitability of the intended summer training place. Students should do this before they make arrangements with the organization. A written report summarizing training experience is required. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Kohn)*

AMER 426 American Studies in a Global Context
Following the critical examination of American nationality in AMER 425, this course will attempt to understand the notion of America in a global context. Our examination will begin with an attempt to understand the global construction of the United States, with specific reference to European colonialism, the transatlantic slave trade, and the rise of the nation-state. Then, we will examine contemporary theories of the globalization of American culture; we will map the flows of American cultural products and ideas into such locations as West Africa, South Asia, and Turkey itself. *Credit units: 3 ECTS Credit Units: 6. Spr (C. Ireland)*

AMER 427 Topics in Theory for American Culture
This course offers an introduction to critical and cultural theory with specific reference to problems in American Studies. Students will be encouraged to think critically about issues concerning narrative form, knowledge and power, culture, “common sense,” gender, race, and hegemony within the context of American culture and history. Selections from Barthes, Benjamin, Lyotard, Fourcault, Gramsci, Bederman, Wiegman, Haraway, Jackson Lears, Denning, and others will be read for the course. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 303 or AMER 357. Aut (C. Ireland)*

AMER 430 The Thirties: the Great Depression and the New Deal
This course will examine the nineteen-thirties, a crucial decade in twentieth-century United States history. We will examine the causes and consequences of the Great Depression, the New Deal of President Franklin D. Roosevelt, and the political, cultural, and intellectual developments of this era. The course will emphasize a historical approach to the thirties, but will also examine the literature, film, art, and music of this decade. *Credit units: 3 ECTS Credit Units: 6.*

AMER 458 History of American Presidential Campaigns
Every four years the United States picks its president. Campaigns for the presidency have ranged from a few drunken, raucous, and even violent weeks in the nineteenth century, to the very sophisticated and year-long “packaging” of the presidency today. This course will look at the evolution of American presidential campaigns, with an emphasis on the changing “political culture” in the United States. As well as looking at key texts, the class will explore the media of American politics, from newspapers and political cartoons, to radio, television, and the dawn of internet campaigning. In particular we will focus on the current presidential campaign in the United States, as the Democrats and Republicans pick their candidates for 2008. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Kohn)*

AMER 459 Race and Ethnicity in American Culture
This course presents a comparative study of the culture and writings of major ethnic groups in the US. Students will be exposed to the cultural expression and the processes of identity formation for various groups, including Latino/as, Native Americans, African Americans and Italian-, Irish-, and Asian Americans. Students will study key texts in the field. Topics may include theories of assimilation, integration, and colonization, conceptual models such as “whiteness,” and the “melting pot,” and historical responses to immigration, such as ethnocide, eugenics, and repatriation, as backdrop to the complex roles played by race and ethnicity in the US. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: AMER 303 or AMER 357. Aut (J. A. Reimer)*

AMER 460 Contemporary Native American Writers
A study of the fiction and poetry of Native American writers covering the period from 1945 to the present. Selections may include works by Sherman Alexie, Joseph Bruchac, Louise Erdrich, Joy Harjo, N. Scott Momaday, and Leslie Marmon Silko, as well as other contemporary Native American writers. *Credit units: 3 ECTS Credit Units: 6.*

AMER 468 American Fiction in the 21. Century: Migration, Space, Identity
Multi-ethnic literature of Americas reveal a distinctive mental journey out of which men and women have sought to become their own persons with a bi-cultural or multi-cultural identities. Members of different ethnoracially constituted groups-whites, blacks, Latinos, Chinese, Vietnamese, Cambodian, Indian, and Arab Americans-have come to inhabit discrete urban spaces in contemporary America. The painful transformation that migrants suffer when facing a new reality reveal the ways in which they transcended circumscribed traditional lives and roles by becoming intellectuals, careerists, and writers that are expressed in different narrative styles. The conflicting voices of a male/female and an immigrant blend and argue, as the writers' experiences as (im)migrant wo/men are incorporated into narratives which assert, accept and celebrate a freer life in the new homeland. These struggles between different value-systems of different cultures become the common pattern of these lives and writings. Hence, in this course we will explore how migrants' narratives re-define their identities in excerpts, stories and novels by such writers as Bharati Mukherjee, Nami Mun, Junot Diaz, Wes Moore, Randa Jarrar, Dinaw Mengestu, Bich Minh Nguyen, Helena Maria Viramontes, Chang-Rae Lee. We will also watch DVD's of interviews of some of the writers. *Credit units: 3 ECTS Credit Units: 6.*

AMER 474 Colonialism and the Making of the New World
The European 'discovery' of the Americas at the end of the fifteenth century was a transformative moment in world history. This course will explore the impact of the European exploration and colonization of the Americas from a variety of historical and theoretical perspectives. We will give particular attention to the experiences of those exploited by the European colonical project through the critical analysis of historical and contemporary representations of the peoples and cultures of the New World. *Credit units: 3 ECTS Credit Units: 6.*

AMER 476 Selfhood and Emotional Life in American Culture and History
Using texts drawn from cultural and social history as well as from such disciplines as cultural studies, social psychology, neuroscience, anthropology, and sociology, this course will examine the experience of selfhood and manifestations of emotional life in American culture and in modern culture more generally from a historical perspective. Issues to be considered in the course include: the contrast between the Western and East Asian sense of self; the shift from an emphasis on moral "character" to that of "personality" as the core of selfhood in the United States during the early twentieth century; the struggle to manage such "negative" emotions as anger and jealousy during the twentieth century; the rise of "American cool" in this century; the emergence of the culture of self-realization; and the increasing importance of a sense of "precarity" and depression in recent decades. Authors to be read include: Hazel R. Markus, Antonio Damasio, Warren I. Susman, T. J. Jackson Lears, Peter N. Stearns, Lauren Berlant, Alain Ehrenberg, George Herbert Mead, David Riesman, Arlie R. Hochschild, and Michel Foucault. *Credit units: 3 ECTS Credit Units: 6. Aut (D. R. Bryson)*

AMER 482 Creative Writing Workshop
This course is a workshop-based seminar designed to develop your English writing voice creatively, through reading, writing, sharing, and critical conversation. Together we will explore the diversity of creative expression in English, and enact these explorations in our own writing. We will supplement writing exercises with a selection of readings in poetry, short fiction, creative nonfiction/personal essay, and cross-genre writing. We will also spend part of the course discussing how to create a writing portfolio; independent, small-press, and self-publishing; how to submit/query for publication; and how to find publications and presses that are a "good fit" for our work. The course is open to students from all disciplines even if they lack a background in literature. *Credit units: 3 ECTS Credit Units: 6. Aut (J. A. Reimer) Spr (J. A. Reimer)*

AMER 483 Freedom and Philosophy in Anglo-America
Few words resonate in American culture more than "freedom" and "liberty". But from where do these concepts originate, and what exactly do they mean? Freedom for whom, and to do what? This course explores these questions by examining different theories of freedom and liberty in the early modern era, from the European Renaissance to the American Revolution. We link the development and growth of American political culture to social and intellectual movements including the Protestant Reformation, the English Civil Wars, the Scientific Revolution, and the Enlightenment. *Credit units: 3 ECTS Credit Units: 6.*

AMER 492 Gender Studies in American Culture
This course offers an introduction to the critical role that gender has played in the structure of American society. It examines theories of gender and society as they have evolved in recent years. Students consider how feminism and other gender-sensitive critical practices help us to understand problems in U.S. society. *Credit units: 3 ECTS Credit Units: 6. Spr (J. G. Mansbridge)*

DEPARTMENT OF ARCHAEOLOGY

T. Zimmermann (Acting Chair), J. Bennett, C. V. Gates, M. H. Gates, J. Morin, D. S. Tezgör Kassab.

Part-time: Ö. Aydın, N. İ. Gerçek.

Teaching and research activities of the department concentrate on the archaeology, history and art of Anatolia, the Mediterranean, and the ancient Near East. Students will have opportunities to take part in excavations and surveys conducted by department members at the multi-period sites of Hacımusalar-Elmalı (Antalya) and Kinet Höyük-Dörtyol (Hatay).

UNDERGRADUATE PROGRAM

The aim of the undergraduate program in the Department of Archaeology is to provide a thorough and comprehensive understanding of archaeology, ancient history and art. The curriculum includes practical as well as academic work. There will be field trips to museums and sites in Turkey, and students will have the opportunity to participate in departmental survey/excavation projects; arrangements might also be made for students to take part in excavations and expeditions sponsored by other institutions.

The first two years of the program embrace a wide range of essential introductory subjects designed to familiarize the student with the background material required for the more specialized subjects offered over the following two years. In the third and fourth years, besides the compulsory courses, the student has the opportunity to choose elective topics in his or her field of particular interest. One of the options in the fourth year is supervised study on a topic of the student's own choice, at the end of which the student will produce a short dissertation. This particular elective will be offered to students who would like to continue with graduate studies in the field of archaeology or related subjects. Every student is required to take at least one ancient language (Greek and Latin are offered). A basic knowledge of ancient Greek or Latin is invaluable for those students who decide to specialize in Greek or Roman art and archaeology, or ancient history.

At the end of the program the student will emerge with a good knowledge and comprehension of most aspects of Near Eastern, Mediterranean, and European art and archaeology from the Prehistoric period onwards. Emphasis will of course be placed on Anatolian civilizations since the environment at Bilkent provides an ideal opportunity for first-hand familiarity with the ancient sites and monuments of this country.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 121	Introduction to Computer Tools	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
HART 111	Introduction to Archaeology	3 / 6
HART 117	Ways of Seeing: Approaches to Art and Architectural History	3 / 6
MATH 103	Introductory Mathematics	3 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
CS 123	Introduction to Computing and Programming	3 / 6
ENG 102	English and Composition II	3 / 6
HART 102	Introduction to Research Skills	3 / 6
HART 120	Human Evolution and World Prehistory	3 / 6
PHYS 200	Physics for Poets	3 / 5
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HART 202	Introduction to Mesopotamian and Egyptian Archaeology	3 / 6
HART 219	Anatolian Archaeology, Neolithic to the Iron Age	3 / 6
HCIV 101	History of Civilization I	3 / 6
HIST 200	History of Turkey	4 / 8
PSYC 102	Introduction to Social Psychology	3 / 6
	Ancient Language requirement I	3 / 6

Spring Semester		Credits / ECTS Credits
ECON 103	Principles of Economics	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HART 212	Introduction to Classical Archaeology	3 / 6
HCIV 102	History of Civilization II	3 / 6
PHIL 102	Ancient Philosophy	3 / 6
	Ancient Language requirement II	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
HART 305	Byzantine and Islamic Art and Archaeology	3 / 6
HART 311	Archaeological Drawing and Planning in the Field	3 / 6
	Ancient Language requirement III	3 / 6
	Department Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
HART 310	Archaeological Surveying and Planning	3 / 6
	Ancient Language requirement IV	3 / 6
	Department Electives (3)	9 / 18

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
HART 401	Summer Practice	- / 6
HART 409	Museum Practices and the Preservation of Cultural Heritage	3 / 6
HART 423	Cities, Monuments and Landscapes of Classical Anatolia	3 / 6
	Department Electives (2)	6 / 12
	Free Elective	3 / 6

Spring Semester		Credits / ECTS Credits
HART 400	Senior Project	3 / 6
HART 426	Ancient Technologies and Materials	3 / 6
HART 436	Archaeological Method and Theory	3 / 6
	Department Elective	3 / 6
	Department Elective	3 / 6
	Free Elective	3 / 6

DEPARTMENT ELECTIVES

HART 206	Mythologies of the Ancient Mediterranean World	3 / 6
HART 225	Cultural Anthropology	3 / 6
HART 231	Ancient Greek I	3 / 6
HART 232	Ancient Greek II	3 / 6
HART 239	Latin I	3 / 6
HART 240	Latin II	3 / 6
HART 303	Greek Sculpture	3 / 6
HART 306	Hellenistic and Roman Sculpture	3 / 6
HART 307	Monumental Painting	3 / 6
HART 308	Greek Vase Painting	3 / 6
HART 313	European Prehistory	3 / 6

HART 315	Greek Architecture	3 / 6
HART 316	Roman Architecture	3 / 6
HART 317	Archaeology of Troy	3 / 6
HART 318	Archaeology of Syria and Palestine	3 / 6
HART 325	Hittite Archaeology	3 / 6
HART 328	The Aegean Bronze Age	3 / 6
HART 330	Egyptian Art and Archaeology	3 / 6
HART 333	Ancient Greek III	3 / 6
HART 334	Ancient Greek IV	3 / 6
HART 335	Monuments of Babylon	3 / 6
HART 343	Latin III	3 / 6
HART 344	Latin IV	3 / 6
HART 351	Monuments of Athens	3 / 6
HART 352	Monuments of Rome	3 / 6
HART 353	Introduction to Akkadian	3 / 6
HART 360	Ancient Mesoamerican Civilizations	3 / 6
HART 365	Ancient Cities	3 / 6
HART 370	Iron Age Sculpture of the Near East	3 / 6
HART 372	Hittite I	3 / 6
HART 373	Hittite II	3 / 6
HART 380	Archaeology of Phoenicia	3 / 6
HART 403	Greek Sanctuaries	3 / 6
HART 420	Readings in Prehistory	3 / 6
HART 424	Religion and Society in the Ancient Near East	3 / 6
HART 430	Readings in Near Eastern Art and Archaeology	3 / 6
HART 431	The Archaeology of Cyprus in the Bronze Age	3 / 6
HART 433	The Eastern Roman Provinces	3 / 6
HART 434	Landscape Archaeology	3 / 6
HART 435	Selected Topics in Anatolian Art and Archaeology	3 / 6
HART 439	Neolithic and Chalcolithic Periods in Anatolia	3 / 6
HART 440	Readings in Anatolian Art and Archaeology	3 / 6
HART 450	Readings in Greek Art and Archaeology	3 / 6
HART 454	Introduction to Sumerology	3 / 6
HART 460	Readings in Roman Art and Archaeology	3 / 6
HART 474	Neo-Assyrian Art and Archaeology	3 / 6
HART 490	Supervised Study	3 / 6
HART 491	Readings from Near Eastern Texts	3 / 6
HART 492	Readings From Greek/Latin Texts	3 / 6

MINOR PROGRAM

The Minor Track in Archaeology aims to provide students with a useful and appreciated background for many careers different from "hardcore archaeology", such as publishing, tourism, communications, law, management and finance, international relations, and government service. The Minor track is designed to equip candidates with both broad and in-depth knowledge in Pre-Classical and Classical archaeology, its current research objectives, methodologies and applications, to supplement their Major studies in a firm and enduring way.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
HART 111	Introduction to Archaeology	3 / 6
HART 120	Human Evolution and World Prehistory	3 / 6
HART 202	Introduction to Mesopotamian and Egyptian Archaeology	3 / 6
HART 212	Introduction to Classical Archaeology	3 / 6
	HART electives (2)	6 / 12

HART electives: HART courses excluding ancient languages and certain technical courses like Archaeological Drafting and Illustration.

GRADUATE PROGRAM

Master of Arts in Archaeology

The Department of Archaeology offers a graduate program leading to the M.A. degree. The program focuses on the archaeology and art of Anatolia from the Prehistoric to the Medieval period, within its Mediterranean and Near Eastern context. Instruction is primarily through courses that encourage independent research, and emphasis is placed on individuality of thought as well as a thorough knowledge of the field and the application of critical methods to archaeological problems.

Admission: Applicants are normally expected to have an undergraduate major in archaeology, history of art, anthropology, or a related subject, and must demonstrate a proficiency in English. Students from other disciplines are also eligible for the program, providing they remedy deficiencies in their academic background by completing a year of preparatory courses prior to beginning the Master's program. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Degree Requirements: The M.A. offered by the department focuses on the archaeology and art of Anatolia. The program requires students to complete (generally over three semesters) a minimum of 27 units of course work (a total of at least 9 courses), comprising core courses in Archaeological Method and Theory, The Interpretation of Art Historical Materials, Research Directives in Anatolian Art and Archaeology and/or Ethnoarchaeology, and a minimum of three seminars in at least two of the following subjects: Pre-Classical, Classical and Medieval Art and Archaeology. A range of seminar topics is offered within each specified period, and these are varied each semester according to the needs of the students and the specialties of the instructors. Students who wish to concentrate on Classical Archaeology are required to take Ancient Greek or Latin, or both. Medieval specialists have the opportunity to study Ottoman Turkish and Paleography (offered through the History Department). Students who wish to supplement their academic background are permitted to attend undergraduate lecture courses and seminars either as auditors or for extra credit.

By the end of the second year the student will complete a Master's thesis in a specialized field of study. Participation in an approved field project is also an integral part of the program, and by the second year at the latest a reading knowledge of French or German must be demonstrated through examination.

GRADUATE CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
HART 501	Issues in Archaeological Theory	3 / 7
HART 519	Research Directions for Anatolian Archaeology and Art	3 / 7
HART 590	Seminar	- / 1
HART 599	Master's Thesis	- / 56
	Classical Archaeology Restricted Elective	3 / 6
	Group I Restricted Electives (3)	9 / 18
	Group II Restricted Electives (2)	6 / 12
	Pre-Classical Archaeology Restricted Elective	3 / 6

CLASSICAL ARCHAEOLOGY RESTRICTED ELECTIVES

HART 509	Classical Art and Archaeology	3 / 7
HART 510	Issues in Classical Art and Archaeology	3 / 7

PRE-CLASSICAL ARCHAEOLOGY RESTRICTED ELECTIVES

HART 507	Pre-Classical Art and Archaeology	3 / 7
HART 508	Issues in Pre-Classical Art and Archaeology	3 / 7

GROUP I RESTRICTED ELECTIVES

HART 507	Pre-Classical Art and Archaeology	3 / 7
HART 508	Issues in Pre-Classical Art and Archaeology	3 / 7
HART 509	Classical Art and Archaeology	3 / 7
HART 510	Issues in Classical Art and Archaeology	3 / 7
HART 515	Readings in Near Eastern Archaeology	3 / 7
HART 516	Supervised Research in Near Eastern Archaeology	3 / 7
HART 517	Readings in Anatolian Archaeology	3 / 7
HART 518	Supervised Research in Anatolian Archaeology	3 / 7
HART 521	Problems in Medieval Art and Archaeology	3 / 7
HART 523	Medieval Art and Archaeology	3 / 7
HART 524	Issues in Medieval Art and Archaeology	3 / 7
HART 542	Hittite I	3 / 7
HART 543	Hittite II	3 / 7
HART 551	Ancient Greek I	3 / 7
HART 552	Ancient Greek II	3 / 7
HART 553	Ancient Greek III	3 / 7
HART 554	Ancient Greek IV	3 / 7
HART 563	Latin I	3 / 7
HART 564	Latin II	3 / 7
HART 583	Latin III	3 / 7
HART 584	Latin IV	3 / 7
HART 588	Readings From Greek/Latin Texts II	3 / 7

COURSE DESCRIPTIONS

HART 102 Introduction to Research Skills
Examination of a theme concerning the art, architecture, and archaeology of the Mediterranean basin and the Near East, with emphasis on developing the skills essential for successful university study: reading scholarly works, taking notes, identifying research problems, writing papers (both short reports and longer research papers), giving oral presentations, and taking part in discussions. The topic examined will vary from year to year, depending on the interests of the instructor. *Credit units: 3 ECTS Credit Units: 6. Spr (C. V. Gates)*

HART 111 Introduction to Archaeology
This course provides background material essential for any student of archaeology, covering such topics as the history of archaeological research and excavation, major archaeological discoveries of past centuries, modern excavating, surveying and recording techniques, dating methods, identification of sites and the topographical factors involved in locating ancient settlements. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Bennett)*

HART 117 Ways of Seeing: Approaches to Art and Architectural History
A thematic introduction to great works of art and architecture, techniques of analysis, and methods of interpretation. Examples studied will be taken from cultures around the world, ancient, medieval, and modern, with the majority coming from the western tradition. Themes explored will include: form; style; iconography (the subject matter of art); images of the sacred; architecture and ritual; politics and art; landscapes and natural settings; private architecture: the house; and perspectives from sociology, Marxism, feminism, and semiotics. *Credit units: 3 ECTS Credit Units: 6. Aut (C. V. Gates)*

HART 120 Human Evolution and World Prehistory
This course is a survey of the human prehistory of Africa, Europe and Asia from the first hominids to the Mesolithic period, with particular emphasis on morphological evolution, environment and cultural developments. *Credit units: 3 ECTS Credit Units: 6. Spr (J. Morin)*

HART 202 Introduction to Mesopotamian and Egyptian Archaeology
This course will survey the ancient civilizations of Mesopotamia (modern Iraq) and Egypt at the time of their greatest achievements (4000-550 BC), from the invention of writing and the engineering of the pyramids, to large-scale urbanism and far-flung economic networks. An archaeological focus on settlement patterns, architecture and artifacts will document how the cultures of these two regions evolved, and what interconnections may have linked them. *Credit units: 3 ECTS Credit Units: 6. Aut (M. H. Gates)*

HART 206 Mythologies of the Ancient Mediterranean World
Introduction to mythologies of the Mesopotamian, Egyptian and Greco-Roman civilizations, from a comparative and cultural perspective. This course will survey the major myths about gods, goddesses, heroes and heroines, and consider the role they fulfilled in the societies that created them. Lectures will be supplemented by visual material and ancient written sources. *Credit units: 3 ECTS Credit Units: 6. Spr (M. H. Gates)*

HART 212 Introduction to Classical Archaeology
This course surveys major aspects of the materials cultures of Ancient Greece and Rome, beginning with the Iron Age of Greece and concluding with the decline of the Western Roman Empire: their architecture, their arts, their economic and social development in urban and rural settings, as well as the way in which scholars have approached the field over its history. Equal weight is given to the development of Classical Greece, its Hellenistic expansion, and the Roman domination of the Mediterranean. *Credit units: 3 ECTS Credit Units: 6. Spr (D. S. Tezgör Kassab)*

HART 219 Anatolian Archaeology, Neolithic to the Iron Age
An introduction to the ancient sites and monuments of Anatolia and its relations with the surrounding cultures from the beginning of urban civilization (ca. 7th millennium BC) to the Early Iron Age. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Zimmermann)*

HART 221 Great Discoveries from the Ancient World
Archaeologists find and study a wide range of things - from preserved footprints to frozen bodies, from fossilised skulls to battlefield relics, from cities lost in the jungle to those buried by falling ash. Specifically designed for the non-archaeologist, this course demonstrates how discoveries like these as well as the study of the many monuments left to us by ancient societies have revolutionised our knowledge of man's past. Specifically designed for non-archaeologists, the course examines and assesses some of the more important archaeological discoveries and monuments that have helped change our view of the past, including some of the more famous and well-known 'finds', such as Tutankamun's Tomb and Troy, as well as several of the less-well known 'discoveries and monuments', as with the site of Custer's Last Stand and the Easter Island statues. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Bennett) Spr (J. Bennett)*

HART 225 Cultural Anthropology
Survey of the basic data and methods of research in the material culture of ancient societies in historical context, illustrating the principles of cultural behavior. Exploration of selected basic concepts and theories of contemporary anthropology. Current problems in relation to materials from the Old World. *Credit units: 3 ECTS Credit Units: 6. Spr (C. V. Gates)*

HART 231 Ancient Greek I
Introduction to ancient Greek for beginning students. The course will emphasize both grammar and reading. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Morin)*

HART 232 Ancient Greek II
Completion of the grammar and vocabulary acquisition started in Ancient Greek I. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 231. Spr (J. Morin)*

HART 239 Latin I
Introduction to Latin for beginning students. The course will emphasize both grammar and reading. *Credit units: 3 ECTS Credit Units: 6. Aut (N. İ. Gerçek)*

HART 240 Latin II
Completion of the grammar and vocabulary acquisition begun in Latin I. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 239. Spr (N. İ. Gerçek)*

HART 303 Greek Sculpture
The course will concentrate on the development of Greek sculpture with special emphasis on the state of research, on new interpretations of images and on the methodology of interpretation. *Credit units: 3 ECTS Credit Units: 6.*

HART 305 Byzantine and Islamic Art and Archaeology
A survey of art, architecture, and archaeology of the Mediterranean and Near East in the medieval and early modern periods, from Constantine the Great to the 18th century. Focus will be on the art and architecture of the Late Roman and Byzantine empires in Italy and the eastern Mediterranean basin and of Islamic states from the Umayyad and Abbasid caliphates to the Ottoman, Safavid, and Mughal empires. *Credit units: 3 ECTS Credit Units: 6. Aut (C. V. Gates) Spr (C. V. Gates)*

HART 306 Hellenistic and Roman Sculpture
A survey of Hellenistic and Roman sculpture from 300 BC to the Constantinian period (ca. 300 AD). The major artistic achievements of the Romans - portraiture, historical narratives and the stylistic changes from the idealized to the realistic. *Credit units: 3 ECTS Credit Units: 6.*

HART 308 Greek Vase Painting
A survey of Greek vase painting from the Geometric period (ca. 9th century BC) to the 4th century BC with special attention to Attic vase painting of the Archaic and Classical periods. *Credit units: 3 ECTS Credit Units: 6. Aut (D. S. Tezgör Kassab)*

HART 310 Archaeological Surveying and Planning
A practical course offering an introduction to surveying procedures in the recording of sites and field surveys. Chain surveying, gridding, contouring and leveling are all covered by this course as they are basic to the accurate recording of all kinds of archaeological evidence. *Credit units: 3 ECTS Credit Units: 6. Spr (Ö. Aydın)*

HART 311 Archaeological Drawing and Planning in the Field
This course offers the first principles and basic skills required for archaeological illustration: drawing artifacts, buildings and reconstructions, producing artwork for publication, and drawing in the field during survey work and excavation. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Aydın)*

HART 315 Greek Architecture
A survey of Greek building from ca. 700 BC to the 1st century BC. The Greek architectural tradition and its historical development will be emphasized (the history and nature of Doric and Ionic orders and of "Aeolic" and Corinthian styles). Materials, techniques and procedures of construction will also be covered. Sanctuary architecture provides the core material of the course but military, funerary, and ceremonial monuments will also be considered. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Morin)*

HART 316 Roman Architecture
A survey of Roman architecture, from the Etruscans to the Constantinian period (ca. 300 AD) throughout the Roman world, with an emphasis on the architecture of the Republic and the early Roman Empire. *Credit units: 3 ECTS Credit Units: 6.*

HART 317 Archaeology of Troy
A broad-based investigation into the problem of the origin and development of the Homeric city of Troy. The written and archaeological sources and the extent and the limitations of the data will be emphasized. The class will discuss the relationships between epic, history and archaeological evidence. *Credit units: 3 ECTS Credit Units: 6. Spr (T. Zimmermann)*

HART 318 Archaeology of Syria and Palestine
The archaeology of the Levant and its relationship with surrounding cultures from the beginning of urban civilization to ca. 1200 BC. *Credit units: 3 ECTS Credit Units: 6. Spr (M. H. Gates)*

HART 325 Hittite Archaeology
Topics include the origin, the rise and the development of the Hittite state and civilization. Topography, settlement, history, urban growth, organization and civic administration, public religion, commercial and political activities and art will be considered. *Credit units: 3 ECTS Credit Units: 6.*

HART 330 Egyptian Art and Archaeology
A survey of the art and archaeology of ancient Egypt, from the Predynastic Period to the end of the New Kingdom (4000-1100 BC). The course will emphasize major monuments of architecture, sculpture, relief and painting. Questions of stylistic change and historical context will be considered, as well as cultural relations with neighboring civilizations. *Credit units: 3 ECTS Credit Units: 6.*

HART 333 Ancient Greek III
Selections from Greek literature (such as Homer, Hesiod, Xenophon Aeschylus, Sophocles, Euripides, Plato, Herodotus and Thucydides). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 231 and HART 232.*

HART 334 Ancient Greek IV
Selections from Greek literature (such as Homer, Hesiod, Xenophon Aeschylus, Sophocles, Euripides, Plato, Herodotus and Thucydides). Also, an introduction to Epigraphy. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 333.*

HART 335 Monuments of Babylon
Babylon, named The Gate of the Gods, was by 600 BC the ancient world's largest city, and home to two of its "ancient wonders." Situated in today's southern Iraq, babylon's urban plan, palaces, temples, museums, housing and lifestyle are known from the Greek historian Herodotus and other visitors, from the Old Testament, from Babylonian texts, and especially from a century of excavations at the site and its surroundings. this course will examine major aspects of this remarkable ancient city, with a focus on balancing the written and archaeological evidence. *Credit units: 3 ECTS Credit Units: 6.*

HART 343 Latin III
Completion of the grammar points of the Latin language and an introduction to original texts. Also, an introduction to Epigraphy. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 239 and HART 240.*

HART 344 Latin IV
Readings and discussions of many of the works of Roman literature. Emphasis will be on correct translation of the Latin, with attention to genre and narrative technique, and to building facility in reading Latin. Selections from writers such as Plautus, Vergil, Cicero, Caesar, Lucretius, Petronius and Ovid will be read in the original. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: HART 343.*

HART 351 Monuments of Athens
The monuments of Athens from the Archaic period through the Hellenistic and Roman periods, considering stylistic developments and historical and cultural context. *Credit units: 3 ECTS Credit Units: 6. Spr (D. S. Tezgör Kassab)*

HART 353 Introduction to Akkadian
Introduction to Akkadian for beginning students. No previous knowledge of a foreign language is needed. The course is particularly recommended to archaeology students whose interests lie in Bronze Age Mesopotamia and Anatolia. *Credit units: 3 ECTS Credit Units: 6.*

HART 360 Ancient Mesoamerican Civilizations
A survey of the civilizations of Mesoamerica from earliest human settlement to the Spanish conquest, with emphasis on the art and archaeology of the great states: Olmec, teotihuacan, Maya, Toltec, and Aztec. *Credit units: 3 ECTS Credit Units: 6.*

HART 372 Hittite I
An introduction to Hittite, the oldest attested Indo-European language. Overview of the discovery of the Hittite language and civilization, and presentation of the basics of Hittite grammar and cuneiform script. *Credit units: 3 ECTS Credit Units: 6. Aut (N. İ. Gerçek)*

HART 373 Hittite II
A detailed survey of Hittite grammar and orthography. Beginner level excerpts from Hittite texts read and analyzed. *Credit units: 3 ECTS Credit Units: 6. Spr (N. İ. Gerçek)*

HART 380 Archaeology of Phoenicia
Detailed survey of Phoenician art and archaeology in its historical and economic context. There will be particular emphasis on the influences and relationships, especially in the fields of trade and art, between the Phoenicians and the rest of the Mediterranean and Near Eastern World. *Credit units: 3 ECTS Credit Units: 6.*

HART 400 Senior Project
A project on a specific topic in an area of archaeology, the history of ancient art, museum studies or ancient history to be carried out by the student or a group of students under the supervision of the project coordinator. The form of the project is free, and may consist of any of the following: a series of posters (on an archaeological site or theme), an illustrated guide to the archaeology of a specific place (or museum), a web blog on current issues in archaeology or history of ancient art, a film (video) on a specific site or theme, a reconstruction (model or virtual) of an ancient building, or any subject approved by the project coordinator. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Bennett) Spr (J. Bennett)*

HART 401 Summer Practice
A course in which the student is expected to take part in actual field work preferably on an excavation or in a museum; other options possible, with approval from department. A report of performance to be submitted to the Department by the supervisor of the field project. *Credit units: None ECTS Credit Units: 6. Aut (J. Morin)*

HART 403 Greek Sanctuaries
This course examines the religious, political and social uses of one of the most important institutions of the Greek world, together with the architecture, sculpture, pottery and offerings found in sanctuaries. *Credit units: 3 ECTS Credit Units: 6.*

HART 409 Museum Practices and the Preservation of Cultural Heritage
Study of various aspects of museum work. Management principles, cataloging and care of art objects, exhibitions and acquisitions, administrative procedures, and museum architecture will be emphasized. Specialist lecturers and visits to museums and their facilities. *Credit units: 3 ECTS Credit Units: 6. Aut (D. S. Tezgör Kassab)*

HART 423 Cities, Monuments and Landscapes of Classical Anatolia
Scattered throughout the modern Republic of Turkey, ancient Anatolia, are the very visible remains of some 100 and more sites and monuments that help illuminate the history and in particular the architectural developments of the Classical period in this region. This course will examine several of these sites and their hinterlands to explain what we can learn from the archaeological remains about changing social and economic systems in the Classical period, roughly 600 BC - AD 300. The course takes a chronological approach to the subject, so that developments in contemporary social and economic systems can be explored and explained at the individual sites. As such, a particular emphasis is placed on how the architectural remains at such sites help us understand their varying degrees of prosperity in the Classical period. However, although the course will naturally focus mainly on such well-known places as Priene, Pergamum and Ephesus, it will also examine what can be learnt from the remains at several less-well known sites, like Patara, Oinoanda, and Ankara. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Morin)*

HART 424 Religion and Society in the Ancient Near East
This course will examine formal and private religion practiced by the ancient civilizations of Mesopotamia, the eastern Mediterranean, Anatolia and Egypt. Topics to be covered include religious settings (temples, shrines

and outdoor cult places), iconography referring to deities and cults, and ancient texts that explain cult practices and religious beliefs. Lectures, class discussions and student presentations. *Credit units: 3 ECTS Credit Units: 6.*

HART 426 Ancient Technologies and Materials
This course aims to provide students with a general understanding of the natural sciences (mainly chemistry and physics) contribution to enhance traditional archaeological methodologies. Issues like 14C-dating and Dendrochronology will be in focus as well as Sediment Analysis, X-Ray, lead Isotope- and Spectral Analysis, Laser-Raman-Spectroscopy and FTIR-Spectroscopy. The second part of this course is then devoted to ancient technological innovations and advances in engineering, and their contribution contemporary materials science. *Credit units: 3 ECTS Credit Units: 6. Spr (T. Zimmermann)*

HART 431 The Archaeology of Cyprus in the Bronze Age
This course will introduce the richly textured cultures of Cyprus during the Bronze Age (ca. 3500-1100 BC), when the island's resources and advantageous location encouraged interaction with neighbors from the Mediterranean, the Aegean and beyond. Aspects of Cypriot archaeological culture, social organization, technology, and maritime economy will be examined in class lectures, discussions and student presentations. *Credit units: 3 ECTS Credit Units: 6. Aut (M. H. Gates)*

HART 433 The Eastern Roman Provinces
A detailed survey of the Eastern Roman provinces from the late Republic onwards. Roman influence on and activity in Greece, Anatolia, Syria and North Africa. Settlement and architecture will be considered in its political, military, economic and cultural context. *Credit units: 3 ECTS Credit Units: 6. Aut (J. Bennett)*

HART 434 Landscape Archaeology
This course examines the relationship between geomorphology and ancient settlement, with emphasis on the development of coastal landforms, changes in sea levels, the evolution of carstic landforms and fluvial geomorphology. *Credit units: 3 ECTS Credit Units: 6.*

HART 436 Archaeological Method and Theory
Readings and a series of discussions focusing on research problems designed to give the student an understanding of the different approaches to the historical study of works of art and archaeology. *Credit units: 3 ECTS Credit Units: 6. Spr (M. H. Gates)*

HART 439 Neolithic and Chalcolithic Periods in Anatolia
An examination of the aceramic Neolithic cultures of Southeast Anatolia and the ceramic Neolithic cultures of the South and Southwest Anatolian plateau and their Chalcolithic successors. *Credit units: 3 ECTS Credit Units: 6.*

HART 450 Readings in Greek Art and Archaeology
This course will investigate the most recent issues and scholarship on a topic in the field of Greek art and archaeology. Subject to be announced in the schedule of classes. *Credit units: 3 ECTS Credit Units: 6.*

HART 470 Readings in Byzantine Art and Archaeology
This course will investigate the most recent issues and scholarship on a topic in the field of Byzantine art and archaeology. Subject to be announced in the schedule of classes. *Credit units: 3 ECTS Credit Units: 6.*

HART 474 Neo-Assyrian Art and Archaeology
The Neo-Assyrian Empire (10th-7th century BC) represents a high moment in the long history of Ancient Near Eastern civilizations. This course covers notable aspects of its architecture, arts and settlement systems as preserved in the archaeological record. *Credit units: 3 ECTS Credit Units: 6.*

HART 490 Supervised Study
Independent research under the supervision of a faculty member whose special competence coincides with the area of a student's interest. Consent of the supervising faculty member and of the major advisor is required. *Credit units: 3 ECTS Credit Units: 6. Spr (C. V. Gates)*

HART 491 Readings from Near Eastern Texts
This course will focus on the translation of Near Eastern texts. Knowledge of Akkadian will be a prerequisite. *Credit units: 3 ECTS Credit Units: 6.*

HART 501 Issues in Archaeological Theory
This course will examine contemporary debates in archaeological methodology, analysis and interpretation. Emphasis will be placed on the techniques for applying theoretical models to fieldwork and analytical research. *Credit units: 3 ECTS Credit Units: 7. Aut (Staff) Spr (J. Morin)*

HART 507 Pre-Classical Art and Archaeology
These classes will be conducted with readings and discussion on key issues of Anatolian art and archaeology from the Prehistoric period to the Iron Age. *Credit units: 3 ECTS Credit Units: 7. Aut (M. H. Gates)*

HART 508 Issues in Pre-Classical Art and Archaeology
These classes will be conducted with readings and discussion on key issues of Anatolian art and archaeology from the Prehistoric period to the Iron Age. *Credit units: 3 ECTS Credit Units: 7. Spr (T. Zimmermann)*

HART 509 Classical Art and Archaeology
Classes conducted with readings and discussion on key issues of Anatolian art and archaeology from the Greek, Hellenistic and Roman periods. *Credit units: 3 ECTS Credit Units: 7. Aut (C. V. Gates)*

HART 510 Issues in Classical Art and Archaeology
Classes conducted with readings and discussion on key issues of Anatolian art and archaeology from the Greek, Hellenistic and Roman periods. *Credit units: 3 ECTS Credit Units: 7. Spr (J. Bennett)*

HART 515 Readings in Near Eastern Archaeology
Graduate tutorial in Near Eastern Archaeology, on a topic to be chosen by the instructor. *Credit units: 3 ECTS Credit Units: 7. Aut (M. H. Gates)*

HART 516 Supervised Research in Near Eastern Archaeology
Independent study, on a topic relevant to the student's specialized research field in Near Eastern archaeology. *Credit units: 3 ECTS Credit Units: 7.*

HART 518 Supervised Research in Anatolian Archaeology
Independent study, on a topic relevant to the student's specialized research field in Anatolian archaeology. *Credit units: 3 ECTS Credit Units: 7.*

HART 519 Research Directions for Anatolian Archaeology and Art
A team-taught pro-seminar to introduce research perspectives and sources, with one topic per week, on periods (Neolithic, Ancient Near East and Egypt, Iron Age Near East, Bronze Age Aurope/Mediterranean, Greece, Rome, Byzantium, Islamic world) and themes (Science in Archeology, Ancient Languages and Epigraphy, Ethnoarcheology, Ceramics and Artifactural Analyses). *Credit units: 3 ECTS Credit Units: 7. Aut (M. H. Gates)*

HART 542 Hittite I
An introduction to Hittite, the oldest attested Indo-European language. Overview of the discovery of the Hittite language and civilization, and presentation of the basics of Hittite grammar and cuneiform script. *Credit units: 3 ECTS Credit Units: 7. Aut (N. İ. Gerçek)*

HART 543 Hittite II
A detailed survey of Hittite grammar and orthography. Beginner level excerpts from Hittite texts read and analyzed. *Credit units: 3 ECTS Credit Units: 7. Spr (N. İ. Gerçek)*

HART 551 Ancient Greek I
Introduction to ancient Greek for graduate students. The course will emphasize both grammar and reading. *Credit units: 3 ECTS Credit Units: 7. Aut (J. Morin)*

HART 552 Ancient Greek II
Completion of the grammar and vocabulary acquisition started in Ancient Greek I. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: HART 551. Spr (J. Morin)*

HART 553 Ancient Greek III
Selections from Greek literature, and an introduction to epigraphy. *Credit units: 3 ECTS Credit Units: 7.*

HART 554 Ancient Greek IV
Selections from Greek literature, and an introduction to epigraphy. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: HART 553.*

HART 563 Latin I
Introduction to Latin for graduate students. Basic points of grammar will be covered and reading skills developed. *Credit units: 3 ECTS Credit Units: 7. Aut (N. İ. Gerçek)*

HART 564 Latin II
Continuation of the grammar and development of reading skills introduced in Latin I. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: HART 563. Spr (N. İ. Gerçek)*

HART 583 Latin III
Selections from Latin literature and an introduction to epigraphy. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: HART 564.*

HART 584 Latin IV
Selections from Latin literature, prose composition, and an introduction to numismatics. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: HART 583.*

HART 590 Seminar
Credit units: None ECTS Credit Units: 1.

HART 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

A. Çelikkol (Chair), C. Costantini, P. F. Fessenbecker, P. Hart, D. Ilic, V. J. Kennedy, G. Kurtuluş, S. Levelt, M. K. Ozment, H. H. T. Yeung.

Part-time: T. Can, C. Demir, C. Ekiz, M. Kalender, M. Karabağ.

UNDERGRADUATE PROGRAM

Through a study of major authors, literary works and movements, the undergraduate program in English Language and Literature helps students to achieve a mature understanding of themselves and the world, and to learn to read critically and analytically, write clearly and persuasively, reason soundly and express themselves intelligently in English. In addition to giving a solid foundation in English Literature and Culture, the curriculum emphasizes critical thinking, communication skills and intellectual growth.

The department curriculum comprises the analysis, study, and discussion of various types of literature, origins and characteristics of myth; classical, biblical, Norse and Celtic mythology; literary terms and movements; periods of English literature from Old and Middle English literature through Renaissance, 17th C., 18th C., the Romantic Period, the Victorian age, to the present; English history; British society and culture; American literature; world literature, and theory and practice of criticism. The courses which emphasize class practice, exercise and drills are composition, translation, reading and oral interpretation, and research techniques.

Apart from department courses, students will be able to take elective courses from a wide variety of subjects offered by the other departments of the University, notably in foreign languages, social sciences, computer programming, and fine arts. This wider distribution of courses will provide the students with opportunities to broaden their culture, contribute to a desirable balance of intellectual interests, and prepare them for more specialized studies in the future.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ELIT 109	Translation I (English-Turkish)	3 / 6
ELIT 115	Oral Expression Discussion and Presentation	3 / 4
ELIT 139	Appreciation of Literature	3 / 6
ENG 101	English and Composition I	3 / 6
ENG 117	Advanced English Grammar I	3 / 4
GE 100	Orientation	1 / 1
MATH 103	Introductory Mathematics	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CS 123	Introduction to Computing and Programming	3 / 6
ELIT 112	Translation II (Turkish-English)	3 / 4
ELIT 114	Critical Reading	3 / 6
ELIT 130	Selections from English Literature (to the Restoration)	3 / 5
ENG 102	English and Composition II	3 / 6
ENG 118	Advanced English Grammar II	3 / 4
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ELIT 209	Topics in Literary and Cultural Studies	3 / 6
ELIT 217	Research and Writing Techniques for Literary Essays	3 / 6
ELIT 265	Introduction to the Novel	3 / 6
ELIT 281	The Short Story	3 / 6

GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
SOC 101	Introduction to Sociology	3 / 6

Spring Semester Credits / ECTS Credits

ELIT 222	Introduction to Theory and Criticism	3 / 6
ELIT 242	Introduction to Drama	3 / 6
ELIT 262	The English Novel (19th Century)	3 / 6
ELIT 270	Poetry	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
POLS 104	Introduction to Political Science II	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

ELIT 290	Summer Training	- / 6
ELIT 351	Shakespeare I (Comedies, Romances, Problem Plays)	3 / 7
ELIT 355	Renaissance Literature	3 / 6
ELIT 361	Modern British Fiction I (to the 1950s)	3 / 7
HUM 111	Cultures Civilizations and Ideas I	3 / 6
	Non Technical Elective	3 / 6

Spring Semester Credits / ECTS Credits

ELIT 352	Shakespeare II (Tragedies, Roman Plays, Histories)	3 / 7
ELIT 356	Seventeenth and Eighteenth Century Literature	3 / 6
ELIT 362	Modern British Fiction II (1950s to present)	3 / 6
HUM 112	Cultures Civilizations and Ideas II	3 / 6
	Non Technical Elective	3 / 6

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

ELIT 423	Theory and Practice of Criticism	3 / 6
ELIT 443	British Drama	3 / 6
ELIT 457	Major Writers of the Victorian Period	3 / 6
ELIT 471	Romantic Poetry	3 / 6
	Non Technical Elective	3 / 6

Spring Semester Credits / ECTS Credits

ELIT 463	Post-Colonial Literature	3 / 6
ELIT 474	Twentieth Century Poetry	3 / 6
ELIT 490	Senior Project	3 / 6
ENG 312	Introduction to Creative Writing	3 / 6
	Non Technical Elective	3 / 6

MINOR PROGRAM

The Minor Program in English Language and Literature aims at providing a wide range of courses which deal with various topics in English literature, history and culture. In-depth analysis and discussion of literary genres, terms and movements form the basis of the program. Current trends in literature can be studied, but courses also cover mythology, as various periods in English Literature, from Middle English literature to the Renaissance, the seventeenth century, the Neoclassical Age, the Victorian and Romantic periods and the present. Since our courses emphasize writing and speaking skills, students will gain fluency in English as well as good understanding of the texts within their historical and social contexts. One of the ultimate aims of the program is to consider the place of British culture and literature in relation to the formation of world literatures.

Prerequisite Courses:

A minimum grade of B- in ENG 102

CURRICULUM

Courses		Credits / ECTS Credits
ELIT 242	Introduction to Drama	3 / 6
ELIT 265	Introduction to the Novel	3 / 6
ELIT 270	Poetry	3 / 6
ELIT 281	The Short Story	3 / 6
	ELIT Course Electives (2)	6 / 12

COURSE DESCRIPTIONS

ELIT 109 Translation I (English-Turkish)
Aims to use English passages for translation to help students improve their reading comprehension, enlarge their vocabulary, and deepen their awareness and understanding of different usage and structures. *Credit units: 3 ECTS Credit Units: 6. Aut (C. Demir, C. Ekiz)*

ELIT 112 Translation II (Turkish-English)
Sequel to ELIT 109. Designed to help students practice their written English through translation of various texts in Turkish allowing them to use different grammatical structures. *Credit units: 3 ECTS Credit Units: 4. Spr (G. Kurtuluş)*

ELIT 114 Critical Reading
The first year course will offer a means of bringing together and further developing the student's reading and comprehension skills. The main aim of the course will be to create and develop students' awareness of centrality of careful critical reading to the study of literature. The course will involve the teaching and development of critical interpretative and reading skills using a variety of short texts and will introduce the students, at a basic level, to the range of critical approaches to the study of literature that are available. *Credit units: 3 ECTS Credit Units: 6. Spr (P. Hart)*

ELIT 115 Oral Expression Discussion and Presentation
This course aims to help students improve their speaking skills in an intellectual context. Through extensive drills and practice, students will be familiarized with ways and methods of oral expression, meaningful, persuasive and coherent speech, and discussion and presentation. Course material will include topics and relatively short or excerpted texts in a wide spectrum of areas such as humanities, social sciences, history, philosophy, psychology, science and technology, the arts, music, and media. *Credit units: 3 ECTS Credit Units: 4. Aut (M. P. Kohn)*

ELIT 130 Selections from English Literature (to the Restoration)
Designed to familiarize students with the major works and authors of English literature from its beginnings to the Restoration. The works to be introduced may include *Beowulf; Canterbury Tales; Sir Gawain and the Green Knight*; *Piers Plowman*; Medieval lyrics, ballads, and plays; *Morte Darthur; Utopia*; 16th century sonnets, and lyrics; *The Faerie Queene; Dr. Faustus*; Metaphysical and Cavalier Poetry; *Paradise Lost*, essays by Bacon; *Leviathan*. *Credit units: 3 ECTS Credit Units: 5. Spr (A. Bonar, S. Levelt)*

ELIT 139 Appreciation of Literature
An introduction to the study and appreciation of three major literary genres: drama, fiction and poetry. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Kurtuluş)*

ELIT 141 British History
This course aims to cover British history from the times of Beowulf to the present, with particular emphasis on the modern era. The focus will be on the social, economic, and political dimensions of the various historical periods covered. *Credit units: 3 ECTS Credit Units: 5.*

ELIT 209 Topics in Literary and Cultural Studies
This course offers students the opportunity to study one topic in an in-depth manner. The instructor may organize the course around a specific theme (monsters, falling in love, London), genre (the Gothic, young adult fiction, journalism), critical paradigm (globalization, print culture, performance), or particular aspect of British culture (contemporary film, J. K. Rowling, the Beatles). Through sustained focus on a single topic, students will improve their ability to draw links among diverse literary texts and establish critical connections. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 114 or ELIT 139. Aut (S. Levelt, K. Weisbrode)*

ELIT 217 Research and Writing Techniques for Literary Essays
The course aims at teaching English Literature students the necessary steps of research and writing literary essays on the subjects chosen from English Literature. The process involves such stages of selecting a topic, using library facilities, compiling a working bibliography, taking notes, avoiding plagiarism, preparing an outline and writing a well-organized, adequately supported and accurately documented research essays. At the end

of the course the students are expected to develop a notion of academic writing using the necessary tools and become familiar with the steps of writing literary essays. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (ENG 101 and ENG 102) and (ELIT 139 or ELIT 114). Aut (M. Kalender, M. Karabağ)*

ELIT 222 Introduction to Theory and Criticism
The course will analyze texts from at least three major theoretical movements of relevance to contemporary critical practice, including Marxism, psychoanalytical criticism, structuralism, post-structuralism, and theories of gender, sexuality, and culture. These theoretical texts will be studied in conjunction with selected primary texts in order to enable students to see how theory works in practice. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 114 or ELIT 139. Spr (D. Ilic, M. K. Ozment)*

ELIT 224 World Mythology
An introduction to the origins and characteristics of myth and the study of mythic motives and themes found in world mythology with emphasis on classical myths. *Credit units: 3 ECTS Credit Units: 6.*

ELIT 225 British Society and Culture
This course offers an introduction to life and society in Britain from the Middle Ages to the 19th century. It also aims to enhance students' interest on society and culture in Britain in the 21st century with emphasis on the connection, relationship and difference between national culture and cultural identities and how these identities have been shaped and reshaped as multiculturalism has come into scene. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 141.*

ELIT 242 Introduction to Drama
An introduction to the study of drama based on a selection of works including Greek tragedy and modern classics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 139. Spr (Staff)*

ELIT 262 The English Novel (19th Century)
A study of the major English novelists of the 19th century. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 265. Spr (A. Çelikkol)*

ELIT 265 Introduction to the Novel
This course introduces students to the study of the novel in English, placing emphasis on formal qualities such as language, structure, plot, character, theme, and setting. The course offers a bridge between earlier courses introducing students to literary study more broadly, and later courses, in which the novel is studied in period and thematic more broadly, and later courses, in which the novel is studied in period and thematic contexts. Texts for study may be taken from any period or sub-genre of the novel. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 114 or ELIT 139. Aut (A. Çelikkol)*

ELIT 270 Poetry
An introduction to poetry through selected examples written in English. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 114 and ELIT 139. Spr (P. Hart, H. H. T. Yeung)*

ELIT 281 The Short Story
An introduction to the short story through selected examples from British, American, and world writing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 114 or ELIT 139. Aut (C. Costantini, V. J. Kennedy)*

ELIT 290 Summer Training
The minimum time for this practice in an organization is four weeks (20 workdays). The main objective is to observe and experience an academic and/or non-academic organization in a workplace. Literature students are skillful in interpretation, creative thinking and problem solving; they can be efficient in the industry environment. Organizations may be one of the following: hotels and caterings, language schools, law companies, libraries, marketing and advertisement companies, newspapers, magazines, publishing houses, broadcasting companies, kindergartens, museums, translation agencies, real estate agencies, insurance companies, broker firms, etc. *Credit units: None ECTS Credit Units: 6. Aut (G. Kurtuluş)*

ELIT 351 Shakespeare I (Comedies, Romances, Problem Plays)
This course aims to develop students' skills in textual analysis and criticism of Shakespeare's romantic comedies, romances, and problem plays. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: ELIT 242 and ELIT 270. Aut (P. Hart)*

ELIT 352 Shakespeare II (Tragedies, Roman Plays, Histories)
A study of Shakespeare's tragedies, Roman plays, and histories. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: ELIT 242 and ELIT 270. Spr (G. Kurtuluş)*

ELIT 355 Renaissance Literature
This course will introduce students to the major writers, genres and contexts of Renaissance literature. Topics studied may include Petrarchism and the sonnet sequence; other forms of lyric poetry, including the Renaissance epic; romance and pastoral, in poetry and prose; Renaissance Humanism; the Reformation; the impact of the discovery of new worlds and of the New Science on Renaissance writing; translation and the English Bible; travel

writing; manuscript and print; the school of Donne; the Tribe of Ben; the Scottish Renaissance; and Elizabethan and Jacobean drama. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 270. Aut (P. Hart, B. A. Turner)*

ELIT 356 Seventeenth and Eighteenth Century Literature

This course will give students a broad introduction to the literature and culture of the 'long eighteenth century,' covering a period from the English Revolution of the 1640s to the French Revolution of 1789. Topics covered may include the literature of the civil wars; Milton's *Paradise Lost*, Restoration drama; the flowering of satire; the literature of the Enlightenment; English landscape writing; Neoclassicism and its emphasis on reason, harmony, and wit; the birth of the modern novel; the literature of sentiment and sensibility; and the origins and development of the Gothic. Writers who may be studied in the course include Andrew Marvell, Aphra Behn, Margaret Cavendish, John Bunyan, Samuel Pepys, John Wilmot, Daniel Defoe, Jonathan Swift, Joseph Addison and Richard Steele, Alexander Pope, Lady Mary Wortley Montagu, Samuel Johnson, Laurence Sterne, Olaudah Equiano, and Thomas Paine. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 355. Spr (K. E. Herndon, V. J. Kennedy)*

ELIT 361 Modern British Fiction I (to the 1950s)

A survey of developments in British fiction from the beginning of the 20th century to the 1950s. Major authors might include Conrad, Woolf, Joyce, D.H. Lawrence, E.M. Forster, Waugh and Orwell. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: ELIT 262 or ELIT 265. Aut (C. D. Stockwell, H. H. T. Yeung)*

ELIT 362 Modern British Fiction II (1950s to present)

A study of developments in British fiction in the second half of the 20th century, such as post-modernism, feminist issues, and the campus novel. Authors may include Golding, Fowles, Beckett, Durrell, Lessing, Murdoch, Drabble, Weldon, Roberts, K. Amis, Lodge, Bradbury, Barker, Winterson, etc. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 262 or ELIT 265 or ELIT 361. Spr (C. Costantini, P. F. Fessenbecker)*

ELIT 423 Theory and Practice of Criticism

This course explores the theoretical basis of literary criticism. Introducing students to transformative moments such as the linguistic turn, it draws attention to larger intellectual contexts that gave rise to specific literary critical practices. The course also offers exercises to help students to recognize the philosophical and historical premises of their own practices of criticism. Authors may include Althusser, Saussure, Barthes, Foucault, Derrida, Lacan, Kristeva, and Spivak. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and ELIT 222. Aut (A. Bonar, A. Çelikkol)*

ELIT 443 British Drama

This course aims to analyze plays from the eighteenth century to the present, with close attention to emergent themes, methods and movements in the drama. Selected plays may cover Restoration Comedy of Manners, nineteenth and twentieth century drama and the recent plays, which are mostly on the second and the third wave feminism, political and global concerns will be examined, as well as examples written by the representatives of 'new writing.' Dramatists may include Dryden, Congreve, Gay, Pinero, Sheridan, Goldsmith, Wilde, Priestley, Shaw, Eliot, Synge, Tom Stoppard, Caryl Churchill, Timberlake Wertenbaker, Brian Friel, Edward Bond, David Hare, David Greig, John McGrath, Howard Brenton, Sarah Daniels, etc. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and ELIT 242. Aut (G. Kurtuluş)*

ELIT 457 Major Writers of the Victorian Period

The course will study some of the major writers and works in prose and poetry of the Victorian period, using thematic and/or chronological approaches. Themes might include: the Condition of England Question, The Woman Question, and Race and Empire. Authors may include Carlyle, Marx, Engels, John Ruskin, Charles Dickens, Mathew Arnold, Alfred Lord Tennyson, and Christina Rossetti, Patmore, Mill, Barrett Browning, Thomas Babington Macaulay, Charles Darwin, Mary Kingsley, and Rudyard Kipling. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and (ELIT 262 or ELIT 356) . Aut (V. J. Kennedy)*

ELIT 463 Post-Colonial Literature

A study of recent fiction written in English by authors from the former British Empire. Works by such authors as Chinua Achebe, Buchi Emecheta, V.S. Naipaul, Salman Rushdie, Hanif Kureishi, Anita Desai and Ngugi wa Thiong'o may be discussed. Post-colonial theory may also be studied through selected texts by authors like Edward Said, Frantz Fanon, Homi Bhabha, and Gayatri Spivak. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and ELIT 222 and ELIT 265. Spr (V. J. Kennedy)*

ELIT 471 Romantic Poetry

A study of selections from the major works of such poets as Wordsworth, Coleridge, Byron, Shelley and Keats. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and ELIT 270 and ELIT 356. Aut (H. H. T. Yeung)*

ELIT 474 Twentieth Century Poetry

This course will introduce students to some of the most significant poems, poets and poetic movements of the period, focusing on issues of language, style and form and connections between poetic practice and history, society and culture. Students will explore the impact of Modernism on poetry in the British Isles, focusing on poets such as Eliot and Yeats, before going on to examine some of the diverse responses and reactions to that

legacy in the second half of the century, such as those of the Movement of the 1950s and of the British Poetry Revival of the 1980s. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELIT 217 and ELIT 222 and ELIT 270. Spr (H. H. T. Yeung)*

ELIT 490 Senior Project

ELIT 490 aims to follow the development of each student's ability to carry out an independent study. Under the supervision of a faculty member students are required to work in topics such as: a) Blog Building, b) Creative Writing, c) Translation, d) Shakespeare Studies, e) Theatre Performance, f) Establishing Annotated Bibliographies, g) Academic papers with presentations, etc. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Çelikkol, P. Hart, V. J. Kennedy, G. Kurtuluş, H. H. T. Yeung)*

DEPARTMENT OF PHILOSOPHY

S. D. Wigley (Chair), I. A. Aranyosi, S. Berges, Y. S. Berkovski, N. Keven, D. Kovacs, M. Nakeeb, R. M. Tzinman, L. R. Vinx, W. G. Wringe.

The Department of Philosophy offers a B.A. and M.A. degree in philosophy. Plans for a Ph.D. degree program are in progress.

The aim of the department is threefold: (i) by exploring influential philosophical arguments and ways of arguing, the department intends to impart upon the students the intellectual resources to discern lines of thought and courses of action that are defensible as opposed to ill-considered; (ii) the department aims to foster background capabilities—self-reliance, judging well when making decisions, creativity in problem-solving, adaptability, argumentative acumen and so forth—that complement and are essential to the good use of vocational skills; (iii) by investigating abstract problems and arguments in depth and by adopting an analytic stance the department aims to provide students with a solid platform from which to pursue graduate studies in philosophy.

The curriculum is broad based in that the students are required to complete courses in a number of academic fields other than philosophy, i.e., physics, biology, computers, mathematics, economics, languages, literature, arts and history. Because the curriculum provides each student with a substantive grounding in these fields, the student is able to constructively challenge the way they are practiced from a position of authority rather than from a position of hearsay. Besides, several of the courses (e.g. languages, statistics, computer programming, summer training) aim to develop specific skills that are essential to the workplace. In the meantime, the philosophy courses on their own provide a more than sufficient basis from which to pursue graduate work in philosophy. As a result, the critical mass of philosophical understanding is established whilst at the same time each student's future career options are not foreclosed due to unnecessary over-specialization at an early stage.

The department places a premium upon: (i) discussion-based class work, encouraging the students to be actively part of the learning experience; (ii) essay-based assessment (complemented by a drafting process and a series of essay tutorials); (iii) tutorials and ongoing feedback; (iv) trusting the students to come to terms with the original texts, rather than asking them to work from watered-down commentaries on those texts; (v) the development of each student's ability to pursue independent research (culminating in the fourth year where a thesis is completed on a chosen topic under the supervision of a faculty member).

The Philosophy Undergraduate Program, Minor Program, and Course Descriptions can be found at the following address: http://www.phil.bilkent.edu.tr

UNDERGRADUATE PROGRAM

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 123	Introduction to Computing and Programming	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 105	Introduction to Calculus I	4 / 7
PHIL 101	Introduction to Logic	3 / 6
PHIL 103	Introduction to Philosophy I	3 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
ECON 103	Principles of Economics	3 / 6
ENG 102	English and Composition II	3 / 6
MATH 106	Introduction to Calculus II	4 / 7

PHIL 102	Ancient Philosophy	3 / 6
PHIL 104	Introduction to Philosophy II	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ECON 221	Introduction to Probability and Statistics I	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
PHIL 201	Epistemology	3 / 6
PHIL 203	Rationalists	3 / 6
PHYS 107	Basic Physics I	4 / 6
	Second Foreign Language Elective	3 / 6

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
PHIL 202	Ethics	3 / 6
PHIL 204	Empiricists	3 / 6
PSYC 100	Introduction to Psychology	3 / 6
*	PHYS 108 or MBG 110	3 / 6
	Second Foreign Language Elective	3 / 6

* Students should take either PHYS 108 or MBG 110 in this semester in addition to the aforementioned courses (see ELECTIVES)

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
PHIL 299	Summer Training I	- / 6
PHIL 303	Kant	3 / 6
PHIL 305	Intermediate Logic	3 / 6
PHIL 401	Metaphysics	3 / 6
	Literature Elective	3 / 6
	Second Foreign Language Elective	3 / 6

Spring Semester		Credits / ECTS Credits
PHIL 301	Political Philosophy	3 / 6
PHIL 306	Philosophy of Language	3 / 6
PHIL 308	Philosophy of Mind	3 / 6
	Art Elective	3 / 6
	Second Foreign Language Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
PHIL 304	Philosophy of Science	3 / 6
PHIL 399	Summer Training II	- / 6
PHIL 403	Senior Thesis I	3 / 6
	Computing Elective	3 / 6
	Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
PHIL 302	Social and Legal Philosophy	3 / 6
PHIL 402	Aesthetics	3 / 6
PHIL 404	Senior Thesis II	3 / 6
	Elective	3 / 6
	History Elective	3 / 6

SECOND FOREIGN LANGUAGE ELECTIVES

FRE 111	Basic French I	3 / 6
FRE 112	Basic French II	3 / 6

FRE 113	Basic French III	3 / 6
FRE 114	Basic French IV	3 / 6
FRE 211	Intermediate French I	3 / 6
FRE 212	Intermediate French II	3 / 6
FRE 213	Intermediate French III	3 / 6
FRE 214	Intermediate French IV	3 / 6
FRE 381	Communication Skills in French I	3 / 6
FRE 382	Communication Skills in French II	3 / 6
FRE 401	Readings in French I	3 / 6
FRE 402	Readings in French II	3 / 6
GER 111	Basic German I	3 / 6
GER 112	Basic German II	3 / 6
GER 113	Basic German III	3 / 6
GER 114	Basic German IV	3 / 6
GER 211	Intermediate German I	3 / 6
GER 212	Intermediate German II	3 / 6
GER 213	Intermediate German III	3 / 6
GER 214	Intermediate German IV	3 / 6
GER 381	Communication Skills in German I	3 / 6
GER 382	Communication Skills in German II	3 / 6
GER 421	Readings in German I	3 / 6
GER 422	Readings in German II	3 / 6
HART 231	Ancient Greek I	3 / 6
HART 232	Ancient Greek II	3 / 6
HART 239	Latin I	3 / 6
HART 240	Latin II	3 / 6
HART 333	Ancient Greek III	3 / 6
HART 334	Ancient Greek IV	3 / 6
HART 343	Latin III	3 / 6
HART 344	Latin IV	3 / 6

HISTORY ELECTIVES

HART 120	Human Evolution and World Prehistory	3 / 6
HIST 411	Ottoman History: 1300-1600	3 / 6
HIST 412	Ottoman History: 1600-1914	3 / 6
HIST 413	Byzantine History I: 324-1025	3 / 6
HIST 414	Byzantine History II: 1025-1453	3 / 6
HIST 415	British History: 1485-1914	3 / 6
HIST 416	Medieval British History	3 / 6
HIST 417	Medieval Europe (500-1500)	3 / 6
HIST 418	Modern Europe (1453-1914)	3 / 6
HIST 424	America and the World since 1898	3 / 6
HIST 431	History of the United States until the Reconstruction	3 / 6
HIST 432	History of the United States from the Reconstruction	3 / 6
HIST 433	History of American Politics	3 / 6
IR 347	The International System	3 / 6
IR 351	Globalization	3 / 6
IR 464	History of the Cold War	3 / 6
IR 493	European Union	3 / 6
IR 494	Causes and Prevention of War	3 / 6
POLS 338	Cosmopolis: From the Roman to the Ottoman and British Empires	3 / 6
POLS 343	Social Theory: Past and Present	3 / 6
POLS 353	Foundations of Modern Political Theory	3 / 6
POLS 407	Contemporary Political Ideologies	3 / 6
POLS 421	Issues in Modern Political Thought	3 / 6
POLS 464	Interculturalism and Europe	3 / 6
POLS 475	European Union: The Challenges	3 / 6

LITERATURE ELECTIVES

AMER 343	American Theater	3 / 6
AMER 357	American Intellectual History I	3 / 6
AMER 358	American Intellectual History II	3 / 6
AMER 374	American Poetry	3 / 6
AMER 383	American Novel to 1900	3 / 6
AMER 384	American Novel From 1900	3 / 6
AMER 448	American Pragmatism	3 / 6
AMER 460	Contemporary Native American Writers	3 / 6
AMER 483	Freedom and Philosophy in Anglo-America	3 / 6
AMER 492	Gender Studies in American Culture	3 / 6
ELIT 224	World Mythology	3 / 6
ELIT 242	Introduction to Drama	3 / 6
ELIT 262	The English Novel (19th Century)	3 / 6
ELIT 265	Introduction to the Novel	3 / 6
ELIT 270	Poetry	3 / 6
ELIT 281	The Short Story	3 / 6
ELIT 351	Shakespeare I (Comedies, Romances, Problem Plays)	3 / 7
ELIT 352	Shakespeare II (Tragedies, Roman Plays, Histories)	3 / 7
ELIT 355	Renaissance Literature	3 / 6
ELIT 356	Seventeenth and Eighteenth Century Literature	3 / 6
ELIT 361	Modern British Fiction I (to the 1950s)	3 / 7
ELIT 362	Modern British Fiction II (1950s to present)	3 / 6
ELIT 423	Theory and Practice of Criticism	3 / 6
ELIT 443	British Drama	3 / 6
ELIT 457	Major Writers of the Victorian Period	3 / 6
ELIT 463	Post-Colonial Literature	3 / 6
ELIT 471	Romantic Poetry	3 / 6
ELIT 474	Twentieth Century Poetry	3 / 6
HUM 331	Humanities and Social Science Honors Seminar	3 / 6
POLS 437	Politics and Literature	3 / 6

ART ELECTIVES

COMD 321	Analysis of Moving Image	3 / 6
COMD 322	Film Theory and Criticism	3 / 6
COMD 354	Game Design and Research	3 / 6
FA 213	Introduction to Printmaking I	3 / 6
FA 223	Visual Perception and Color	3 / 4
FA 262	Fine Arts Seminar	3 / 4
FA 361	Philosophy of Art I	3 / 6
FA 371	History of Art III	3 / 4
FA 372	History of Art IV	3 / 4
FA 421	Analysis of Art Work I	3 / 4
FA 422	Analysis of Art Work II	3 / 4
GRA 341	History of Graphic Art	3 / 6
HART 430	Readings in Near Eastern Art and Archaeology	3 / 6
HART 440	Readings in Anatolian Art and Archaeology	3 / 6
HART 450	Readings in Greek Art and Archaeology	3 / 6
HART 460	Readings in Roman Art and Archaeology	3 / 6
HART 470	Readings in Byzantine Art and Archaeology	3 / 6

ELECTIVES

AMER 207	American Texts and Contexts I	4 / 6
AMER 293	American History I	3 / 6
BIM 223	Business Communications	3 / 6
BIM 224	Managerial Communications	3 / 6
COMD 205	Basic Photography	3 / 6

COMD 322	Film Theory and Criticism	3 / 6
COMD 331	News Reporting and Writing	3 / 6
COMD 333	News and Society	3 / 6
COMD 341	Media and Society	3 / 6
COMD 342	Popular Culture	3 / 6
COMD 346	Introduction to Advertising	3 / 6
COMD 347	Media Industries	3 / 6
COMD 348	New Media	3 / 6
COMD 363	Music and Media	3 / 6
COMD 364	Video Production for Non-majors	3 / 6
COMD 365	Media, Memory and Culture	3 / 6
COMD 424	Media Theory and Methods	3 / 6
COMD 433	Gender and Media	3 / 6
COMD 471	Media Ethics	3 / 6
ECON 203	Microeconomic Theory I	3 / 6
ECON 205	Macroeconomic Theory I	3 / 6
ECON 363	History of Economic Thought	3 / 6
ELIT 114	Critical Reading	3 / 6
ELIT 139	Appreciation of Literature	3 / 6
ELIT 217	Research and Writing Techniques for Literary Essays	3 / 6
ELIT 222	Introduction to Theory and Criticism	3 / 6
GRA 209	Graphic Design for Non-Majors	3 / 6
GRA 218	Essentials of Photography	3 / 6
GRA 323	Logos, Symbols and Signs	3 / 6
GRA 324	Photographic Practice	3 / 6
IR 101	Introduction to World Politics	3 / 6
IR 331	War, Peace and Security	3 / 6
IR 335	International Relations Theory	3 / 6
IR 338	Politics of International Economy	3 / 6
IR 346	Human Rights and Human Security Regimes	3 / 6
IR 352	Environmental Issues and Ecological Sustainability	3 / 6
IR 413	Game Theory and International Politics	3 / 6
IR 454	International Environmental Politics	3 / 6
IR 465	Global Economic Governance	3 / 6
LAUD 483	Environment Philosophy and Ethics	3 / 6
LAW 313	Business Law	3 / 4
MATH 300	A Concise History of Mathematics	3 / 6
MBG 110	Introduction to Modern Biology	3 / 6
MBG 416	Science and Ethics	3 / 6
MBG 475	Molecular Basis of Evolution	3 / 6
MBG 488	Introduction to Human Genetics	3 / 6
PHIL 405	Advanced Philosophy of Language	3 / 6
PHIL 406	Advanced Philosophy of Mind	3 / 6
PHIL 407	Medieval Philosophy	3 / 6
PHIL 408	Nineteenth Century Philosophy	3 / 6
PHIL 409	Introduction to Phenomenology	3 / 6
PHIL 410	History of Analytic Philosophy	3 / 6
PHIL 411	What is a Mind?	3 / 6
PHIL 412	Philosophy of Mathematics	3 / 6
PHIL 413	Foundations of Cognitive Science	3 / 6
PHIL 414	Consciousness	3 / 6
PHIL 415	Moral Psychology	3 / 6
PHIL 416	From the Kitchen to the Streets: An Introduction to Feminism	3 / 6
PHIL 418	Philosophy of Cognitive Science	3 / 6
PHYS 108	Basic Physics II	4 / 6
PHYS 226	Quantum Physics	3 / 6
POLS 357	Ethics and Morality in Daily Life	3 / 6
POLS 449	Political Concepts	3 / 6
POLS 466	Issues in Political Theory	3 / 6

POLS 483	Liberalism and Socialism: Past and Present	3 / 6
POLS 484	Life, Nature and Politics	3 / 6
POLS 488	Film and Politics	3 / 6
POLS 495	International Political Economy	3 / 6
POLS 4204	Politics of The Balkans	3 / 6
POLS 4536	Turkish Politics in Comparative Perspective	3 / 6
POLS 4544	Theories of State	3 / 6
PSYC 102	Introduction to Social Psychology	3 / 6
PSYC 103	Introduction to Psychology II / Social and Developmental	3 / 6
PSYC 200	Cognitive Psychology	3 / 7
PSYC 203	Statistics I	3 / 6
PSYC 205	Statistics II	3 / 6
PSYC 220	Brain and Behaviour	3 / 6
PSYC 230	Social Psychology	3 / 6
PSYC 240	Developmental Psychology	3 / 6
PSYC 310	Perception, Attention, and Action	3 / 6
PSYC 320	Cognitive Neuroscience	3 / 6
PSYC 420	Selected Topics in Cognitive Psychology	3 / 6
PSYC 430	Clinical Psychology	3 / 6
PSYC 431	Psychological Testing and Measurement	3 / 6
PSYC 433	Abnormal Psychology	3 / 6
PSYC 434	Child and Adolescent Psychopathology	3 / 6
PSYC 435	Industrial and Organisational Psychology	3 / 6
PSYC 482	Mind in Evolution	3 / 6
PSYC 483	Theory of Mind	3 / 6
PSYC 491	Introduction to Cognitive Psychology	3 / 6

MBG 110 or PHYS 108 may be taken as elective, if not taken the second year.

MINOR PROGRAM

Professor Tom Nagel (New York University) regards fundamental research on nine core areas – how we know anything; other minds; the mind-body problem; the meaning of words; free will; right and wrong; justice; death; the meaning of life – as the essential responsibilities of a philosopher. The best way to become skilled at philosophy is to think about these topics analytically and in the tradition of rational inquiry.

Since its inception, the Department of Philosophy has hosted numerous distinguished analytic philosophers as short- or long-term visitors. The staff members, while pursuing diverse interests within the discipline, also subscribe to the analytic vision. The Minor Program in philosophy should arm a student who completes its course requirements with an indispensable background (and tricks of the trade) needed for advanced study. The courses in the Program study the original philosophical works in the foregoing areas mentioned by Nagel.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
PHIL 103	Introduction to Philosophy I	3 / 6
PHIL 104	Introduction to Philosophy II	3 / 6
PHIL 201	Epistemology	3 / 6
	Electives (3)	9 / 18

ELECTIVE COURSES

PHIL 102	Ancient Philosophy	3 / 6
PHIL 202	Ethics	3 / 6
PHIL 203	Rationalists	3 / 6
PHIL 204	Empiricists	3 / 6

PHIL 301	Political Philosophy	3 / 6
PHIL 302	Social and Legal Philosophy	3 / 6
PHIL 303	Kant	3 / 6
PHIL 304	Philosophy of Science	3 / 6
PHIL 306	Philosophy of Language	3 / 6
PHIL 308	Philosophy of Mind	3 / 6
PHIL 401	Metaphysics	3 / 6
PHIL 402	Aesthetics	3 / 6
PHIL 418	Philosophy of Cognitive Science	3 / 6

GRADUATE PROGRAM

Master of Arts in Philosophy

The M.A. degree in philosophy is designed to develop an advanced understanding of philosophical problems, especially those in contemporary analytic philosophy and the history of philosophy. It provides students with an understanding of key philosophical debates and problems, and encourages them to develop and defend their own argumentative position. Coursework will often have an interdisciplinary character. Many courses will explore the impact of empirical and theoretical developments in other disciplines on contemporary philosophical debates.

Admission: Applicants from all disciplines are encouraged to apply. Those without an undergraduate major or minor in philosophy may be required to take preparatory undergraduate courses in philosophy before they commence the M.A. degree. Applicants must demonstrate sufficient proficiency in English. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Degree Requirements: The program requires students to complete a minimum of 24 units of course work. By the end of the second year the student will complete and defend a master's thesis in a specialized field of study.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
PHIL 501	Research Preparation in Philosophy I	3 / 8
PHIL 502	Research Preparation in Philosophy II	3 / 8
PHIL 591	Thesis Seminar	- / 4
PHIL 599	M.A.Dissertation	- / 56
	Electives (2)	6 / 12
	Expanded Restricted Electives (2)	6 / 12
	Restricted Electives (2)	6 / 12

EXPANDED RESTRICTED ELECTIVES

PHIL 401	Metaphysics	3 / 6
PHIL 402	Aesthetics	3 / 6
PHIL 405	Advanced Philosophy of Language	3 / 6
PHIL 406	Advanced Philosophy of Mind	3 / 6
PHIL 407	Medieval Philosophy	3 / 6
PHIL 408	Nineteenth Century Philosophy	3 / 6
PHIL 409	Introduction to Phenomenology	3 / 6
PHIL 410	History of Analytic Philosophy	3 / 6
PHIL 411	What is a Mind?	3 / 6
PHIL 412	Philosophy of Mathematics	3 / 6
PHIL 413	Foundations of Cognitive Science	3 / 6
PHIL 414	Consciousness	3 / 6
PHIL 415	Moral Psychology	3 / 6

PHIL 416	From the Kitchen to the Streets: An Introduction to Feminism	3 / 6
PHIL 418	Philosophy of Cognitive Science	3 / 6
PHIL 501	Research Preparation in Philosophy I	3 / 8
PHIL 502	Research Preparation in Philosophy II	3 / 8
PHIL 504	Philosophy of Cognitive Science	3 / 6
PHIL 521	History of Political and Educational Philosophy	3 / 7
PHIL 531	Metaphysics	3 / 6
PHIL 532	Aesthetics	3 / 6

RESTRICTED ELECTIVES

PHIL 501	Research Preparation in Philosophy I	3 / 8
PHIL 502	Research Preparation in Philosophy II	3 / 8
PHIL 504	Philosophy of Cognitive Science	3 / 6
PHIL 521	History of Political and Educational Philosophy	3 / 7
PHIL 531	Metaphysics	3 / 6
PHIL 532	Aesthetics	3 / 6

COURSE DESCRIPTIONS

PHIL 101 Introduction to Logic
A self-contained introduction to the basic notions of logic, including language, truth, argument, consequence, proof, and counter example. Both propositional logic and predicate logic are studied (their syntax plus semantics), with an emphasis on translating English sentences into logical symbols. A contemporary software package such as *Tarski's World* may be used to construct derivations of valid arguments. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Keven)*

PHIL 102 Ancient Philosophy
This course introduces the thought of ancient philosophers focusing on questions about the purpose of philosophy, the nature of knowledge, virtue and the good life. *Credit units: 3 ECTS Credit Units: 6. Spr (M. Nakeeb)*

PHIL 103 Introduction to Philosophy I
The course raises and examines central problems in theoretical philosophy such as: Is there a world of things that exists independently of human thought and sensation? How can we know the difference between appearance and reality? How does our mind and the physical world relate? How can we know whether there are other minds? Do we freely choose our actions or are they pre-determined? Those problems are investigated through a close reading of influential texts in the history of philosophy. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Berges)*

PHIL 104 Introduction to Philosophy II
The course raises and examines central problems in practical philosophy such as: Is there a single true morality? To what extent is morality conventional? How can we know what is the right and wrong thing to do? Why should I do the right thing? What is it to live one's life well? Those problems are investigated through a close reading of influential texts in the history of philosophy. *Credit units: 3 ECTS Credit Units: 6. Spr (Y. S. Berkovski)*

PHIL 201 Epistemology
This course addresses several of the central problems of contemporary epistemology, such as: conceptions of epistemic justification; skeptical arguments and responses to them; foundationalism and coherentism; externalism and internalism; causal theories of knowledge; rationality and cognitive relativism; naturalised epistemology. *Credit units: 3 ECTS Credit Units: 6. Aut (S. D. Wigley)*

PHIL 202 Ethics
This course endeavors to appraise critically the moral sense, deontological, utilitarian and intuitionist accounts of morality. In so doing it asks: Do our value judgments merely reflect our subjective preferences or are they based on an objective reality? Is there a single ultimate value? Should we be guided by reason or passion, altruism or egoism? Should we determine a person's worth based on the consequences of their actions or the motives for their actions? Does maximizing overall happiness respect the individual? *Credit units: 3 ECTS Credit Units: 6. Spr (W. G. Wringe)*

PHIL 203 Rationalists
This course introduces the rationalist tradition in philosophy through the works of Descartes, Leibniz, and Spinoza. We will look at these philosophers' responses to questions about substance, perception, thought, identity and causality. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Kovacs)*

PHIL 204 Empiricists
This course introduces the works of empiricist philosophers Locke, Berkeley, and Hume focusing on the nature of substance, perception, and thought, and philosophical problems about identity and causality. *Credit units: 3 ECTS Credit Units: 6. Spr (D. Kovacs)*

PHIL 241 Social and Political Philosophy I
What is to live one's life well? Is there a single true morality? How can we know what is the right and wrong thing to do? Why should I do the right thing? These problems and more are examined through a close reading of influential texts in the history of philosophy. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff)*

PHIL 242 Social and Political Philosophy II
Should we be guided by reason or passion, altruism or egoism? Is the idea of forcing someone to be free a contradiction? Should there be limits on what justice can demand in order to bring about the best consequences? These problems and more are examined through a close reading of influential texts in the history of philosophy. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHIL 241. Spr (Staff)*

PHIL 243 Social and Political Philosophy I
This course is based on classic texts in the history of philosophy, starting from the ancient Greek period through to the Renaissance. The course is equally divided into Philosophy and English Language parts. While both parts of the course focus on the same set of texts, the emphasis and assessment criteria for each are different. The Philosophy part places more emphasis on evaluating the ideas and arguments expressed by each philosopher. Questions to be considered include: What does it mean to live one's life well? Is there a single true morality? How can we know what is the right and the wrong thing to do? Why should I do the right thing? The English part will place more emphasis on developing the ability to read and interpret challenging texts, as well as the ability to communicate verbally and in writing. Thus, the English part uses the original texts to further develop the goals achieved during first year English courses (ENG 101/102). *Credit units: 6 ECTS Credit Units: 12. Aut (S. Berges, Y. S. Berkovski, I. Board, A. Bonar, D. C. Butcher, J. W. Day, J. M. Doonan, A. Kadıoğlu, İ. Kaya Yıldırım, D. Kovacs, R. M. Tzinman, L. R. Vinx, W. G. Wringe)*

PHIL 244 Social and Political Philosophy II
This course is based on classic texts in the history of philosophy, starting from the early modern period through to the turn of the twentieth century. The course is equally divided into Philosophy and English Language parts. While both parts of the course focus on the same set of texts, the emphasis and assessment criteria for each are different. The Philosophy part places more emphasis on evaluating the ideas and arguments expressed by each philosopher. Questions to be considered include: Should our actions be guided by reason or passion, altruism or egoism? Is the idea of forcing someone to be free a contradiction? Should there be limits on what justice can demand in order to bring about the best consequences? The English part will place more emphasis on developing the ability to read and interpret challenging texts, as well as the ability to communicate verbally and in writing. Thus, the English part uses the original texts to further develop the goals achieved during first year English courses (ENG 101/102). *Credit units: 6 ECTS Credit Units: 12. Spr (S. Berges, Y. S. Berkovski, I. Board, A. Bonar, D. C. Butcher, J. W. Day, J. M. Doonan, A. Kadıoğlu, İ. Kaya Yıldırım, N. Keven, D. Kovacs, R. M. Tzinman, L. R. Vinx, W. G. Wringe)*

PHIL 299 Summer Training I
The minimum time for this practice in an organization is four weeks (20 workdays). The main objective is to observe a non-academic organization in an original setting. Since philosophy students have the ability to look for different approaches and take an open mind to issues, they must come handy in the workplace. Organizations can be any of the following: think-tanks, human rights organizations, NGOs, charities, marketing and advertisement companies, law firms, newspapers, magazines, broadcasting companies, publishing houses, etc. It is crucial to secure the approval of the department chair for the suitability of the intended summer training place. Students should do this before they make arrangements with the organization. A written report summarizing training experience is required. *Credit units: None ECTS Credit Units: 6, Prerequisite: PHIL 202. Aut (Staff) Spr (Staff)*

PHIL 301 Political Philosophy
When, if at all, is coercion justified? When is it justified to disobey? In what sense should I be free in a political community? Is the idea of forcing someone to be free a contradiction? Those questions and more are examined through a close reading of influential philosophical texts. *Credit units: 3 ECTS Credit Units: 6. Spr (S. D. Wigley)*

PHIL 302 Social and Legal Philosophy
What should be the relationship between the individual and the state? Must we be embedded in the social world in order to be free? How can we justify rules of justice? Should there be limits on what justice can demand in order to bring about the best consequences? Those questions and more are examined through a close reading of influential philosophical texts. *Credit units: 3 ECTS Credit Units: 6. Spr (L. R. Vinx)*

PHIL 303 Kant
This course is based around a close and critical reading of Kant's *Critique of Pure Reason*. We concentrate on assessing Kant's response to the possibility that the world studied by science is in some sense mind-

dependent and/or mind-constructed. More specifically, we consider his distinction between *a priori and a posteriori* knowledge and analytic and synthetic judgments, his argument for synthetic *a priori* truths, his transcendental deduction of the categories and his transcendental idealism. *Credit units: 3 ECTS Credit Units: 6. Aut (L. R. Vinx)*

PHIL 304 Philosophy of Science
It is often assumed that science is a paradigm of rational inquiry. In this course we look at a number of recent accounts of scientific rationality which try to give good grounds for this assumption. We also consider the closely related question of scientific realism: when do we have good grounds for thinking that the objects described in scientific theories really exist? *Credit units: 3 ECTS Credit Units: 6. Aut (Y. S. Berkovski)*

PHIL 305 Intermediate Logic
This course builds on PHIL 101 - Introduction to Logic, and focuses on the uses and limitations of formal techniques in the study of language and argument. Topics to be covered will include: Further study of propositional and predicate calculus, including discussion of completeness, soundness and decidability results; set-theoretic and semantic paradoxes; Introduction to modal and intuitionistic logic; logic and computability. *Credit units: 3 ECTS Credit Units: 6. Aut (N. Keven)*

PHIL 306 Philosophy of Language
We discuss key concepts such as: truth, meaning, reference, logical form, speech act and metaphor. In addition we critically assess various theories that aim to show what it is for a statement to be true. As preparation, the course commences with a brief recap of key aspects of logic. *Credit units: 3 ECTS Credit Units: 6. Spr (Y. S. Berkovski)*

PHIL 308 Philosophy of Mind
This course introduces students to key issues in contemporary philosophy of mind. We start by looking at dualist, materialist and functionalist responses to the mind/body problem, and consider a range of further issues about personal identity, consciousness and intentionality. A key guiding issue is, 'To what extent, and in what ways can the human mind be compared to a computer?' *Credit units: 3 ECTS Credit Units: 6. Spr (R. M. Tzinman)*

PHIL 399 Summer Training II
The minimum time for this practice in an organization is four weeks (20 workdays). The main objective is to observe a non-academic organization in an original setting. Since philosophy students have the ability to look for different approaches and take an open mind to issues, they must come handy in the workplace. Organizations can be any of the following: think-tanks, human rights organizations, NGOs, charities, marketing and advertisement companies, law firms, newspapers, magazines, broadcasting companies, publishing houses, etc. It is crucial to secure the approval of the department chair for the suitability of the intended summer training place. Students should do this before they make arrangements with the organization. A written report summarizing training experience is required. *Credit units: None ECTS Credit Units: 6, Prerequisite: PHIL 299. Aut (Staff) Spr (Staff)*

PHIL 401 Metaphysics
Focusing on a selection of key texts, this course examines core topics in contemporary metaphysics, such as: truth, existence, universals and particulars, causality, modality, perception, knowledge, the *a priori*, identity, anomalous monism, supervenience, vagueness, and time. *Credit units: 3 ECTS Credit Units: 6. Aut (Y. S. Berkovski)*

PHIL 402 Aesthetics
This course examines key debates in the Philosophy of Art, such as the definition of art, the ontology of artworks, the nature and scope of the aesthetic, expression, representation, interpretation, appreciation, aesthetic value and the value of art, creativity, art and ethics. *Credit units: 3 ECTS Credit Units: 6. Spr (S. Berges)*

PHIL 403 Senior Thesis I
The aim of PHIL 403 and PHIL 404 is the gradual development of each student's ability to carry out independent research. In PHIL 403, the student starts to work on a thesis addressing a chosen philosophical topic under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

PHIL 404 Senior Thesis II
The aim of PHIL 403 and PHIL 404 is the gradual development of each student's ability to carry out independent research. In PHIL 404, the student writes and defends in front of a jury a thesis addressing the chosen philosophical topic. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHIL 403. Aut (Staff) Spr (Staff)*

PHIL 413 Foundations of Cognitive Science
We start from two major paradigms in contemporary cognitive science – the wide and the narrow paradigms. The narrow paradigm, which has been the more popular, is concerned with how information is encoded and computed, particularly in human minds. The main rival theories within the narrow paradigm are the symbol-system view and connectionism. The wide paradigm takes minds to be more than information processors, to come in a variety of kinds, and to operate relative to a variety of parameters – teleological, regulatory, environmental, and social. According to the wide paradigm even information processing has to be reexamined in the light of such parameters. *Credit units: 3 ECTS Credit Units: 6.*

PHIL 415 Moral Psychology
This course combines the theoretical resources of philosophical ethics and the empirical resources of cognitive and behavioral sciences. Empirical evidence from the human sciences will be used to examine core questions in ethical theory. Those questions include: Are our moral judgments determined by sentiment or reason? Are our attitudes and actions determined by situation or character? Is morality a product of evolution? Does human cooperation require incentives? Is moral disagreement unavoidable? Is free will an illusion? The course will refer to classic contributions to the subject by Plato, Aristotle, Descartes, Hume, and Kant. However, the main focus of the course will be recent research in the area by, amongst others, John Doris, Gilbert Harman, Shaun Nichols, Jesse Prinz, and Stephen Stich. The course does not presuppose an extensive background in philosophy or psychology. *Credit units: 3 ECTS Credit Units: 6.*

PHIL 416 From the Kitchen to the Streets: An Introduction to Feminism
In this course we will critically examine key topics in feminism, including abortion, sexual harassment, pornography, and the politics of work and family. We will also investigate the impact of feminism on language, science, morality, and the way we interact with other cultures. Philosophers have fundamentally contributed to our understanding of what it means to be a woman. So a part of the course will be devoted to studying the place of women in the history of ideas. Students will be encouraged to develop their own arguments with respect to real life issues. *Credit units: 3 ECTS Credit Units: 6.*

PHIL 418 Philosophy of Cognitive Science
Focusing on a selection of key texts, core topics in contemporary philosophy of cognitive science, such as: memory, theory of mind, modularity, innateness and empiricism, neuroethics, animal cognition, consciousness. *Credit units: 3 ECTS Credit Units: 6. Spr (N. Keven)*

PHIL 501 Research Preparation in Philosophy I
This course is based around the close reading of classic texts in analytic philosophy with an emphasis on epistemology, metaphysics, and logic. The course work will develop the ability to identify and assess informal and formal arguments and to write and present in a lucid and persuasive manner. Particular emphasis will be placed on research methodology of theoretical philosophy, such as assessing validity and logical consequence, inference to the best explanation, theories of reference and meaning, and explanation. *Credit units: 3 ECTS Credit Units: 8. Aut (W. G. Wringe)*

PHIL 502 Research Preparation in Philosophy II
Close reading of classic texts in analytic philosophy with an emphasis on ethics, political philosophy, and aesthetics. Ability to identify and assess informal and formal arguments, make key distinctions, and write and present in a lucid and persuasive manner. Research methodology of practical philosophy, such as identifying and distinguishing normative from non-normative explanations, how to apply theoretical work in ethics to actual ethical situations, and the functional role of evaluative judgment. *Credit units: 3 ECTS Credit Units: 8. Spr (S. D. Wigley)*

PHIL 504 Philosophy of Cognitive Science
Focusing on a selection of key texts, core topics in contemporary philosophy of cognitive science, such as: memory, theory of mind, modularity, innateness and empiricism, neuroethics, animal cognition, consciousness. *Credit units: 3 ECTS Credit Units: 6. Spr (N. Keven)*

PHIL 521 History of Political and Educational Philosophy
The course introduces students to philosophical thinking about the relation between human nature, society and education. It focuses on the study of key texts in the history of philosophy and educational thought including Aristophanes, Plato, Descartes, Voltaire, Mill and Russell. There is strong emphasis on the development of students critical reasoning skills. Students are encouraged to think about the implications of the views discussed for their own pedagogical practice. *Credit units: 3 ECTS Credit Units: 7. Aut (S. D. Wigley)*

PHIL 531 Metaphysics
Focusing on a selection of key texts, this course examines core topics in contemporary metaphysics, such as: truth, existence, universals and particulars, causality, modality, perception, knowledge, the a priori, identity, anomalous monism, supervenience, vagueness, and time. *Credit units: 3 ECTS Credit Units: 6. Aut (Y. S. Berkovski)*

PHIL 532 Aesthetics
Key debates in the philosophy of art, such as the definition of art, the ontology of artworks, the nature and scope of the aesthetic, expression, representation, interpretation, appreciation, aesthetic value and the value of art, creativity, art and ethics. *Credit units: 3 ECTS Credit Units: 6. Spr (S. Berges)*

PHIL 591 Thesis Seminar
Presenting material related to thesis. Attending presentations of other students. *Credit units: None ECTS Credit Units: 4. Spr (Staff)*

PHIL 599 M.A.Dissertation
Preparation of M.A. Dissertation. *Credit units: None ECTS Credit Units: 56. Spr (Staff)*

DEPARTMENT OF TRANSLATION AND INTERPRETATION

T. İnal (Chair), A. Bayrakçeken Akın, C. Cangır, Ş. Dalbudak, A. Demir, Y. Fakıoğlu Gökduman, B. Gülen, A. Noyanalpan, A. Ş. Okyayuz, G. Özkök, V. C. E. Paternotte, N. Siami, Y. Tanbi, B. Yakıcı.

Part-time: A. Akıncı Candoğan, E. Aksoy, A. A. Alanat Kılıç, Y. Bener, K. Bensan, M. Çelik, R. Duran, C. Ekiz, E. Kanık, L. S. A. Mercerolle Herculin, D. Önay, A. H. Sunel.

UNDERGRADUATE PROGRAM

The degree program in Translation and Interpretation trains translators and interpreters in Turkish, English and French. The curriculum aims to develop the special skills needed for translating and interpreting and to achieve mastery of the contemporary spoken and written languages. In addition, a wide range of elective courses provides a broad cultural background required by professional translators.

Language studies in English and French include: oral and written comprehension, oral and written translation, oral proficiency, essays, precis-writing and note-taking in addition to translation workshops. Elective courses deal with fields such as national government and administration, politics, economics, law, culture, current events, modern literature, European organizations and computer literacy. The third year includes a summer program which forms an integral part of the curriculum. For this program, after a period of one month spent in a firm/agency of the public or private sector, students submit a summer practice report to be presented orally both in English and French. In the fourth year, students may choose between two specialized tracks of study: Written translation or Interpretation. Candidates for the Interpretation track must pass a written and oral examination administrated by the school exam committee. Students in both tracks will complete research projects.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
TRIN 101	Comparative Grammar (English-Turkish)	3 / 6
TRIN 103	Comparative Grammar (French-Turkish)	3 / 6
TRIN 133	Texts and Composition in French I	3 / 5
TRIN 161	Introduction to Translation	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
TRIN 102	Applied Linguistics	3 / 6
TRIN 134	Texts and Composition in French II	3 / 5
TRIN 166	English-Turkish-French Translation	4 / 6
TRIN 172	Computer Literacy	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
TRIN 205	English-American and French Culture I	3 / 6
TRIN 265	Translation of Economic Texts (English-Turkish-French)	4 / 6
TRIN 267	Sight Translation I	3 / 6
TRIN 271	Business Communication	3 / 5
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
TRIN 206	English-American and French Culture II	3 / 6

TRIN 236	Group Communication and Discussion	3 / 6
TRIN 266	Translation of Political and Legal Texts (English-Turkish-French)	4 / 6
TRIN 268	Sight Translation II	3 / 6
	Restricted Elective	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
TRIN 335	Note-Taking and Consecutive Interpretation	3 / 6
TRIN 337	Precis Writing in English-French	3 / 6
TRIN 361	Technical Translation (English-Turkish)	3 / 6
TRIN 363	Technical Translation (French-Turkish)	3 / 6
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
SFL 392	Common European Framework of Reference Level B2	- / 1
TRIN 330	Criticism and French Literature	3 / 6
TRIN 332	Selected Topics from English Literature	3 / 6
TRIN 364	Literary Translation (English-Turkish)	3 / 6
TRIN 366	Literary Translation (French-Turkish)	3 / 6
TRIN 390	Summer Practice	- / 6
	Restricted Elective	3 / 6

FOURTH YEAR (Interpretation Track)

Autumn Semester		Credits / ECTS Credits
SFL 431	French in Corporate Communication	3 / 6
TRIN 461	English-French Translation Workshop I	3 / 6
TRIN 473	Turkish Diction	1 / 2
TRIN 481	Consecutive and Simultaneous Interpretation Techniques	6 / 10
TRIN 487	Interpreting for Public Services	3 / 6

Spring Semester		Credits / ECTS Credits
TRIN 464	Professional Communication for Interpreters	3 / 6
TRIN 484	Simultaneous Interpretation II: Fieldwork+Projectwork	6 / 12
	Non Technical Electives (2)	6 / 12

FOURTH YEAR (Written Translation Track)

Autumn Semester		Credits / ECTS Credits
SFL 431	French in Corporate Communication	3 / 6
TRIN 461	English-French Translation Workshop I	3 / 6
TRIN 463	Translation Criticism	3 / 6
TRIN 473	Turkish Diction	1 / 2
TRIN 485	Translation Workshop for EU Texts and Documents I	6 / 10

Spring Semester		Credits / ECTS Credits
TRIN 462	English-French Translation Workshop II	3 / 6
TRIN 486	Translation Workshop for EU Texts and Documents II	6 / 12
	Non Technical Electives (2)	6 / 12

RESTRICTED ELECTIVES

ACC 374	Information Systems Security and Information Distortion (in French)	3 / 6
ACC 473	Management Information Systems (in French)	3 / 6
BF 161	Economics I	3 / 6
TRIN 207	Language of Journalism	3 / 6
TRIN 303	Technology for Translators	3 / 6
TRIN 334	Media Studies	3 / 6
TRIN 336	Introduction to Simultaneous Interpretation	3 / 6
TRIN 339	Introduction to Interpersonal Communication (in French)	3 / 6
TRIN 340	Audiovisual Media Translation I	3 / 6
TRIN 371	Computer Literacy II	3 / 6

At least four courses should be taken from the elective courses list above.

GRADUATE PROGRAM

Master of Arts in Conference Interpreting

The Masters in Conference Interpreting Program is composed of two academic semesters and a summer school program. The objective of the degree program in Conference Interpreting is to train conference interpreters in Turkish/English/French. The language combinations offered in the program are A-CC, A-BC, A-BB or A-A.

The curriculum aims to develop the special skills needed for interpreting and to achieve mastery of the contemporary interpreting techniques. In addition, professional interpreters require a wide range of applied courses and a broad background in contemporary practices and theories. Professional interpreting studies in Turkish, English and French include: mastery in sight translation, consecutive interpreting, simultaneous interpreting, media interpreting. Theoretical and lecture courses deal with fields such as European/international organizations, technologies for interpreters, computer literacy and contemporary interpreting theories. Students who are trained by professional conference interpreters have to complete a single final examination given at the end of the Interpreting Seminar course in the summer school period. Students are expected to display their interpreting skills to a jury composed of professional interpreters from Turkey and professional interpreters from abroad.

CURRICULUM

Courses		Credits / ECTS Credits
CINT 501	Theory of Interpreting	2 / 6
CINT 503	Introduction to the Practice of Interpreting	4 / 7
CINT 506	EU and International Institutions	4 / 6
CINT 509	Advanced Consecutive Interpretation I	6 / 8
CINT 510	Advanced Consecutive Interpretation II	6 / 8
CINT 513	Advanced Simultaneous Interpreting I	6 / 8
CINT 514	Advanced Simultaneous Interpreting II	6 / 8
CINT 516	Conference Interpreting	6 / 8
CINT 518	Cross Cultural Negotiations	2 / 6
CINT 520	Technology and Research for Interpreting	2 / 6
CINT 590	Interpreting Seminar	- / 45

COURSE DESCRIPTIONS

TRIN 101 Comparative Grammar (English-Turkish)
Comparative study of the principal grammatical structures of English and Turkish, including lexical items. Presentation of basic concepts necessary for lexical studies: semantics, etymology, variants and formation. *Credit units: 3 ECTS Credit Units: 6. Aut (Ş. Dalbudak)*

TRIN 102 Applied Linguistics
Introduction to applied linguistics with special emphasis on the morphological, syntax and semantics of the French and Turkish languages. Role of linguistics in translation and in rhetoric analysis. *Credit units: 3 ECTS Credit Units: 6. Spr (A. H. Sunel)*

TRIN 103 Comparative Grammar (French-Turkish)
Comparative study of the principal grammatical structures of French and Turkish, including lexical items. Presentation of basic concepts necessary for lexical study: semantics, etymology, variants and formation. *Credit units: 3 ECTS Credit Units: 6. Aut (A. H. Sunel)*

TRIN 133 Texts and Composition in French I
This course uses texts of a general nature as a basis for developing the students' oral and written skills in French. Emphasis is on style, language registers, vocabulary building and composition. Oral work includes small group discussions and debates on current topics in addition to public speaking. *Credit units: 3 ECTS Credit Units: 5. Aut (L. S. A. Mercerolle Herculin)*

TRIN 134 Texts and Composition in French II
This course uses texts of a general nature as a basis for developing the students' oral and written skills in French. Emphasis is on style, language registers, vocabulary building and composition. Oral work includes small group discussions and debates on current topics in addition to public speaking. *Credit units: 3 ECTS Credit Units: 5. Spr (L. S. A. Mercerolle Herculin)*

TRIN 161 Introduction to Translation
This course consists of an introduction to the theory and methods of translation. It includes a study of the nature, function and features of language, a survey of the development of the English, French and Turkish languages, and a description of translation as a profession. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Aksoy, A. Bayrakçeken Akın)*

TRIN 166 English-Turkish-French Translation
This course consists of oral and written translation from English into Turkish and from French into Turkish of topics drawn from a variety of sources. The course includes comparative stylistics of English / Turkish and French / Turkish, including a study of language registers. It also includes the use of recorded broadcasts and radio reports as a spoken source for translation purposes. *Credit units: 4 ECTS Credit Units: 6. Spr (E. Aksoy, A. Bayrakçeken Akın)*

TRIN 172 Computer Literacy
Basic Computer Literacy. Efficient use of a computer for translation students, using word processing, compression, web page building, presentation, picture, spreadsheet and database software. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Maloney)*

TRIN 205 English-American and French Culture I
The study of contemporary American and French societies through a selection of texts and audiovisual materials. Emphasis on the cultural, social and legal aspects of American and French civilizations. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Maloney)*

TRIN 206 English-American and French Culture II
The study of English and French speaking societies through oral discussions and presentations with emphasis on the political and economic aspects of the culture. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Gülen, E. Maloney, A. Noyanalpan)*

TRIN 236 Group Communication and Discussion
This course is designed to provide an understanding of group dynamics and aims to improve student communication in English and French. Emphasis will be given to verbal and non verbal communication, active listening and responding techniques, problem solving and decision making. *Credit units: 3 ECTS Credit Units: 6. Spr (Ş. Dalbudak, V. C. E. Paternotte)*

TRIN 265 Translation of Economic Texts (English-Turkish-French)
This course consists of written translation from English into Turkish and French into Turkish on topics related to economics and business drawn from a variety of sources. The course includes terminological research and emphasizes style and language registers. *Credit units: 4 ECTS Credit Units: 6. Aut (Ş. Dalbudak, B. Yakıcı)*

TRIN 266 Translation of Political and Legal Texts (English-Turkish-French)
This course consists of written translation from English into Turkish and French into Turkish on topics related to politics and law drawn from a variety of sources. The course includes terminological research and emphasizes style and language registers. *Credit units: 4 ECTS Credit Units: 6. Spr (Ş. Dalbudak, B. Yakıcı)*

TRIN 267 Sight Translation I
This course consists of oral translation from English into Turkish and French into Turkish on texts related to economics and business. Sight translation is also used as a vehicle for voice training and enhancement of students' general knowledge. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Bayrakçeken Akın, C. Cangır, Ş. Dalbudak, A. Ş. Okyayuz, B. Yakıcı)*

TRIN 268 Sight Translation II
This course consists of oral translation from English into Turkish and French into Turkish of texts related to politics and law. Sight translation is also used as a vehicle for voice training and enhancement of students general knowledge. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Bayrakçeken Akın, C. Cangır, Ş. Dalbudak, A. Ş. Okyayuz, B. Yakıcı)*

TRIN 271 Business Communication
Introduction to the theory of communication. Written and oral communication in a business environment. Emphasis is on writing business letters, business reports, participating in debates and negotiations and giving oral presentations. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Bayrakçeken Akın, B. Gülen)*

TRIN 303 Technology for Translators
This course aims to acquaint the students with technologies and electronic tools used by translators in their professions. Special attention will be devoted to computer assisted translation systems, use of online material and resources, translation project management and terminology compilation techniques. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Ş. Okyayuz)*

TRIN 330 Criticism and French Literature
Study of a French literary work using an interdisciplinary approach. Particular emphasis will be placed on a plural reading of a novel from different aspects (historical, sociological, structural, economic, political). In addition the

essential elements of the novel such as time, space, narrator, characters will be analysed. *Credit units: 3 ECTS Credit Units: 6. Spr (T. İnal)*

TRIN 332 Selected Topics from English Literature
Research, discussion and reports on problems in English Literature. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Bayrakçeken Akın)*

TRIN 334 Media Studies
This course provides an introduction to Media Studies. It covers all the key topics encountered in Media Studies, including images and languages, narratives, genres, representations, advertising, marketing, realisms, modernism and postmodernism, technologies, industries, institutions, independents and alternatives, and producing. The course also includes in-depth case studies and follow-up activities. Throughout the course, examples are provided from a rich range of media forms, including advertising, films, television, radio, newspapers, magazines and photography. *Credit units: 3 ECTS Credit Units: 6. Spr (N. Siami)*

TRIN 335 Note-Taking and Consecutive Interpretation
This course aims at combining oral comprehension with the ability to reproduce speeches and to note them down while a speaker delivers a speech. Note-taking procedures and bilateral interpretation techniques will also be stressed. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Ş. Okyayuz, Y. Tanbi)*

TRIN 336 Introduction to Simultaneous Interpretation
This course emphasizes the techniques and practice of simultaneous interpretation. It also includes the techniques of liaison interpretation. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Ş. Okyayuz, Y. Tanbi)*

TRIN 337 Precis Writing in English-French
This course consists of an introduction to the technique of precis-writing based on texts of a specialized nature and on recorded speeches. It also includes note-taking, editing and minute-writing. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Gülen, L. S. A. Mercerolle Herculin)*

TRIN 339 Introduction to Interpersonal Communication (in French)
This course offers basic knowledge of interpersonal communication principles and their practical application in everyday interpersonal settings. Emphasis is on improving interpersonal skills and helping students increase their communication competence through readings, lectures, in-class activities and out of class assignments. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Noyanalpan)*

TRIN 361 Technical Translation (English-Turkish)
This course consists of written and oral translation from English into Turkish of scientific and technical material drawn from a variety of sources, including medical and pharmaceutical. The course includes documentary and terminological research and emphasizes style and language registers. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Bayrakçeken Akın)*

TRIN 363 Technical Translation (French-Turkish)
This course consists of written and oral translation from French into Turkish of scientific and technical material drawn from a variety of sources, including medical and pharmaceutical. The course includes documentary and terminological research and emphasizes style and language registers. *Credit units: 3 ECTS Credit Units: 6. Aut (Y. Tanbi)*

TRIN 364 Literary Translation (English-Turkish)
This course consists of written and oral translation from English into Turkish and includes documentary and terminological research with emphasis on style and language registers. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Bayrakçeken Akın)*

TRIN 366 Literary Translation (French-Turkish)
This course consists of written and oral translation from French into Turkish and includes documentary and terminological research with emphasis on style and language registers. *Credit units: 3 ECTS Credit Units: 6. Spr (Y. Tanbi)*

TRIN 371 Computer Literacy II
Web Page Design. In the first half of the course, students learn how to: 1) write HTML and CSS code; 2) edit pre-written java script; and 3) edit photos. In the second half of the course, students build or change Bilkent department web pages, with the course instructor as technical supervisor and another Bilkent staff person as design supervisor. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Maloney)*

TRIN 390 Summer Practice
One month training period (20 workdays). The main objective of this period is to observe and attain experience in different work places so as to familiarize with the translation environment. Organizations may be follows: Translation Agencies, Estate Agencies, Media, Publishing Houses, Ministry of the EU, Ministry of the Foreign Affairs, Hotels, etc. *Credit units: None ECTS Credit Units: 6. Spr (Staff)*

TRIN 461 English-French Translation Workshop I
This workshop progressively leads the student to develop French-English, English-French translation skills through intensive work on translation assignments and individual and group projects involving comparative analysis of a variety of texts. *Credit units: 3 ECTS Credit Units: 6. Aut (V. C. E. Paternotte)*

TRIN 462 English-French Translation Workshop II
This workshop further develops the students' English-French, French-English translation skills through intensive work on translation assignments and individual and group projects involving the translation of a variety of texts. *Credit units: 3 ECTS Credit Units: 6. Spr (V. C. E. Paternotte)*

TRIN 463 Translation Criticism
Analysis of translated text and discussion of parallel points. Criticism of translations. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Aksoy, A. Ş. Okyayuz)*

TRIN 464 Professional Communication for Interpreters
The course aims to train students in the communication skills techniques required by interpreters in the professional world. Emphasis will be given to conducting meetings, negotiating contracts and presenting projects to English and French speaking audiences. *Credit units: 3 ECTS Credit Units: 6. Spr (T. İnal, A. Ş. Okyayuz)*

TRIN 473 Turkish Diction
This course will particularly stress the need to speak Turkish efficiently and correctly with a special emphasis on the right pronunciation of words. *Credit units: 1 ECTS Credit Units: 2. Aut (M. Çelik) Spr (M. Çelik)*

TRIN 481 Consecutive and Simultaneous Interpretation Techniques
This course provides further practice in the techniques of consecutive interpretation with emphasis on bilingual practical applications. *Credit units: 6 ECTS Credit Units: 10. Aut (A. A. Alanat Kılıç, A. Ş. Okyayuz)*

TRIN 484 Simultaneous Interpretation II: Fieldwork+Projectwork
Implementing simultaneous interpretation. Under the supervision of a professional interpreter, the student will work in actual conference situations. Students are required to work on a project (under the supervision of an instructor) based on videotape recordings of conferences/seminars. Emphasis will be given to the preparation of dialogue lists/scripts in English/Turkish and French/Turkish and vice-versa. *Credit units: 6 ECTS Credit Units: 12. Spr (A. Akıncı Candoğan, A. A. Alanat Kılıç)*

TRIN 485 Translation Workshop for EU Texts and Documents I
This course consists of translation from English into Turkish, French into Turkish on topics of current interest and related to the European Union and its institutions. *Credit units: 6 ECTS Credit Units: 10. Aut (C. Ekiz, T. İnal)*

TRIN 486 Translation Workshop for EU Texts and Documents II
This course provides training in translation from English into Turkish and French into Turkish of legal and official documents as well as texts related with current European issues. *Credit units: 6 ECTS Credit Units: 12. Spr (C. Ekiz, T. İnal)*

TRIN 487 Interpreting for Public Services
This course provides an introduction to the context of public service interpreting and stresses interpreting for the courts, the police and immigration services. Students will learn about liaison and whisper interpretation and reinforce consecutive interpretation skills all of which will be practiced through simulations of relevant interpreting situations. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Akıncı Candoğan, T. İnal)*

CINT 501 Theory of Interpreting
Students will be acquainted with the theoretical aspects of interpretation and will be familiarizing themselves with the research findings that have a bearing on interpretation like cognitive, psycholinguistic, neurolinguistic, sociolinguistic paradigms and communication and discourse studies. *Credit units: 2 ECTS Credit Units: 6. Aut (A. Ş. Okyayuz, V. C. E. Paternotte)*

CINT 503 Introduction to the Practice of Interpreting
This course aims to familiarize students with some basic communication skills, conference preparation techniques, professional ethics, conference procedures, working practices and conditions. They will learn about how they may attain the necessary skills to become effective communicators, how to keep up to date with world affairs in the various areas in which they work, how to improve their intuition and flexibility and develop their diplomatic skills. *Credit units: 4 ECTS Credit Units: 7. Aut (D. Önay, V. C. E. Paternotte)*

CINT 506 EU and International Institutions
Students are familiarized with basic legal and economic notions and especially focus on understanding how EU institutions and international organizations operate to develop a know-how of institutional processes and procedures. They become familiar with specific terminology, registers, styles and discourses used in communication in the relevant settings. *Credit units: 4 ECTS Credit Units: 6. Spr (O. Güvenen)*

CINT 509 Advanced Consecutive Interpretation I
In this first course on consecutive interpretation preliminary exercises in content analysis, memory exercises, summarization, sight translation and note-taking techniques will be studied. Students are prepared to be able to deliver fluent and effective consecutive interpretations of speeches into the mother tongue. Students are trained with authentic conference materials in which they will confront a diversity of subject areas, styles and registers. The length, information density and degree of technicality and specifity of the speeches will increase throughout the course. *Credit units: 6 ECTS Credit Units: 8. Aut (Y. Bener, E. Kanık)*

CINT 510 Advanced Consecutive Interpretation II
Through a variety of advanced level exercises and speeches in which the information density, degree of technicality and specificity increases as the course progresses, students are trained to deliver fluent and effective consecutive interpretations into the target language, accurately reproducing the content of the original, using appropriate terminology and register. *Credit units: 6 ECTS Credit Units: 8. Aut (R. Duran, D. Önay) Spr (K. Bensan, R. Duran)*

CINT 513 Advanced Simultaneous Interpreting I
Students will be building on skills such as effective communication, content analysis, fluency of speech, and memory exercises. Students will be acquainted with booth techniques and team interaction while acquiring the professional skill to interpret into the mother tongue from both active and passive foreign languages in actual conference settings and/or simulations in the booths. This is undertaken in order to enable them to reproduce the content of the original, using the appropriate terminology and register. The length, information density and degree of technicality and specifity of the speeches will increase throughout the course. Once they have mastered simultaneous interpreting skills, students will also be taught to interpret with the texts in front of them. *Credit units: 6 ECTS Credit Units: 8. Aut (K. Bensan, R. Duran)*

CINT 514 Advanced Simultaneous Interpreting II
Students will be trained to provide fluent and effective simultaneous interpretation of speeches into the target language undertaking advanced practice of simultaneous interpreting in the working languages in booths. Students will be attending conferences on diverse topics and they will analyze and criticize actual interpreting performance vis-a-vis actual conference situations. Through laboratory simulations and other opportunities they will be acquainted with the interpretation of diverse topics while undertaking research in relevant settings and terminology. *Credit units: 6 ECTS Credit Units: 8. Spr (Y. Bener, D. Önay)*

CINT 516 Conference Interpreting
Students will be trained in the main types of work for conference interpreters. They will be acquainted with the types of interpreting necessary for committees and conferences, discussions between Heads of State, Prime Ministers, Ministers, business meetings, trade negotiations, court cases, working lunches, and field trips, working on the ability to rapidly shift between mother tongue and the active language, and from the passive language to the mother tongue. *Credit units: 6 ECTS Credit Units: 8. Spr (Y. Bener, E. Kanık)*

CINT 518 Cross Cultural Negotiations
Students will be exposed to cross-cultural negotiations in various domains/situations. They will be developing argumentation skills and the ability to deal with conflict issues through the use of different techniques. They will be asked to perform as speakers in mock debates, seminars, information sessions in their active languages; and they will have the opportunity to develop their attentive listening, comprehension and short-long term memory skills, especially through information dense speeches dealing with conflict issues in their passive languages. Students will work towards developing a sensitivity for such issues in performing as an intermediary/interpreter in differing cultures. *Credit units: 2 ECTS Credit Units: 6. Spr (A. Ş. Okyayuz, V. C. E. Paternotte)*

CINT 520 Technology and Research for Interpreting
This course aims to allow the student to familiarize with the technologies used in the interpretation milieu. They will be asked to research new virtual meeting technologies, use of multilingual communication in the media, multilingual chats, on-line communication on the Internet and new practices that may have a relevance for their fields. Students will be acquainted with up-to date research techniques such as the use of terminology management systems in line with recent developments. They will also be made aware of interpreting practices for TV and radio interviews, and videoconferences. *Credit units: 2 ECTS Credit Units: 6.*

CINT 590 Interpreting Seminar
This course aims to allow students to practice the skills they attained throughout the two semesters in actual conferences and simulated conferences with the help of an advisor. The course has a single final examination that will reflect practical, real-life conference situations and will be graded as either satisfactory or unsatisfactory. A team of professional interpreters, native speakers of the students A, B, C languages and other professionals deemed necessary will be able to follow the final examination and consult with the advisor about the status (satisfactory/unsatisfactory) of the student. *Credit units: None ECTS Credit Units: 45.*

FRP 101 Communicative French Skills I
Credit units: None ECTS Credit Units: 8. Aut (A. Demir, N. Siami) Spr (A. Noyanalpan)

FRP 102 Listening Comprehension and Public Speaking I
Credit units: None ECTS Credit Units: 6. Aut (A. Noyanalpan, N. Siami) Spr (A. Noyanalpan)

FRP 103 Analytical Reading and Writing Strategies I
Credit units: None ECTS Credit Units: 8. Aut (Y. Tanbi, B. Yakıcı) Spr (N. Siami)

FRP 104 Linguistics, Grammar and CAL (Computer Assisted Language) I
Credit units: None ECTS Credit Units: 8. Aut (G. Özkök) Spr (N. Siami)

FRP 201 Communicative French Skills II
Credit units: None ECTS Credit Units: 8. Aut (Y. Fakıoğlu Gökduman) Spr (A. Demir, Y. Fakıoğlu Gökduman)

FRP 202 Listening Comprehension and Public Speaking II
Credit units: None ECTS Credit Units: 6. Aut (Y. Fakıoğlu Gökduman) Spr (Y. Tanbi, B. Yakıcı)

FRP 203 Analytical Reading and Writing Strategies II
Credit units: None ECTS Credit Units: 8. Aut (C. Cangır) Spr (C. Cangır, Y. Fakıoğlu Gökduman)

FRP 204 Linguistics, Grammar and CAL (Computer Assisted Language) II
Credit units: None ECTS Credit Units: 8. Aut (Y. Fakıoğlu Gökduman) Spr (G. Özkök)

DEPARTMENT OF TURKISH LITERATURE

M. Kalpaklı (Acting Chair), Z. Seviner.

Part-time: K. Emiroğlu.

The Department of Turkish Literature, which offers graduate degrees, has admitted its first students to the M.A. program in the 1998-1999 academic year. The Ph.D. program for the graduates of the M.A. program and other qualified candidates started in 2001.

The graduate programs are designed to encompass all periods and genres of oral and written Turkish literature from its beginnings until the present day. Present fields of concentration are: Ottoman Literature, 19th Century Literature and 20th Century Literature.

Unlike many of the traditional departments in this field, the Department of Turkish Literature encourages free and creative thinking, emphasizing research, analysis, interpretation, and criticism. Aiming at enhancing the standards of Turkish literary studies and universalizing the field, the Department underscores proficiency in several languages and encourages theoretical, interdisciplinary, and comparative approaches.

The language of instruction for courses in the Department is Turkish, except in instances where a non-Turkish visiting professor might prefer to teach in English.

Master of Arts in Turkish Literature

The duration of the M.A. program is three years, including a prep year, during which students take courses designed to introduce them to various aspects of literature and to strengthen their proficiency in Ottoman Turkish and foreign languages.

Admission: For entering the M.A. program applicants must be graduates of four-year undergraduate programs, preferably in literature. Applications will be evaluated on the basis of the applicant's scholastic record, ALES results, level of proficiency in Turkish and English, a composition designed to assess his/her ability to critically analyze literary texts, and an interview.

Degree Requirements: Candidates for the M.A. degree are required to complete at least 36 units of credit beyond the preparatory year and to prove their competence in Turkish, Ottoman, and English. Some students may be exempted from English and/or Ottoman depending on their proficiency levels. The candidates may be required to learn additional languages according to their fields of concentration: Persian and/or Arabic for Ottoman Literature; French and/or German for 19th Century Literature and 20th Century Literature. Candidates should prepare and defend a Master's thesis. They should maintain a minimum GPA of 3.00 throughout their studies. Language courses and thesis writing are without credit.

CURRICULUM

Courses		Credits / ECTS Credits
EDEB 503	Ottoman Divan Literature	3 / 5
EDEB 504	Turkish Folk Literature	3 / 5
EDEB 505	Turkish Literature 1839-1922 I	3 / 5
EDEB 507	Turkish Poetry	3 / 5
EDEB 510	Turkish Literature 1839-1922 II	3 / 5
EDEB 514	Seminar on Divan Literature	3 / 5
EDEB 524	The Turkish Novel	3 / 5
EDEB 526	Divan Literature Through Texts	3 / 5
EDEB 593	Seminar	- / -
EDEB 599	Master's Thesis	- / 56
EDEB 607	Modernism in Turkish Literature	3 / 5
EDEB 608	Critical Approaches to Turkish Literature	3 / 5
GE 500	Research Methods and Academic Publication Ethics	- / 1

GE 590	Academic Practices	- / 12
	Restricted Electives (2)	6 / 12

Doctor of Philosophy in Turkish Literature

The doctoral program in Turkish literature is initiated in 2001. Applicants to the program are required to hold an M.A. degree in Turkish Literature or related fields from Bilkent or other universities. To be admitted to the program, applicants from other universities may be required to take written and/or oral exams. The duration of the doctoral program is normally 3.5 years.

Doctoral students must complete course work of at least 24 credit hours with a minimum GPA of 3.00 and fulfill all language requirements before they present their written dissertation proposals and take the comprehensive written and oral exams. The research proposal for the dissertation must be approved by the Department before the candidates may take the comprehensive exams. These exams are designed to evaluate the candidate's expertise in his/her area of concentration and research proposal for the dissertation. The candidate is eligible to take the orals after passing the written exam. Following the successful completion of these requirements, the candidates will conduct research and proceed with the writing of their dissertation, which should embody original research and make a substantial contribution to Turkish literary scholarship. Candidates must successfully defend their dissertation before a committee of the faculty.

Bilkent University will award the successful doctoral candidates the degree of "Doctor of Philosophy in Turkish Literature".

CURRICULUM

Courses		Credits / ECTS Credits
EDEB 606	Sufi Seminar	3 / 5
EDEB 620	Seminar on Evliya Celebi and the Seyahatname	3 / 5
EDEB 621	Seminar on the Mesnevi in Divan Literature	3 / 5
EDEB 699	Ph.D. Dissertation	- / 160
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
	Restricted Electives (5)	15 / 30

COURSE DESCRIPTIONS

PREP YEAR COURSES

EDEB 413 Theoretical History of Western Civilization
In this course, western civilization, from preliterate societies to modern times, will be examined theoretically. Political, economic, religious, technological and artistic transformations on various levels are to be dealt with from different theoretical points of view. Ancient Greek and Roman contributions with respect to philosophy and law are also on the agenda of this course. Historical backgrounds of Humanism, Renaissance, Scientific Revolution, Reformation, Enlightenment and Romanticism are, inter alia, part of the basic problematic to be discussed. Furthermore, numerous important questions will be raised, among them: 'Are primitive/civilized differences tenable?', 'On what basis can there be periodization of human history?', and 'How the human mind passes from myth to Logos?' *Credit units: 3 ECTS Credit Units: 5. Spr (K. Emiroğlu)*

EDEB 415 Sources of Literature: Nature and Culture
Historically conscious analysis and interpretation of fundamental terminologies in the fields of anthropology, sociology, law, economics, linguistics, folklore and history; comparative study of Ottoman and Turkish cultural traditions in terms of the chosen terminology; study of the transformation and continuity in the oral and written traditions within this framework. *Credit units: 3 ECTS Credit Units: 6. Aut (K. Emiroğlu)*

EDEB 419 The Turkish Short Story
The origins of the contemporary short story in Turkish literature may be found in Aziz Efendi's Muhayyelât, a late 18th-century work, which is considered a bridge between the story-telling tradition in the East and the modern short story. In this course, the development of the modern Turkish short story will be examined in historical context, especially with regard to its generic transformation, and in terms of comparisons of style and content among various works by modern authors. *Credit units: 3 ECTS Credit Units: 5. Spr (Z. Seviner)*

EDEB 424 Introduction to Divan Literature
Taking off from the question, "What kind of literature is Divan literature?" this course aims to introduce the aesthetic structure and understanding of divan literature, regarding both form and contents, and to see how they are different from those of today. Our primary topic is poetry: we examine Aruz metrics, the rules of rhyme, and verse forms; we also discuss figures of speech and subtleties of expression. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 434 Introduction to Divan Literature II
Ottoman literature endured for 600 years. Its classical epoch ended in the 16th century and its transformation began in the 17th century. This transformation and reorientation period lasted into the 18th century and ended with westernization in the 19th century. In this course we shall examine and discuss the lyric poetry, *mesnevis* and prose works. *Credit units: 3 ECTS Credit Units: 5.*

GRADUATE COURSES

EDEB 401 Introduction to Turkish Literature I
Designed to give the student an overview of Turkish Literature, the course will deal with earliest poems, the Orkhon Inscriptions, major early works (*Divan-i Lugati't-Türk, Kutadgu Bilig, Dede Korkut*, etc.),highlights of Seljuk Literature (especially Yunus Emre), and the most important works of Divan poetry and prose (from the 14th century to the mid-19th century). *Credit units: 3 ECTS Credit Units: 5. Aut (M. Kalpaklı)*

EDEB 402 Introduction to Turkish Literature II
This course will provide an overview of Turkish literature from the Tanzimat era to the present. Emphasis will be on the development of such literary genres as the novel, short story, drama, poetry, essay, and criticism in the modern era. The ethical and aesthetic arguments of major literary movements, key literary debates, and the social impact of literature will be discussed and evaluated. Readings will include major works in various genres. *Credit units: 3 ECTS Credit Units: 5. Spr (M. Kalpaklı)*

EDEB 403 Theories of Literature
This course will provide a wide-ranging theoretical background for the practice of literary criticism. A general survey of western literary history, literary movements, genres, and key terms, will be followed by the examination of modern literary/critical theories, including formalist, structuralist, post-structuralist, Marxist, feminist, and psychoanalytical approaches. Readings (in Turkish) will include selections from Aristotle, Barthes, Benjamin, Derrida, Eagleton, Escarpit, Freud, Genette, Jameson, Lukacs, Ong, and Todorov among others. Students will write reading reports, make a presentation, and write a term paper on a selected topic. *Credit units: 4 ECTS Credit Units: 5. Aut (Z. Seviner)*

EDEB 405 Written Expression
This course aims at enhancing the appreciation and control of written Turkish at a high level. It will equip the students with the fundamental skills of writing and editing. After a review of the basic elements of composition (thesis, organization, style, tone), the techniques of narration (summary, paraphrase, quotation), the rules of punctuation, citation, etc. numerous examples of printed works will be discussed in class. Regular writing and rewriting assignments will be given. Emphasis will be on non-fictional prose, including scholarly and critical writing. *Credit units: 3 ECTS Credit Units: 5. Aut (Z. Seviner)*

EDEB 411 Ottoman Turkish I
This course will introduce the students to the Ottoman script and teach them the fundamentals of Ottoman-Turkish grammar through readings and writing exercises. *Credit units: 4 ECTS Credit Units: 5. Aut (N. Tekgül)*

EDEB 412 Ottoman Turkish II
This course will enhance the students' comprehension of the Ottoman script and the fundamentals of Ottoman-Turkish grammar through readings and writing exercises. *Credit units: 3 ECTS Credit Units: 5. Spr (N. Tekgül)*

EDEB 414 Introduction to Folk Literature
This course will offer an historical survey of the major genres of Turkish folk literature including poetry, folktale, the epic, and folk humor. Students will be introduced to significant scholarly works in the field as well. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 416 Criticism
This course aims at furnishing the students with a critical understanding of the development of the theory and practice of literary criticism in Turkey since Ottoman times. Readings will include selections from the works of such writers as Ataç, Cemal Süreya, Fethi Naci, Gürbilek, Moran, Parla,Tanpınar, and Yavuz. Assignments will include regular reading reports, a class presentation, and a term paper. *Credit units: 4 ECTS Credit Units: 5. Spr (Z. Seviner)*

EDEB 502 Text and Image
Exploration of the connections and interactions between literature and the (audio-)visual image. Providing a historical approach from miniature paintings to interactive narratives, engagement with practices and approaches key to exploring the interrelation of different media. Emphasizing cross-disciplinary research skills, examination of various forms of art in which verbal and visual representations work in relation or collaboration. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 503 Ottoman Divan Literature
This course will cover the most important genres of Ottoman Divan literature including poetry (*gazel*, *kaside*, *mesnevi*) and prose (*tezkires*, *chronicles*, *risales*). It will prepare the students for a broader critical understanding of Ottoman literature. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 504 Turkish Folk Literature
This course will concentrate on diverse types of Turkish oral literature – folk poems and tales, epics and narratives, anecdotes and satirical pieces, riddles and lyrics from Anatolia. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 505 Turkish Literature 1839-1922 I
This course will examine the major developments in Turkish literature from the Tanzimat era to the founding of the Republic. Emphasis will be on the inception and transformation of various literary genres including the novel, the essay, poetry, drama and criticism. The contest between tradition and modernity, debates concerning literariness and the place of literature within society, and the social impact of the literature of the period will be among the key areas of investigation. Readings will consist of the major works of significant writers and poets, as well as secondary literature, including, A.H. Tanpınar's *XIX. Asır Türk Edebiyatı Tarihi*. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 507 Turkish Poetry
Following a brief overview of the process of change in Turkish poetry from Tazminat (reforms period) until the Republic, this course will survey and discuss movements, changing ideological and aesthetic approaches, the correlation between modern poetry and Republican enlightenment from 1923 until the present day. It will also make a critical analysis of modern poetry in conjunction with literary theories. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 508 Text and the City:Urban Space and Architecture in Turkish Literature
A survey of the relationship between the literary text and urban space in late Ottoman Empire and Turkish Republic. As two cultural products in process of change in this period, their parallel structural transformation, and details on urban spaces and architectural artifacts in the fictional texts of the time. Keeping these parallelisms in mind, new ways of reading space in these texts, thus establishing an interdisciplinary approach toward the study of Turkish literature and introducing new methods such as geocriticism and digital humanities. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 510 Turkish Literature 1839-1922 II
This course will examine the major developments in Turkish Literature from the Tanzimat era to the literature from the Tanzimat to the founding of the Republic. Emphasis will be on the inception and transformation of various literary genres including the novel, the essay, poetry, drama and criticism. The contest between tradition and modernity, debates concerning literariness and the place of literature within society, and the social impact of the literature of the period will be among the key areas of investigation. Readings will consist of the major works of significant writers and ports. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 511 Ottoman Turkish III
This course will enhance students' comprehension of Ottoman texts from all periods and genres. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 514 Seminar on Divan Literature
History of Ottoman literature from the 17th to the end of the 19th century. This course will cover the most important genres of Ottoman Divan literature including poetry (*gazel, kaside, mesnevi*) and prose (*tezkires, chronicles,risales*). It will prepare the students for a broader critical understanding of Ottoman Literature. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 524 The Turkish Novel
This course will examine the transformation of the social, psychological and aesthetic parameters of the Turkish novel from its inception in the latter part of the 19th century to its most recent examples. Areas of interest will include: the relationship of the early novels with traditional narratives; the questions concerning the social representativeness of novels; the formal changes in the tradition of novel writing, and critical responses to key novels. Readings will include major samples of such subtypes of the Turkish novel as the historical novel, philosophical novel, village novel, nature novel, and modernist novel as well as several critical books and essays. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 526 Divan Literature Through Texts
In this course several sample texts of Ottoman Divan literature, including those in the forms of *münazara, sakiname, şehrengiz, dibace, and tezkire* , will be read and discussed. Emphasis will be on comprehending the special vocabulary of these texts and the unique way of thinking they express. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 593 Seminar
This seminar gives an opportunity to Master students, in periodic meetings with lecturers and fellow students, to report on the developmant stages of their thesis work and to discuss specific as well as general problems, such as research methods, review of the literature, elaboration of topics, and organization of material. *Credit units: None ECTS Credit Units: None. Aut (Staff) Spr (Staff)*

EDEB 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Staff) Spr (Staff)

EDEB 602 Old Uygur Literature
The subject of this seminar is the Old Uygur Literature that developed in East Turkistan (Sinkiang) around 850-1400 C.E. Old Uygur is the second Turkic literary language, following that of Orhun-Yenisey Turkic. Since it was in continuous use for over 500 years, it became a classic literary language. Even after the Islamization of East Turkistan, Old Uygur continued to be taught farther east in Buddhist religious centers (such as Dunhuang) until the middle of the 17th century, and books continued to be produced in this language. Old Uygur Literature, which was introduced in outline in the Masters preparatory class entitled "Introduction to Old Turkic Literature," will be studied more comprehensively in this seminar (genres, works, Old Uygur literary terminology, known authors, translators, etc.) The majority of prose texts in this literature are Buddhist and Manichaean texts that were translated into Turkic from various languages. After a brief review of Old Turkic, we will read samples of both the prose texts, which are translations, and the poetic texts, which are original compositions. We will also discuss the influence of the Old Uygur literary language on the Islamic Turkic literary languages. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 605 East and West in Turkish Literature
Turkish literature through the lenses of areas such as Comparative Literature and Cultural Studies, thus discovering new vantage points for textual analysis, and at the same time, problematizing the existent methodological approaches. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 606 Sufi Seminar
In this seminar Islamic mysticism, orthodox as well as heterodox, will be discussed with special reference to Sufi poetry and its history. Especially the question that, in the absence of systematic philosophical tradition, can mysticism work *in loco parentis* as a systematic world-view will be dealt with. Other topics like the theoretical basis of Sufi symbolism will also be on the agenda. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 607 Modernism in Turkish Literature
This course will deal mainly with the repercussions of political and social aspects of Modernism qua Westernization in the Ottoman and Republican Turkish Literature. But, Modernism as a transformation of literature itself, especially in the field of poetry will also be critically investigated. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 608 Critical Approaches to Turkish Literature
This course designed to reevaluate modern Turkish (Republican) literature from a theoretical point of view. Theories such as Marxism and Psychoanalysis (Freudian and Lacanian), and philosophical currents (Phenomenology and Existentialism, among others) will be brought to bear upon related texts to produce new critical understanding. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 609 Oghuz Khan Narratives
In this seminar, the focus of study will be the tales and narratives concerning Oghuz Khan, the legendary ancestor of the Oghuz tribe. Currently, there are various extant texts written in Eastern Turkic, Anatolian Turkish, and Persian, all of which are quite different from one another. The oldest of these is believed to date back to the 13th century. Some of the texts many have been reworked and significantly altered in subsequent centuries, using older examples as a basis. Some of these texts were written in prose and some of them in verse. Some of them have been entirely preserved, while others are in a fragmentary state. In these narratives, the birth, life, and death of Oghuz Khan are narrated, together with the story of this defeating his enemies, conquering the world, and subsequently dividing his conquests up among his sons. In some, the narrative moves from legendary history through to historical centuries and continues with factual, historical events. These narratives contain a number of old epic motifs, folk etymologies, and similar elements. In the seminar, we will study the Turkish texts in the original language and the Persian texts in translation, and we will analyze the narratives from the literary point of view. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 611 Literature and Society I
Sociology of literature focusing on the influence of social changes on literary genres, poetry and novel in particular. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 619 World Fiction
This seminar will critically survey and discuss several major 20th century novels and many modern short stories translated into Turkish. It will examine the cultural contexts of the novels and short stories, the way they reflect their times and respective societies, their fictional techniques, aesthetic and ethical concerns, and influences (if any) on Turkish fiction. Relevant theories will also be analyzed. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 620 Seminar on Evliya Celebi and the Seyahatname
The *Seyahatname* ("Book of Travels") the first and finest example of a unique genre of Ottoman literature - is not merely a travel guide but is at the same time a work of literature. It contains rich narrative elements that are included in the conveying of information, the description of observations and experiences, and the reflection of value judgments. This seminar critically examines the ideas that have been proposed concerning when, where and how the *Seyahatname* was written; and evaluates the text editions and the important researches that have

been made until now. We read selected passages of the work and discuss its contents, structure, scope, and literary features. Using examples of true or false or exaggerated information contained in the *Seyahatname* we investigate preconceptions regarding the work and discuss its value today. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 621 Seminar on the Mesnevi in Divan Literature
The seminar provides a historical perspective on the Mesnevi genre from the thirteenth century onward, and examines how it ceded its place to the novel and short story as Turkish literature opened to the West in the nineteenth century. We take a topical approach, and discuss the origin of the Mesnevi genre and the way in which it assumed a Turkish (or Anatolian) dress. We also read selected mesnevis examining such features as structure, plot, authors' apologies, character, folk tale elements, societal value judgments, and local elements; compare these with the techniques and understanding of the Western novel. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 622 Seminar on Ahmet Hamdi Tanpinar
This course is designed to critically examine several writings in various genres by Ahmet Hamdi Tanpınar (1901-1962), who is considered one of the most important writers of the twentieth-century Turkish literature. In addition to some of his novels, short stories, and poems, his writings on literary history and criticism will be discussed during the course. Some emphasis will be placed on re-reading significant secondary literature on the author. Requirements of the course include two position papers, one presentation, and one term paper. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 626 The Dede Korkut Oguznames
How an ancient heroic epic of the Oğuz came to be written down in twelve episodes, with variations, in the Eastern Anatolia - Azerbaijan region, in the fifteenth century. Manuscripts of the work and history of scholarship. Dede Korkut (Korkut Ata) as legendary bard and soothsayer. Language, linguistic and philological problems. Style, subject matter, heroes. The place of the *Book of Dede Korkut* in Turkish literature. Anatolian folk tales that resemble the stories in the *Book of Dede Korkut* Samples of the *Oğuznames* will be studied and analyzed from various perspectives. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 628 Heroic Religious Epics
This course will basically deal with the topic of heroic Islamic epics, which were composed in Anatolia during XIV. and XV. centuries and later, or translated from Arabic and Persian in the same time period (Danişmendnâme, Saltuknâme, Battalnâme usw.). Works like Vilayetnâmes and Menâkibnâmes will also be studied and samples from various texts elucidated. *Credit units: 3 ECTS Credit Units: 5.*

EDEB 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Staff)

FACULTY OF LAW

Turgut Tan, Ph.D., Dean
Hüseyin Can Aksoy, Ph.D., Assoc. Dean
Şemsi Barış Özçelik, Ph.D., Assoc. Dean

ACADEMIC STAFF

Tekin Akıllıoğlu, Adjunct Professor
Ph.D., Administrative Law, University of Rennes, 1972. Administrative Law, Human Rights Law, Introduction to Law, ECHR Law.

Hüseyin Can Aksoy, Assistant Professor
Ph.D., Law, Martin-Luther-University Halle-Wittenberg, 2013. Civil Law, Basic Concepts of Law, Law of Obligations, Introduction to Contract Law.

Pınar Altınok Ormancı, Assistant Professor
Ph.D., Civil Law, Ankara University, 2011. Basic Concepts of Law, Selected Topics in Turkish Law, Law of Obligations (Special Part), Business Law, Civil Law II.

Süleyman Zühtü Aytaç, Visiting Professor
Ph.D., Law, Albert Ludwig Freiburg University, 1975. Commercial Law.

Fatma Aslı Bayata Canyaş, Assistant Professor
Ph.D., Private International Law, Ankara University, 2011. Business Law, Basic Concepts of Law, Recognition and Enforcement of Foreign Arbitral Awards, Private International Law, Citizenship and Foreigners Law, Refugee Law and International Protection.

Bahar Bayazıt, Research Fellow
LL.M., Law and Economics, Bilkent University, 2011.

Elvin Evrim Dalkılıç, Assistant Professor
Ph.D., Public Law, Gazi University, 2009. Administrative Law.

Mehmet Ali Erten, Visiting Professor
Ph.D., Law, Ankara University, 1976. Civil Law, Law of Obligations (Special Part). Law of Obligations.

Ece Göztepe Çelebi, Associate Professor
Ph.D., European Public Law, Münster Westfaelische Wilhelms University, 2001. Constitutional Law, Comparative Constitutional Law, Methodology of law and Research Methods, Constitutional Judiciary, Law, Film and Literature, Individual Application to the Constitutional Court (Merits and Procedure).

Aslı Elif Gürbüz Usluel, Assistant Professor
Ph.D., Commercial Law, Ankara University, 2008. Commercial Law, Corporate Governance, Moot Court.

Osman B. Gürzumar, Professor
Ph.D., Law, Bern University, 1991. Civil Law, Competition Law.

Elif Cemre Hazıroğlu, Research Fellow
LL.M., Law, Leiden University, 2011.

Ahmet Rüçhan Işık, Visiting Professor
Ph.D., Law, Ankara University, 1962. Labour Law, Social Law, Seminar on Selected Topics in Public Law.

Halil Baha Karabudak, Instructor
Economics, Middle East Technical University, 1985. Principles of Economics, Economics of Competition, Current Issues in Economics of Antitrust and Regulation, Introduction to Law and Economics of Competition and Regulatory Policies.

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Ph.D., Public Law, Ankara University, 2001. Criminal Law, Criminal Procedure, Criminal Law (Special Part).

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LL.M., Law, Tilburg University, 2011.

Cengiz Koçhisarlıoğlu, Visiting Professor
Ph.D., Civil Law, Lausanne University, 1982. Introduction to Law, Civil Law, Civil Law IV: Inheritance Law.

Erden Kuntalp, Adjunct Professor
Ph.D., Law, Ankara University, 1964. Law of Obligations, Doctrine of Innominate Contracts, Freedom of Contracts.

Mehmet Çağlar Manavgat, Visiting Associate Professor
Ph.D., Commercial Law, Ankara University, 1996. Law of Capital Markets, Commercial Law, Capital Markets and Market Abuse, Financial Institutions Law, Preservation of Assets in Corporations.

Mehmet Kamil Mutluer, Adjunct Professor
Ph.D., Tax Law, Eskişehir Economic and Commercial Sciences Academy, 1971. Tax Law, Public Finance, Budget Law. Fiscal Law.

Erdal Onar, Visiting Professor
Ph.D., Public Law, Ankara University, 1976. Constitutional Law, Turkish Constitutional History, Constitutional Judiciary, Parliamentary Law.

Arif Barış Özbilen, Assistant Professor
Ph.D., Civil Law, Galatasaray University, 2011. Property Law, Law of Obligations (special part), Business Law.

Gülüm Özçelik, Assistant Professor
Ph.D., Private International Law, Ankara University, 2007. European Union Law, Private International Law, Legal Aspects of Turkey-EU Relations, Selected Topics in English Law, International Family Law.

Şemsi Barış Özçelik, Assistant Professor
Ph.D., Civil law, Ankara University, 2009. Property Law, Law of Obligations (special part).

Hamdi Pınar, Assistant Professor
Ph.D., Commercial Law, Ludwig Maximilian University, Munich, 2002. Unfair Competition, Commercial Law, Intellectual Property Law, Advertising Law, Competition Law.

Sami Selçuk, Adjunct Professor
Ph.D., Law, Ankara University, 1982. Criminal Law, Criminal Procedure.

Ayşe Lale Sirmen, Visiting Professor
Ph.D., Civil Law, Ankara University, 1975. Property Law, Consumer Law, Civil law (Real Securities), Legal Acts (Transactions) Theory, Law of Obligations II, Concepts of Ownership and Limitations of Ownership Related with Land.

Turgut Tan, Professor
Ph.D., Administrative Sciences, Ankara University, 1970. Administrative Law, Public Economic Law, Legal and Administrative Aspects of Privatization.

Damla Gül Tarhan , Research Fellow
LLM, Law and Economics, Bilkent University, 2011.

Bilgin Tiryakioğlu, Visiting Professor
Ph.D., Private International Law, Ankara University, 1991. Citizenship and Foreigners Law, Private International Law, Foreign Investment Law, Moot Court, ICSID Arbitration, International Procedure.

Haluk Toroslu, Assistant Professor
Ph.D., Ankara University Faculty of Law, 2013. Basic Concepts of Law, Criminal Law, Criminology, Criminal Procedure.

Nevzat Toroslu, Visiting Professor
Ph.D., Law, Ankara University,1964. Criminal Law.

Sekine Derya Yakupoğlu, Research Fellow
LL.M., Law and Economics, Bilkent University, 2012.

Ejder Yılmaz, Visiting Professor
Ph.D., Ankara University, 1975. Civil Procedure, Enforcement and Bankruptcy Law.

PART-TIME ACADEMIC STAFF

Cavid Abdullahzade, Ph.D., Public Law, Ankara University, 2003. (Associate Professor at Ankara University)
Levent Akın, Ph.D., Ankara University, 2001. (Professor at Ankara University)
Gizem Alper, LLM, Law and Economics, Bilkent University, 2011.
Şahin Ardıyok, LL.M., Chicago University, 2004.
Sertaç Hami Başeren, Ph.D., Public Law, Gazi University, 1987. (Professor at Ankara University)
Alparslan Bayraktar, LL.M., Law and Economics, Bilkent University, 2013.
Onat Çopur, LL.M., Public Law, Ankara University 2006.
Haluk Emiroğlu, Ph.D., Roman Law, Ankara University, 2000. (Professor at İnönü University)
Pınar Tuna Ermumcu, LL.M., Law, Fribourg University, 2008.
Susan Gale Wintermuth, Ph.D., Law, University of Arizona, 1976. (Professor at University of Hamburg).
Osman R. Günver, Ph.D., Ankara University, 1999.
Gönenç Gürkaynak, LL.M., Harvard Law School, 2001.
Emel Hanağası, Ph.D., Ankara University, 2001. (Assistant Professor at Ankara University)
Fuat Oğuz, Ph.D., Economics, George Mason University, 2000. (Professor at Yıldırım Beyazıt University)
Erdoğan Öner, Ph.D., Economics, İstanbul University, 1997. (Professor at Ufuk University)
Özden Sav, Ph.D., Ankara University, 2000.
Başak Şit İmamoğlu, Ph.D., Commercial Law, Ankara University, 2010. (Assistant Professor at Ankara University)
Sinan Utku, JD, Ph.D., Physics, Yale University, 1994.
Gülriz Uygur, Ph.D., Philosophy, Hacettepe University, 1999. (Professor at Ankara University)
Ceren Ünal, LL.M., Computer and Communications Law, Queen Mary, University of London, 2002.
Aynur Yongalık, Ph.D., Ankara University, 2004.

UNDERGRADUATE PROGRAM

The Faculty of Law offers a broad set of courses concerning all challenging dimensions of contemporary law. The curriculum is structured to provide the students not only with knowledge in classical and substantial areas like constitutional law, administrative law, civil law, commercial law and criminal law, but also with basic professional information in other fields requiring an international perspective of specialization like competition law, intellectual and industrial property law, international commercial arbitration, European Union law and international business law. The courses consisting of the Turkish positive law with national character are given in Turkish while some others representing an international character and/or which could be learned in a foreign language like philosophy, international human rights law, international business law, European Union law etc. are given in English. The basic philosophy of the Faculty is not to be a “school of a profession” but to have a character of a forum where the students could gain, in addition to basic professional knowledge, a scientific legal approach to follow and participate in the permanent development of the world facing the challenge of globalisation. The Faculty is conscious of the fact and the graduate program is structured in such a way that the students shall have the opportunity to gain and develop the ability of determining, searching for and achieving the appropriate information they need.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CS 121	Introduction to Computer Tools	3 / 6
ENG 101	English and Composition I	3 / 6

GE 100	Orientation	1 / 1
LAW 101	Introduction to Law	3 / 4
LAW 103	Constitutional Law I	3 / 5
LAW 105	Civil Law I	3 / 5
MATH 119	Statistics for Lawyers	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester Credits / ECTS Credits

ECON 103	Principles of Economics	3 / 6
ENG 102	English and Composition II	3 / 6
HUM 111	Cultures Civilizations and Ideas I	3 / 6
LAW 102	Roman Law	3 / 4
LAW 104	Constitutional Law II	3 / 5
LAW 106	Civil Law II	3 / 5
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester Credits / ECTS Credits

GE 250	Collegiate Activities Program I	- / 1
LAW 201	Law of Obligations I	3 / 5
LAW 203	Criminal Law I	3 / 5
LAW 205	Administrative Law I	3 / 5
LAW 303	Public International Law	3 / 4
LAW 413	European Union Law	3 / 4
PHIL 243	Social and Political Philosophy I	6 / 12

Spring Semester Credits / ECTS Credits

GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
LAW 202	Law of Obligations II	3 / 5
LAW 204	Criminal Law II	3 / 5
LAW 206	Administrative Law II	3 / 5
LAW 216	Introduction to Anglo-American Law	2 / 4
PHIL 244	Social and Political Philosophy II	6 / 12

THIRD YEAR

Autumn Semester Credits / ECTS Credits

LAW 301	Civil Procedure I	3 / 5
LAW 305	Civil Law III: Law of Property I	3 / 5
LAW 307	Commercial Law I	3 / 5
LAW 309	Law of Obligations (Special Part)	2 / 4
MAN 211	Principles of Accounting I	3 / 6
	Department Elective	2 / 4

Spring Semester Credits / ECTS Credits

LAW 302	Civil Procedure II	3 / 5
LAW 304	Private International Law	3 / 4
LAW 306	Civil Law III: Law of Property II	3 / 5
LAW 308	Commercial Law II	3 / 5
LAW 358	Criminal Law (Special Part)	2 / 4
MAN 216	Elements of Finance	3 / 6
	Department Elective	2 / 4

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

LAW 401	Commercial Law III	3 / 5
LAW 403	Civil Law IV: Inheritance Law	3 / 5
LAW 407	Tax Law	3 / 4

LAW 409	Intellectual Property Law	2 / 4
LAW 411	Criminal Procedure	3 / 5
LAW 412	Labor Law I	2 / 4
	Department Elective	2 / 4

Spring Semester Credits / ECTS Credits

LAW 402	Commercial Law IV	2 / 4
LAW 405	International Human Rights Law	3 / 4
LAW 406	International Business Law	3 / 4
LAW 408	Competition Law	2 / 4
LAW 410	Enforcement and Bankruptcy Law	3 / 5
LAW 414	Labour Law II	2 / 4
	Department Elective	2 / 4

ELECTIVES

ECON 331	International Economics I	3 / 6
ECON 332	International Economics II	3 / 6
ECON 410	Contemporary Issues in Turkish Economy II	3 / 6
GE 471	Business and Legal Considerations for Technology Startups	3 / 4
IR 305	International Organizations	3 / 6
IR 338	Politics of International Economy	3 / 6
LAW 353	Environmental Law	2 / 4
LAW 355	History of Turkish Law	2 / 4
LAW 359	Comparative Private Law	2 / 4
LAW 360	Public Finance	2 / 4
LAW 365	Legal Philosophy	2 / 4
LAW 366	Legal Sociology	2 / 4
LAW 374	Parliamentary Law	2 / 4
LAW 375	Turkish Constitutional History	2 / 4
LAW 376	Selected Topics in English Law	2 / 4
LAW 383	Introduction to Law and Economics of Competition and Regulatory Policies	2 / 4
LAW 384	Criminology	2 / 4
LAW 385	Law and Morals	2 / 4
LAW 386	Law, Film and Literature	2 / 4
LAW 387	Social Security Law	2 / 4
LAW 388	Refugee Law and International Protection	2 / 4
LAW 390	Individual Application to the Constitutional Court (Merits and Procedure)	2 / 4
LAW 392	Criminal Law and Cultural Properties	2 / 4
LAW 415	Recognition and Enforcement of Foreign Arbitral Awards	2 / 4
LAW 420	International Commercial Arbitration	2 / 4
LAW 423	Law of Capital Markets	2 / 4
LAW 427	Citizenship and Foreigners Law	2 / 4
LAW 430	Financial Institutions Law	2 / 4
LAW 434	Budget Law	2 / 4
LAW 441	Monetary Law	2 / 4
LAW 445	Advertising Law	2 / 4
LAW 447	Moot Court I	2 / 4
LAW 448	Moot Court II	2 / 4
LAW 450	Introduction to Economic Analysis of Law	2 / 4
LAW 451	Moot Court III	2 / 4
LAW 452	Moot Court IV	2 / 4
LAW 454	Consumer Law	2 / 4
LAW 460	Legal Aspects of EU-Turkey Relations	2 / 4
LAW 465	Settlement of Energy Investment Disputes	2 / 4
LAW 466	Non-Contractual Liability Law	2 / 4
LAW 467	International Family Law	2 / 4
LAW 468	Legal and Administrative Aspects of Privatization	2 / 4
LAW 469	Humanitarian Law	2 / 4
LAW 472	Patent Law	2 / 4

LAW 474	Occupational Health and Safety	2 / 4
POLS 306	Contemporary Turkish Politics	3 / 6
POLS 433	Politics of European Integration	3 / 6

GRADUATE PROGRAM

LL.M. in Law and Economics

The rapid improvement of the relationship between law and economics brought multidisciplinary studies into the center of 21st century legal education and practice. In today's world, where interaction between law and economics has become clearer under the light of the developments in relation to globalisation, the need for experts, who not only know the legal framework of market economy well, but also can comprehend the economic effects of legal rules and analyze the economic sides of different legal regimes, is growing. In order to meet this need, it is important to train university degree holders in economics as well as law.

Recent and rapid approximation of the objectives of law and economics that had been considered totally diverse academic fields for many years indicates some important points about the relationship between law and economics. Investors require experts, who can interpret the legal rules by taking economic points of view into consideration and comment on a certain economic behaviour in the contexts of different legal systems, rather than standard legal consultancy. Competition Law and the Law of Economic Regulation are the most significant ones of the law fields prominent regarding this perspective.

Main purpose of the LL.M. Programme of Bilkent Law Faculty is to provide students with expertise on the legal framework of market economy as well as in the fields of Competition Law and Economic Regulation and with ability to adopt the interaction between law and economics in modern practice of these disciplines.

CURRICULUM

Courses		Credits / ECTS Credits
LAW 501	Economic Analysis of Law	3 / 7
LAW 503	Economics of Competition	3 / 7
LAW 504	Competition Law	3 / 7
LAW 505	Economic Regulation and Law	3 / 7
LAW 506	Energy Law and Policy	3 / 7
LAW 507	Public Economic Law	3 / 7
LAW 508	Telecommunications Law	3 / 7
LAW 509	Term Project	- / 25
LAW 510	Banking Regulation Law	3 / 7
LAW 520	Capital Markets and Market Abuse	3 / 7
	Elective	3 / 4

Doctor of Philosophy in Private and Public Law

The Faculty offers two Ph.D. programmes in Private Law and Public Law. The Programmes shall include courses in classical and substantial areas of both private and public law as well as in other fields requiring national and international perspective of specialisation. Some courses are held in English and others are in Turkish.

CURRICULUM OF Ph.D. IN PRIVATE LAW

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
LAW 634	Methodology of Law and Research Methods	- / 3
LAW 680	Seminar on Current Issues in Private Law	3 / 7
LAW 681	Seminar on Selected Topics in Private Law	3 / 7
LAW 682	Seminar on Current Issues in Public Law	3 / 7

LAW 683	Seminar on Selected Topics in Public Law	3 / 7
LAW 699	Ph.D. Dissertation	- / 160
	Electives (2)	6 / 12
	Restricted Electives (4)	12 / 24

RESTRICTED ELECTIVES

LAW 501	Economic Analysis of Law	3 / 7
LAW 505	Economic Regulation and Law	3 / 7
LAW 507	Public Economic Law	3 / 7
LAW 601	Civil Law (Real Securities)	3 / 7
LAW 605	Constitutional Judiciary	3 / 7
LAW 606	Fiscal Law	3 / 7
LAW 609	Criminal Law	3 / 7
LAW 610	ICSID Arbitration	3 / 7
LAW 612	Bound Enterprises Law (Company Groups Law)	3 / 7
LAW 613	ECHR Law	3 / 7
LAW 615	Doctrine of Innominate Contracts	3 / 7
LAW 618	Social Law	3 / 7
LAW 622	Preservation of Assets in Corporations	3 / 7
LAW 624	International Procedure	3 / 7
LAW 632	Legal Acts (Transactions) Theory	3 / 7
LAW 638	Concept of Ownership and Limitations of Ownership related with Land	3 / 7
LAW 640	Individual Application to the Constitutional Court (Merits and Procedure)	3 / 7
LAW 642	Freedom of Contract	3 / 7

CURRICULUM OF Ph.D. IN PUBLIC LAW

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
LAW 634	Methodology of Law and Research Methods	- / 3
LAW 680	Seminar on Current Issues in Private Law	3 / 7
LAW 681	Seminar on Selected Topics in Private Law	3 / 7
LAW 682	Seminar on Current Issues in Public Law	3 / 7
LAW 683	Seminar on Selected Topics in Public Law	3 / 7
LAW 699	Ph.D. Dissertation	- / 160
	Electives (2)	6 / 12
	Restricted Electives (4)	12 / 24

RESTRICTED ELECTIVES

LAW 501	Economic Analysis of Law	3 / 7
LAW 505	Economic Regulation and Law	3 / 7
LAW 507	Public Economic Law	3 / 7
LAW 601	Civil Law (Real Securities)	3 / 7
LAW 605	Constitutional Judiciary	3 / 7
LAW 606	Fiscal Law	3 / 7
LAW 609	Criminal Law	3 / 7
LAW 610	ICSID Arbitration	3 / 7
LAW 612	Bound Enterprises Law (Company Groups Law)	3 / 7
LAW 613	ECHR Law	3 / 7
LAW 615	Doctrine of Innominate Contracts	3 / 7
LAW 618	Social Law	3 / 7
LAW 622	Preservation of Assets in Corporations	3 / 7
LAW 624	International Procedure	3 / 7
LAW 632	Legal Acts (Transactions) Theory	3 / 7
LAW 638	Concept of Ownership and Limitations of Ownership related with Land	3 / 7

LAW 640 Individual Application to the Constitutional Court (Merits and Procedure) .. 3 / 7
LAW 642 Freedom of Contract ..... 3 / 7

COURSE DESCRIPTIONS

LAW 101 Introduction to Law
Law and social order; the sources of law and the hierarchy of the norms; characteristics of common law and the continental legal systems; main branches of public and private law; organisation of the Turkish judicial system; the application of norms and the methods of interpretation; transactions and rights. (in Turkish) *Credit units: 3 ECTS Credit Units: 4. Aut (T. Akıllıoğlu, H. Emiroğlu, C. Koçhisarlıoğlu, A. B. Özbilen)*

LAW 102 Roman Law
The subject of Roman Law and its importance in legal education; comparative study of Roman Law; historical introduction and the sources of Roman Law; law of persons and family law (slavery, citizens and non-citizens, the Roman family, corporations); Law of Actions - classification of actions; Law of Property (the law of things, classification of res, possession, ownership, modes of acquisition, servitudes, real securities); Law of Obligations: law of contracts (real, literal, verbal and consensual contracts); quasi contracts (condictio-negotiorum gestio); law of delicts (Furtum-Ratina-Iniuria-Damnum inuria datum); quasi delicts; transfer and discharge of obligations. (in Turkish) *Credit units: 3 ECTS Credit Units: 4. Spr (H. Emiroğlu)*

LAW 103 Constitutional Law I
Definition of State, Sovereignty, Constitution, Constituent Power, Hierarchy of Norms, Constitutional Review, Political Systems (totalitarian, authoritarian, democratic systems), Governmental Systems (legislative, presidential parliamentarian, semi-presidential systems), Introduction to Ottoman-Turkish Constitutional Developments. (in Turkish) *Credit units: 3 ECTS Credit Units: 5. Aut (E. Göztepe Çelebi, E. Onar)*

LAW 104 Constitutional Law II
General overview of Ottoman-Turkish Constitutional Developments, General overview of Constitution of 1982, Characteristics of the Republic, Fundamental Rights and Freedoms, Legislative Power, Elections, Members of Parliament, Parliamentary Immunities, Executive Power, Judiciary, Constitutional Court and Constitutional Review. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 103. Spr (E. Göztepe Çelebi, E. Onar)*

LAW 105 Civil Law I
Subject matter, historical background, sources and application of civil law; Basic Concepts: Right, acquisition of rights and legal transactions; good faith (bonafides); protection of rights; Natural Persons: Beginning and end of personality, capacities, protection of personality; Legal Persons. (in Turkish) *Credit units: 3 ECTS Credit Units: 5. Aut (H. C. Aksoy, M. A. Erten, O. B. Gürzumar) Spr (O. B. Gürzumar)*

LAW 106 Civil Law II
Law of Marriage: Engagement (the legal nature, conditions for a valid engagement, legal effects of engagement, end of engagement); marriage (the legal nature, conditions for a valid marriage, general legal effects of marriage and matrimonial property systems, dissolution of marital bond and its legal consequences); legitimacy (affinity); establishment of legitimacy, adoption, annulment of legitimacy, recognition, paternity suit, legal effects of legitimacy and especially the parental power (patria potestas); Family in broader sense; Guardianship (guardianship in technical sense, curatorship, statutory advisors). (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 105. Spr (P. Altınok Ormancı, M. A. Erten, C. Koçhisarlıoğlu)*

LAW 201 Law of Obligations I
Concepts of “obligational relationship” and “obligation”, sources of obligations, formation and validity of legal transactions; particularly contracts, representation, torts and unjust enrichment. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 105. Aut (H. C. Aksoy, M. A. Erten, E. Kuntalp) Spr (C. Koçhisarlıoğlu)*

LAW 202 Law of Obligations II
Performance of obligations, violation of obligations and its consequences, cease of obligations and some specialties related to obligations; namely conditional obligation, joint obligation, transfer of debt and assignment of obligation. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 201. Spr (H. C. Aksoy, M. A. Erten, E. Kuntalp)*

LAW 203 Criminal Law I
Legality, sources and application of the criminal laws; General theory of crime; elements of a crime; *Actus reus* and defenses; superior orders, necessity; *Mens rea* and crimes of negligence; mistake and ignorance of the laws. (in Turkish) *Credit units: 3 ECTS Credit Units: 5. Aut (T. B. Katoğlu, S. Selçuk, N. Toroslu)*

LAW 204 Criminal Law II
Different aspects of a crime; accompliance, assistance after the offence, criminal attempt; Criminal responsibility; infancy, insanity; Theories of punishment; nature of punishment. Consequences and suspension of punishment. Amnesty; New perspectives in criminal law. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 203. Aut (H. Toroslu) Spr (T. B. Katoğlu, S. Selçuk, N. Toroslu)*

LAW 205 Administrative Law I
Basic political and legal principles of Turkish administrative law; structural and functional aspects of central and local administrations, Rule-making power of administration. Unilateral administrative acts and contracts. Legal regime of public personnel and public domain. (in Turkish) *Credit units: 3 ECTS Credit Units: 5. Aut (T. Akıllıoğlu, E. E. Dalkılıç, T. Tan)*

LAW 206 Administrative Law II
Basic principles of judicial control of administration. Organization of administrative courts and Council of State; Judicial remedies (action for annulment and full remedy action); Liability of the administration and its agents. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 205. Spr (T. Akıllıoğlu, E. E. Dalkılıç, T. Tan)*

LAW 210 Basic Concepts of Law
Sources of law. Social life and the law. Definitions and concepts. Division of public and private law. Branches of law. (in Turkish) *Credit units: 3 ECTS Credit Units: 4. Aut (F. A. Bayata Canyaş, P. T. Ermumcu, H. Toroslu) Spr (H. C. Aksoy, P. T. Ermumcu)*

LAW 211 Basic Concepts of Law
Sources of law. Social life and the law. Definitions and concepts. Division of public and private law. Branches of law. *Credit units: 3 ECTS Credit Units: 4. Aut (C. Ünal) Spr (Staff)*

LAW 216 Introduction to Anglo-American Law
Basic concepts and terminology of Anglo-American legal system; particularly origins of the common law, its area of application, comparison between common law and civil law, law-making institutions; sources, precedent, acts of parliament, statutory instruments, statutory interpretation, relationship between common law and statutory law, hierarchy of courts, jury trials. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102. Spr (S. Gale Wintermuth)*

LAW 301 Civil Procedure I
Courts' structure, competence and venue, status of the plaintiff and the defendant, filing the lawsuit, submissions exchange, the trial, investigation, oral trial and judgment. (in Turkish) *Credit units: 3 ECTS Credit Units: 5. Aut (E. Yılmaz)*

LAW 302 Civil Procedure II
The proof of claims, burden of proof, evidence, legal remedies, intermediate appeal and appeal procedures, arbitration. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 301. Spr (E. Yılmaz)*

LAW 303 Public International Law
Normative factor of international relations; particularly international agreements and international customary law, jurisdictional aspects of international law, settlement of disputes. (in Turkish) *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 104. Aut (C. Abdullahzade, S. H. Başeren)*

LAW 304 Private International Law
Conflict of laws, international procedure law, private international law, citizenship and foreigners' law, recognition and enforcement of foreign judgments and arbitral awards, international jurisdiction of Turkish courts. (in Turkish) *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAW 106 and LAW 202. Spr (F. A. Bayata Canyaş, G. Özçelik, B. Tiryakioğlu)*

LAW 305 Civil Law III: Law of Property I
Concept, types and characteristics of property, legal characteristics of possession; acquisition, termination and protection of possession and related claims, land registry; particularly the structure and principles of registry, legal consequences of registration and correction of entries in land registry. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 105. Aut (A. B. Özbilen, Ş. B. Özçelik, A. L. Sirmen) Spr (A. B. Özbilen)*

LAW 306 Civil Law III: Law of Property II
Concept and scope of ownership, protection of ownership, ownership of movable and immovable property; particularly acquisition and loss of ownership, legal characteristics, types, acquisition and termination of limited real rights (servitudes, land charges and pledge). *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 305. Spr (A. B. Özbilen, Ş. B. Özçelik, A. L. Sirmen)*

LAW 307 Commercial Law I
Commercial enterprise, business transaction, commercial provisions, commercial jurisdiction, merchant, trade name, trademark, enterprise name, unfair competition, books of account, checking account, merchant assistants. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 202. Aut (S. Z. Aytaç, H. Pınar) Spr (A. E. Gürbüz Usluel)*

LAW 308 Commercial Law II
Ordinary partnerships, collective companies, commandite companies, joint stock companies, limited companies. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 307. Spr (S. Z. Aytaç, A. E. Gürbüz Usluel, M. Ç. Manavgat)*

LAW 309 Law of Obligations (Special Part)
Scope and characteristics of special provisions of Turkish Code of Obligations, nominate and innominate contracts, sales contract, rental contract, contract of mandate, bailment contract. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 202. Aut (P. Altınok Ormancı, M. A. Erten)*

LAW 313 Business Law
Introduction to law, basic concepts of civil law, rights, acquisition of rights via good faith, the principle of good faith, abuse of right, law of persons, capacity to have rights, capacity to act, the origins of obligation, the formation of contracts, validity requirements of contracts, invalidity of contracts, performance of obligations, performance modalities, legal consequences of non-performance, the concept of commercial enterprise and its legal structure, commercial affair and its legal consequences, legal consequences of being a merchant, selected topics concerning business and commercial law. (in Turkish) *Credit units: 3 ECTS Credit Units: 4. Aut (P. Altınok Ormancı, A. B. Özbilen, C. Ünal) Spr (F. A. Bayata Canyaş, P. T. Ermumcu)*

LAW 315 Administrative Law
Basic political and legal principles of Turkish administrative law and basic principles of judicial control of the administration. Sources of administrative law; structural and functional aspects of central and local administration and regulatory agencies; rule-making power of the administration: unilateral administrative acts; contracts of the administration and legal regime of public personnel. Organization of administrative courts and Council of State and their competences; judicial remedies; liability of the administration and its agents. (in Turkish) *Credit units: 3 ECTS Credit Units: 6. Aut (E. E. Dalkılıç)*

LAW 353 Environmental Law
A course offering a survey of the rules and regulations protecting the environment. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 104 and LAW 202 and LAW 206.*

LAW 355 History of Turkish Law
Jewish legal system, a brief overlook to European legal history, basic principles of Islamic Law, Ottoman legal institutions and the Romanisation of Ottoman Law from Tanzimat to 1926. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 102.*

LAW 358 Criminal Law (Special Part)
Particular crimes as homicide, assault, sexual offences, theft and related offences, offences of damage to property, offences against constitutional and public order, public health, forgery. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 204. Spr (T. B. Katoğlu, S. Selçuk, H. Toroslu)*

LAW 359 Comparative Private Law
A study and comparative analysis of various legal systems, focusing on the main features of private law. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 102 and LAW 202. Aut (H. Emiroğlu)*

LAW 360 Public Finance
Public services; public disbursements; evaluation of public disbursements in Turkey; theoretical basis of public revenues and disbursements; theoretical basis of income tax; theoretical basis of expenditure tax; theoretical basis of wealth tax; evaluation of Turkish Tax System in general, evaluation of Turkish Tax System in an economic and social perspective; evaluation of income tax, expenditure tax and wealth tax; theoretical basis of finance of local administrations; finance of local administrations in Turkey. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ECON 103 and LAW 101 and LAW 206 and MATH 119. Spr (M. K. Mutluer)*

LAW 365 Legal Philosophy
Relationship between law, philosophy and science, the scope and subject of legal philosophy, doctrine of "natural law", evaluation of the criticism against legal philosophy on the ground of being metaphysical under modern epistemology, concept of "legal justice" as the natural consequence of legal positivism. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and (PHIL 243 or PHIL 244). Spr (G. Uygur)*

LAW 366 Legal Sociology
Sociological currents that influenced and peneterated legal theory, history and cultural reasoning of sociological currents, methodology and meaning of sociological analysis of law, "sources of law": biggest contribution of the sociological approach, sociological definition of law. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and (PHIL 243 or PHIL 244) . Spr (G. Uygur)*

LAW 375 Turkish Constitutional History
1808 Charter of Alliance (Sened-i İttifak), 1839 Edict of Tanzimat, 1856 Edict of Islahat, Proclamation of Constitution of 1876, Suspension of the Parliament, Second Constitutionalist Era (1908), 1909 Amendments, World War, Dissolution of the Parliament, Establishment of Grand National Assembly, Constitution of 1921, Proclamation of Republic, Constitution of 1924, Transition to multi-party system, 1960 Military Intervention (coup d'etat), 1961 Constitution, 1971 amendments, 1980 Military Intervention (coup d'tat), National Security Council Era, 1982 Constitution, Elections. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 104.*

LAW 376 Selected Topics in English Law
Origins of common law, court structure, precedent, acts of parliament and statutory instruments, judiciary and legal profession in England, English law of contracts, relationship between common law and statutory law. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 and (PHIL 243 or PHIL 244) . Spr (G. Özçelik)*

LAW 383 Introduction to Law and Economics of Competition and Regulatory Policies
Concepts of "competition (antitrust) law and policy" and "regulation"; structure-conduct-performance paradigm, market structure, monopolization and dominance; oligopoly, collusion, and antitrust; mergers and acquisitions; network industries, natural monopolies, and their regulation. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: (ECON 103 and ENG 102 and LAW 101) OR (ECON 107 and ECON 108 and ENG 102 and (LAW 211 OR LAW 216)). Aut (H. B. Karabudak)*

LAW 384 Criminology
Deviance and crime; Historical background of criminology; Methods of criminological research; Explanations of criminal behavior. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 203 and LAW 204. Spr (H. Toroslu)*

LAW 385 Law and Morals
Several aspects of the relationship between law and morals; what moral values law may embody, how and to what extent law may reliably express a community's shared morality, ways in which law may be constrained by moral considerations and how law may transform and further moral values; various conceptions of individual liberty and moral concerns commonly associated with it, situations in which law may reasonably and permissibly infringe on these interests, the extent to which law should embody the moral views of a dominant majority versus preserving the rights and values of minority groups. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: (LAW 101 OR LAW 216 OR LAW 211) AND PHIL 244. Aut (K. S. Sorrell)*

LAW 386 Law, Film and Literature
The relationship between law, film and literature; how to analyse a film; the idea of justice in film and literature, the analysis of selected topics in film and literature: family and murder, slavery, portrait of a historical politician, ensest and burden of proof; physical integrity, mental illnesses and law, societal development and crime. (in Turkish) *Credit units: 2 ECTS Credit Units: 4.*

LAW 387 Social Security Law
The concept of social security; the field of application of social security law; social insurance types; unemployment insurance and general health insurance; individual pension; social assistance and social services in Turkish Social Security Law. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 202. Aut (L. Akın)*

LAW 388 Refugee Law and International Protection
Refugee, refugee rights and obligations, asylum, immigration, international protection, principle of non-refoulement, European Court of Human Rights, Turkish Law on Foreigners and International Protection. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 206. Aut (F. A. Bayata Canyaş)*

LAW 390 Individual Application to the Constitutional Court (Merits and Procedure)
Right of individual application to the Constitutional Court; evaluation of provisions of the Constitution and the Act on Constitutional Court; protection of fundamental rights through constitutional justice; decisions of European Court of Human Rights; decisions of the Constitutional Court on individual application; theory of fundamental rights. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 104 and LAW 206.*

LAW 392 Criminal Law and Cultural Properties
Protection of cultural heritage and cultural properties by criminal law instruments. Responses provided by international public law and international criminal law. International criminal protection during the armed conflicts and the period of peace, war crimes and crimes against humanity offending cultural properties. Criminal provisions foreseen under Turkish law. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 203 and LAW 204. Spr (T. B. Katoğlu)*

LAW 401 Commercial Law III
Negotiable instruments, drafts, bonds, bills of exchange. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 202. Aut (M. Ç. Manavgat) Spr (H. Pınar)*

LAW 402 Commercial Law IV
Insurance contracts, compulsory insurances, life and property insurances, actuaries and brokers, loss adjusters, insurance agents. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 202. Spr (A. Yongalık)*

LAW 403 Civil Law IV: Inheritance Law
Concept of inheritance, deceased, heirship, functions and intentions of inheritance law, the terminology of inheritance law, general principles of inheritance law, legal heirship, testamentary heirship, forced heirship, falcidian portion, protection of falcidian portion, abridgement, discretionary portion, testamentary disposition, the types of testamentary disposition, invalidity of testamentary disposition, interpretation of testamentary disposition, testa-

ment, testamentary contract, calculation of succession, hotchpot, protection and administration of succession, co-ownership of heirs, partition of the succession. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 105. Aut (C. Koçhisarlıoğlu)*

LAW 405 International Human Rights Law
General principles of international human rights law, European Human Rights Convention, definition of human rights, the basic mechanisms for enforcing human rights and the role of the political realities in promoting human rights. (in Turkish) *Credit units: 3 ECTS Credit Units: 4, Prerequisite: LAW 411. Spr (T. Akıllıoğlu)*

LAW 406 International Business Law
A course dealing especially with international business transactions. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: ENG 102 and LAW 302 and LAW 308 and LAW 309. Spr (S. Gale Wintermuth)*

LAW 407 Tax Law
Basic principles of tax law, parties of taxation, process of taxation, valuation, depreciation and equivalents, tax penalties, tax enforcement law, income tax, corporate tax, expenditure taxes: value added tax, special consumption tax, wealth taxes. (in Turkish) *Credit units: 3 ECTS Credit Units: 4. Aut (M. K. Mutluer, E. Öner) Spr (M. K. Mutluer)*

LAW 408 Competition Law
Basic concepts of competition law, anti-competitive agreements and concerted practices, abuse of the dominant position, mergers and acquisitions. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ECON 103 and LAW 202 and LAW 206 and LAW 308. Spr (G. Gürkaynak, O. B. Gürzumar, H. Pınar)*

LAW 409 Intellectual Property Law
Copyright, industrial property rights: patents, trademarks, geographical indications, industrial designs. Intellectual property law in the EU and in the US. (in Turkish) *Credit units: 2 ECTS Credit Units: 4. Aut (H. Pınar) Spr (H. Pınar)*

LAW 410 Enforcement and Bankruptcy Law
The organisation of execution office, court orders enforcement, forcing of payments of debts, order of payment, objection, sequestration, forced sale, enforcement for negotiable instruments and bankruptcy. (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 202 and LAW 302 and LAW 307. Spr (E. Hanağası, E. Yılmaz)*

LAW 411 Criminal Procedure
Jurisdiction; Evidence; Burden of proof; Commencement and conduct of; Proceedings; Legal remedy (review). (in Turkish) *Credit units: 3 ECTS Credit Units: 5, Prerequisite: LAW 302. Aut (T. B. Katoğlu, S. Selçuk, H. Toroslu) Spr (H. Toroslu)*

LAW 412 Labor Law I
Basic concepts of labour law, including the worker, employer, and employment contract, and of the Turkish law on the contractual relationship between the worker and the employer.(in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 202. Aut (L. Akın, A. R. Işık) Spr (A. R. Işık)*

LAW 413 European Union Law
Institutions of the European Union, historical evolution of the EU, EU institutions, EU competence, sources of EU law, relationships between legal systems of the EU and member states, role of the individual. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: (ENG102 AND LAW 101 AND LAW 104 AND LAW 105) OR LAW 211. Aut (G. Özçelik) Spr (G. Özçelik)*

LAW 414 Labour Law II
All stages of collective labour law, covering trade unions, collective bargaining, collective labour agreements, collective labour disputes, including peaceful dispute resolution methods as well as the right to strike and the right to lockout.(in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 412. Spr (L. Akın, A. R. Işık)*

LAW 415 Recognition and Enforcement of Foreign Arbitral Awards
Conditions of enforcement and the possible impediments to enforcement, comparative law, international conventions, recognition, Turkish procedural law, arbitration agreement, arbitrability. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 304. Aut (F. A. Bayata Canyaş) Spr (F. A. Bayata Canyaş)*

LAW 416 Introduction to Contract Law
The concept of contractual obligation, obligational relationship, obligation and liability, legal transactions, declaration of intention, formation of contracts, freedom of contract, form of legal transactions, validity of contracts, interpretation of declarations of intention, representation, standard contract terms, cause of transactions, performance of obligations, legal consequences of non-performance, cease of obligations. *Credit units: 3 ECTS Credit Units: 4. Spr (H. C. Aksoy)*

LAW 420 International Commercial Arbitration
International and ad hoc arbitration, validity of the arbitration agreements, procedural rules of arbitration proceedings, role of party autonomy in arbitration, recognition and enforcement of arbitral awards (in Turkish). *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 302. Spr (B. Tiryakioğlu)*

LAW 423 Law of Capital Markets
Rules and regulations being applied on the instruments and transactions in the capital market. The concept of capital market, fundamental participants: issuers; investors; instruments; stock market; intermediary institutions, corporate governance, dematerialization of capital market instruments, stock exchanges. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 308. Aut (M. Ç. Manavgat)*

LAW 427 Citizenship and Foreigners Law
Citizenship law, dual nationality, acquisition of Turkish citizenship, foreigners' law, deportation, passport and visa law, status of aliens, nationality, asylum. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 104 and LAW 206. Aut (F. A. Bayata Canyaş)*

LAW 430 Financial Institutions Law
Financial markets and financial instruments. Economic and legal functions of financial institutions, regulatory approach to the financial institutions, financial institutions in EU law, categories and natures of the financial institutions, the public authorities such as Banking Regulation and Supervision Agency and Capital Market Board, comparative analysis of the financial institutions and main features of banks and securities firms. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 308.*

LAW 434 Budget Law
History of budget, budgetary principles, types of budget, public finance management, Turkish Budget System, its preparation, discussion and execution, budget financing and budgetary control. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 104 and LAW 206.*

LAW 441 Monetary Law
Monetary law and its sources, concept of money and its definition, monetary systems, national monetary system, gain of the mint, emission of banknotes, circulation of money, forgery of banknotes, foreign currency law, money at international private law, money market, financial intermediary, instruments. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 104 and LAW 202 and LAW 206. Aut (O. R. Günver)*

LAW 445 Advertising Law
Advertising regulations in the European Union, advertising under unfair competition law, consumer law and other laws in Turkey, misleading and comparative advertising, TV specific and product specific advertisement regulations, sanctions against unfair advertising and self-control mechanisms. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 202 and LAW 206.*

LAW 447 Moot Court I
International commercial arbitration, CISG, advocacy, student competition. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 and LAW 101 and LAW 102 and LAW 104 and LAW 202 and LAW 204 and LAW 206 and LAW 216 and LAW 303 and LAW 413 and PHIL 243 and PHIL 244. Aut (A. E. Gürbüz Usluel, B. Tiryakioğlu)*

LAW 448 Moot Court II
International commercial arbitration, CISG, advocacy, student competition. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 and LAW 101 and LAW 102 and LAW 104 and LAW 202 and LAW 204 and LAW 206 and LAW 216 and LAW 303 and LAW 413 and PHIL 243 and PHIL 244. Spr (A. E. Gürbüz Usluel, B. Tiryakioğlu)*

LAW 450 Introduction to Economic Analysis of Law
Law and economics concepts, efficiency and distribution; fundamental concepts of microeconomic theory and game theory; civil law and common law traditions; economic theory of property; bargaining theory; economic theory of tort liability, computing damages; introduction to economic theories of contracts, legal process, crime and punishment. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: (ECON 103 and ENG 102 and LAW 101) OR (ECON 107 and ECON 108 and ENG 102 and (LAW 211 or LAW 216)). Spr (H. B. Karabudak)*

LAW 451 Moot Court III
International commercial arbitration, CISG, advocacy, student competition. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 and LAW 101 and LAW 102 and LAW 104 and LAW 202 and LAW 204 and LAW 206 and LAW 216 and LAW 303 and LAW 413 and PHIL 243 and PHIL 244. Aut (A. E. Gürbüz Usluel, B. Tiryakioğlu)*

LAW 452 Moot Court IV
International commercial arbitration, Convention on the International Sale of Goods (CISG), advocacy, student competition. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 and LAW 101 and LAW 102 and LAW 104 and LAW 202 and LAW 204 and LAW 206 and LAW 216 and LAW 303 and LAW 413 and PHIL 243 and PHIL 244. Spr (A. E. Gürbüz Usluel, B. Tiryakioğlu)*

LAW 454 Consumer Law
Economic impact of consumer law, consumer law in EU regulations, protection of consumer interest in The Law on the Protection of the Consumer, consumer contracts; particularly doorstep selling, installment sales, sales through campaigns, packet tours, distance contracts, consumer credits, standard terms in consumer contracts, deficiencies in goods acquired and services provided, right of withdrawal. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 309. Aut (A. L. Sirmen) Spr (A. L. Sirmen)*

LAW 460 Legal Aspects of EU-Turkey Relations
Historical background to EU-Turkey relations, Ankara Agreement of 1964, institutions, Additional Protocol of 1973, decisions of the Association Council, decisions of the European Court of Justice, Turkish nationals, accession negotiations. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 303.*

LAW 465 Settlement of Energy Investment Disputes
Energy investments, Host State, Home State, Investor, Bilateral Investment Treaties, Most Favored Nation (MFN) Clause, Washington Convention, Multilateral Investment Guarantee Agency (MIGA), Energy Charter Treaty, mechanisms for settlement, arbitration, International Center for Settlement of Investment (ICSID) arbitration, enforcement of arbitral awards. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 101 and LAW 206. Aut (B. Tiryakioğlu)*

LAW 467 International Family Law
Private international law, determination of applicable law, jurisdiction of Turkish courts, recognition and enforcement of foreign judgments by Turkish courts, marriage, custody, maintenance, divorce, legal separation. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 106 and LAW 304. Aut (G. Özçelik)*

LAW 468 Legal and Administrative Aspects of Privatization
Credit units: 2 ECTS Credit Units: 4, Prerequisite: ECON 103 and LAW 104 and LAW 206. Spr (T. Tan)

LAW 469 Humanitarian Law
Humanitarian Law in the 20th century, World War I-II, Nurnberg and Tokyo Tribunals, former Yugoslavia and Rwanda ad hoc tribunals, International Criminal Court and concept of "international crime", hybrid tribunals, women and children in war. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 303. Aut (Ö. Sav)*

LAW 472 Patent Law
A review of intellectual property, analysis of the patent document, requirements for patentability, infringement and the nature of patent exclusivity, inventorship and ownership issues, patenting strategies, the interface of patent law and competition law, sector specific considerations (in the hi-tech and pharmaceutical sectors). *Credit units: 2 ECTS Credit Units: 4. Spr (S. Utku)*

LAW 474 Occupational Health and Safety
Occupational health and safety in the World and in Turkey, occupational health and safety organization, rights and obligations of occupational physician and work safety expert, indemnities arising from work accidents and criminal liability. (in Turkish) *Credit units: 2 ECTS Credit Units: 4, Prerequisite: LAW 412. Spr (L. Akın)*

LAW 501 Economic Analysis of Law
Concepts of "risk aversion" and "diminishing marginal utility income", economic analysis of contract law - economic function of law of contracts, economic analysis of tort law, cost and benefit analysis, external effects, rational choice theory in law and economics, concept of "risk allocation", damage compensation rule, concept of "economic efficiency", property rule versus liability rule, concept of "optimal level of care", negligence, strict liability, judgment proof problem. *Credit units: 3 ECTS Credit Units: 7. Aut (F. Oğuz)*

LAW 503 Economics of Competition
The firm and cost concepts; perfectly competitive and monopolistically competitive markets, monopolies, monopsonies, dominant firms, network externalities and essential facilities; oligopolies and cartels; industry structure and performance; basics of EU and US antitrust rules; functions and structure of the Turkish Competition Authority; horizontal and vertical mergers and acquisitions, privatization and liberalisation processes. *Credit units: 3 ECTS Credit Units: 7. Aut (H. B. Karabudak)*

LAW 504 Competition Law
Basic concepts of competition law, anti-competitive agreements and concerted practices, abuse of the dominant position, mergers and acquisitions; decisions of the Turkish Competition Board, Turkish Conseil d'Etat, European Commission, European Court of Justice, US Supreme Court. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (O. B. Gürzumar, H. Pınar)*

LAW 505 Economic Regulation and Law
Information about basic pricing theory, concept of market failure, regulation theory and its alternatives, regulatory process and institutional framework, scope of regulation and sharing of responsibilities, and methods of application of regulation in related markets such as price, transportation and consumer protection. *Credit units: 3 ECTS Credit Units: 7. Aut (Ş. Ardıyok)*

LAW 506 Energy Law and Policy
Legal aspects and development of electric, natural gas, petroleum and LPG industries; legal and economical analysis of these industries; license, tariff and monitoring mechanisms regarding these industries; relation between energy sector and environment. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (Ş. Ardıyok, A. Bayraktar)*

LAW 507 Public Economic Law
Characteristics and sources of public economic law; the law of the state intervention in the economy; fundamental principles of public economic law; public organisation in the economy area; public law framework of the market economy and the transition period from interventionist state to regulatory state; and privatisation of public economic enterprises, the legal mechanisms of public-private partnership in public services and the regulation of sectors. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Aut (T. Tan)*

LAW 508 Telecommunications Law
Economic concepts of telecommunications regulation; EU telecommunications regime and Turkish telecommunications law; telecommunications law in the UK and the US; authorization and licensing, access and interconnection, spectrum management, capacity agreements, consumer protection; competition law in telecommunications; internet service providers, content liability, control, and neutrality; convergence, broadcast regulation and telecommunications. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (H. B. Karabudak)*

LAW 509 Term Project
Accomplishment of a research project related to one of the courses, submission of the project in the form of a written report. *Credit units: None ECTS Credit Units: 25. Aut (Staff) Spr (Staff)*

LAW 510 Banking Regulation Law
Definition of bank, types of banks, main characteristics and functions of banks, legal provisions about banking sector, risks and precautions in banking sector, regulation of banking sector, Banking Regulation and Supervision Agency (BRSA). (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (B. Şit İmamoğlu)*

LAW 520 Capital Markets and Market Abuse
The concept of market, price formation mechanisms, market abuses: insider trading and manipulation, sanctions for abuses: criminal and legal liabilities, market oriented approach, regulation approach in the European Union. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (M. Ç. Manavgat)*

LAW 534 Patent Law
Introduction to intellectual property, analysis of the patent document, requirements for patentability, infringement and the nature of patent exclusivity, inventorship and ownership issues, patenting strategies, the interface of patent law and competition law, and sector specific considerations (in the hi-tech and pharmaceutical sectors). *Credit units: 3 ECTS Credit Units: 6. Spr (S. Utku)*

LAW 540 Real Estate Market Law
Importance of the subject matter; concepts of property, immovable property and property law; concept of property from a legal, philosophical and economic perspective; economic analysis of property law; rights on immovable property; obligation and liability, security, lien; liens on immovable property; liens on movable property and on rights or claims; bonds that are issued with a security on immovable property according to the Turkish Civil Code; concept of market; market of immovable property; markets in which immovable property changes hands; markets in which instruments based on securities on immovable property change hands, capital markets; basic concepts of the law of capital markets; real estate finance; housing finance. (in Turkish) *Credit units: 3 ECTS Credit Units: 6. Spr (O. R. Günver)*

LAW 544 The Legal Framework of Social Dialogue
Social dialogue, the "making" of EU Labour Law .The need for EU initiatives on social issues: European social dialogue: core concepts and mechanisms; structural and functional legal analysis. Rights to share information, to be consulted, to decide jointly, to produce joint opinions. Tripartite and bipartite platforms for dialogue. (in Turkish) *Credit units: 3 ECTS Credit Units: 6.*

LAW 546 Current Issues in Labour Law
Current developments in labour law in relation to the developing world, where there are no restrictions in the international movement of capital, goods, services and technology; establishing balance between the social partners; new labour administration that includes a new system of labour inspection; the changing roles of workers' and employers' organisations; modernisation of labour law; flexicurity; non-typical work; social dialogue; and conciliation. *Credit units: 3 ECTS Credit Units: 6. Spr (A. R. Işık)*

LAW 601 Civil Law (Real Securities)
General concept of real securities; particularly legal characteristics and types of real securities; namely pledge of movable property and mortgage on immovable property, creation and termination of pledge and mortgage, realization of pledge and mortgage, effective use of them in banking law. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (A. L. Sirmen)*

LAW 605 Constitutional Judiciary
Functions of constitutional review and its relation to democracy, status of constitutional courts in political systems, the problem of constitutional court as "political actor", the problem of judicial activism and judicial self-restraint, rigid constitutions, protection of legal and political system by the means of constitutional review. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (E. Onar)*

LAW 606 Fiscal Law
Fiscal Law deals with public revenue and expenditure as well as the matters regarding their equalisation. According to this definition, Fiscal Law is composed of two main parts. The first part includes legal analysis of public revenue. Since public revenue is made up of mainly tax revenues, this part is also called Tax Law. The second part includes the legislation on expenditure. Legislation on expenditure is inseparable with legislation on budget. In this respect legal analysis of expenditure and budget may be called as Budget Law. Tax Law and Budget Law are also divided into certain parts within themselves. In the Course of Fiscal Law in the Ph.D. program the topics such as law of taxation, taxation procedure, taxation enforcement, taxes in the general tax system, the principles and implementation of budget and monitoring of expenditures shall be assessed from a legal and fiscal point of view. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (M. K. Mutluer)*

LAW 609 Criminal Law
Elements of crime; Attempt; Accomplicity; Offender; Punishment; Current issues in criminal law. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Aut (T. B. Katoğlu)*

LAW 610 ICSID Arbitration
Foreign direct investments, International Center for Settlement of Investment (ICSID) arbitration, additional facility rules, ICSID cases against Turkey, settlement of state-investor disputes, jurisdiction of ICSID, enforcement of ICSID arbitral awards, World Bank. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 612 Bound Enterprises Law (Company Groups Law)
Provisions of Turkish Commercial Code for group of companies, dominant and affiliated companies, legal independence-economic dependence, main concepts such as dominance, types and tools of dominance, contracts between group companies, special protection for shareholders within the provisions of Turkish Commercial Code for group of companies, supervision and disclosure requirements, liabilities specially designed for group of companies. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 613 ECHR Law
European Convention on Human Rights and Turkish domestic law; Characteristics of the European Convention on Human Rights and its organs; Classification and Effects of the Decisions of the European Court of Human Rights regarding Turkey; Effects of the decisions on Turkish domestic law; Situations that are faced in practice; Matters that should be dealt with in Turkish domestic Law. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 615 Doctrine of Innominate Contracts
Freedom of contract and its limits, innominate contracts and mixed contracts; particularly the rules governing innominate contracts, filling the blanks in mixed and innominate contracts, multi-meaning provisions in contracts and especially in innominate contracts, type and the typological practice. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Spr (E. Kuntalp)*

LAW 618 Social Law
Ph.D. seminar giving an overview of the background and sources of collective labour law and social policy, a brief history of collective labour law, emergence of traditional labour institutions trade unions, collective agreements, labour disputes, strikes, together with increase and decrease in density of union membership, economics and human rights perspectives on labour laws and emergence of new labour instruments, among which are social dialogue, participation, flexibility, new forms of employment contracts, job security. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Aut (A. R. Işık)*

LAW 622 Preservation of Assets in Corporations
The assets of a joint-stock company constitute a guarantee for its creditors and the shareholders have rights on these assets. The Turkish Commercial Code contains special provisions aimed at preserving assets. The relationship between the capital and assets of a joint-stock company will be analyzed, significance of preserving assets for joint-stock companies will be determined under title "Preservation of Assets in a Joint-Stock Company" which will be followed by an integrated analyses of measures aimed at preserving assets. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 624 International Procedure
International Jurisdiction of state courts, The European Agreement concerning the International Carriage of Dangerous foods by Road (ADR), Arbitration, Recognition and Enforcement of arbitral awards, Subject matter jurisdiction of domestic courts in international disputes, exorbitant jurisdiction of the courts, annulment of arbitral awards. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Aut (B. Tiryakioğlu)*

LAW 632 Legal Acts (Transactions) Theory
Formation, form and validity of legal acts, types of legal acts; particularly the contracts, rules governing contracts, formation and validity of contracts, legality and interpretation of the contracts. (in Turkish) *Credit units: 3 ECTS Credit Units: 7. Aut (A. L. Sirmen)*

LAW 634 Methodology of Law and Research Methods
Materials and tools for legal studies, methods and principles on shaping ideas and writing papers, function of comparative law and methodological considerations, legal hermeneutic. (in Turkish) *Credit units: None ECTS Credit Units: 3. Aut (E. Göztepe Çelebi)*

LAW 638 Concept of Ownership and Limitations of Ownership related with Land
Concept and scope of ownership, human rights and ownership, land ownership and its limitations, statutory and contractual restrictions of ownership, liability of the land owner. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 640 Individual Application to the Constitutional Court (Merits and Procedure)
The individual application which entered into force in Turkish legal system by 2010 constitutional amendment is an extraordinary legal remedy and must be exhausted prior to an application to the ECHR. Thus, it is quite important for students to have the knowledge of this new legal remedy at least in a general sense. The right to individual application whose basic principles are set forth in the Constitution, while the substance and procedure are set forth in "Law on the Establishment and Rules of Procedures of the Constitutional Court" (No. 6216) and "By-Law of the Court", creates actually the biggest workload of the Constitutional Court. Decisions of the Constitutional Court that reached a number more than 1000 by June 2015 will be discussed thematically in the framework of the course. While discussing the Court decisions, the problems caused by relevant legislation and the interpretation methods used by the Constitutional Court will be critically analyzed. The leading decisions of the Court and relevant articles as well as book chapters will be read and discussed in depth with active participation of the doctoral students. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 642 Freedom of Contract
The concept and scope of freedom of contract, distinction between public law and private law restrictions, restrictions to freedom to make contracts and the content freedom, contemporary restrictions on freedom of contract with regards to consumer law, labor law, rental law and standard contract terms. (in Turkish) *Credit units: 3 ECTS Credit Units: 7.*

LAW 680 Seminar on Current Issues in Private Law
Current issues and new developments in private law. The specific content determined by the instructors. *Credit units: 3 ECTS Credit Units: 7. Spr (S. Z. Aytaç)*

LAW 681 Seminar on Selected Topics in Private Law
Material topics on various fields of private law. The specific content determined by the instructors. *Credit units: 3 ECTS Credit Units: 7.*

LAW 682 Seminar on Current Issues in Public Law
Current issues and new developments in public law with specific content to be determined by instructors. *Credit units: 3 ECTS Credit Units: 7. Aut (T. Akıllıoğlu)*

LAW 683 Seminar on Selected Topics in Public Law
Material topics on various fields of public law. The specific content determined by the instructors. *Credit units: 3 ECTS Credit Units: 7.*

LAW 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 160. Aut (Staff) Spr (Staff)

FACULTY OF MUSIC AND PERFORMING ARTS

Abdullah Atalar, Ph.D., Acting Dean
Kağan Korad, Assoc. Dean
Tahsin Tolga Yayalar, Ph.D., Asst. Dean

The Faculty of Music and Performing Arts comprises two academic departments:

- Music
- Performing Arts

Bilkent University Faculty of Music and Performing Arts was founded in 1986 as one of the first three faculties of the University. With the exception of the state conservatories, it is the first faculty in Turkey offering higher education in the fields of music and performing arts.

The Music Department of the Faculty offers training in most artistic fields, including composition, piano, string and wind instruments. The Theater department offers programs in acting.

The Faculty aims to train artists who are creators, interpreters, educators and researchers in their respective fields, to take part in and contribute to international events and to provide an environment for creativity, interpretational excellence and research.

A pioneer in its work methods in Turkey, the Faculty of Music and Performing Arts is fast becoming an "International Art Center" with its programs ranging from preschool to proficiency in art (Doctor of Musical Arts) and its professional ensembles and artistic organizations. Among some activities of the Faculty are the Early Music Training Program, Music Preparatory Primary and High Schools, and the Bilkent Symphony Orchestra.

The public and universal identity of art necessitates the early and dynamic integration of art education with the society and the international art world. Aiding the appreciation of music in Turkey and actively participating and contributing to the artistic world nationally and internationally, are among the primary objectives of the Faculty.

ACADEMIC STAFF

Feruza Abdullaeva, Instructor
M.M., Violin, Bilkent University, 1999. Principle Second Violin, BSO.

Seyran Ahundzade, Instructor
B.A., Violin, Azerbaijan State Conservatory, 1978. Member, BSO.

Selen Akçora, Instructor
M.M., Clarinet, Bilkent University, 1998. Member, BSO.

Ece Akyol, Instructor
M.M., Viola, Bilkent University, 2009. Member, BSO.

Selçuk Akyol, Instructor
D.M.A., Oboe, Robert Schumann Hochschule, 2006.

Davut Ali, Instructor
B.A., Violin, Erivan State Conservatory, 1985. Member, BSO.

Güloya Altay, Instructor
M.Mus., Horn, Johannes Gutenberg University, 2012.

Yiğit Aydın, Instructor
M.M., Composition and Conducting, Hacettepe University, 2000.

Ebru Naile Aykal, Instructor
M.M., Flute, Bilkent University, 1998. Member, BSO.

Gürer Aykal, Adjunct Professor
D.M.A., Conducting, Santa Cecilia Academy of Music, 1973. “State Artist” Republic of Turkey, 1981.

Adelya Azikeyeva Ateşoğlu, Instructor
B.A., Violin, Tashkent State Conservatory, 1999. Member, BSO.
Adilhoca Aziz, Instructor
B.A., Violin, Tashkent State Conservatory, 1978. Member, BSO.
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D.M.A., Aspirantura, Violoncello, Azerbaijan State Conservatory, 1987. Member, BSO.
Rasim Bağırov, Instructor
B.A., Violin, Azerbaijan State Conservatory, 1977. Member, BSO.
Suzana Bezhani, Instructor
B.A., Violin, "Tirana" National Academy of Fine Arts, 1979. Member, BSO.
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B.A., Viola, Moscow "Tchaikovsky" State Conservatory, 1983. Principle Viola, BSO.
Nezihe Nil Cetiz, Instructor
Ph.D., Violin, Bilkent University, 2007. Member, BSO.
Verda Çavuşoğlu, Instructor
M.M., Violoncello, Bilkent University, 1998. Member, BSO.
Süreyya Defne, Instructor
M.M., Violin, Bilkent University, 1995. Member BSO.
Eda Delikçi, Instructor
M.M., Violin, Bilkent University, 2007. Member, BSO.
Deren Eryılmaz Pöğün, Instructor
M.M., Piano Performance Başkent University, 2007. B.M, Hogeschool vor Musiek en dans Rotterdam, 2007.
Ozan Evruk, Instructor
M.A., Royal Northern College of Music, 2008. Member, BSO.
Shalva Gagua, Instructor
B.A., Double Bass, "Tbilisi" State Conservatory, 1980. Member, BSO.
Dritan Gani, Instructor
B.A., Double Bass, State Academy of Fine Arts, Tirana, 1989. Member, BSO.
Salim Gayıblı, Instructor
D.M.A., Aspirantura, Violoncello, Azerbaijan State Conservatory, 1980. Member, BSO.
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B.A., Viola, Leningrad State Conservatory, 1981. Member, BSO.
Marina Agapova Görmüşoğlu, Instructor
M.M., Violin, Bilkent University, 1997. Member, BSO.
Ferhat Gülmehmet, Instructor
B.A., Violin, Leningrad State Conservatory, 1970. Member, BSO.
Cem Güngör, Instructor
B.A., Trombone, Hacettepe University, 2002. Principle Trombone BSO.
Laszlo Gyarmati, Instructor
M.A.,Horn, Ferenc Teacher Training School, Debrecen, 1993. Member, BSO.
Hasan Erim Hacat, Instructor
B.A., French Horn, Hacettepe University, 2011. Member, BSO.
Sema Celil Hakioğlu, Instructor
Ph.D., Viola, Bilkent University, 2010. Member, BSO.
Jason Edward Hale, Assistant Professor
M.A., Directing, Antioch University, 2010.
Yoonie Han, Instructor
M.M., Piano, The Juilliard School, 2009.

Hajredin Hoxha, Instructor
B.A., Violoncello, “Tirana” Institute of Fine Arts, 1982. Principle Violoncello, BSO.
Daniel J Irizarry Osorio, Visiting Assistant Professor
M.F.A., Acting, Columbia University, 2004.
Nusret İspir, Instructor
M.M., Clarinet, Conservatoire Régional de Musique de Rouen, 1996. Principle Clarinet, BSO.
Gamze Kırtıl, Instructor
D.M.A., Piano, “Diplome Superieur Concertiste de Musique” Ecole Normale de Musique de Paris "Alfred Cortot" 2004. “Diplome de Pedagogy” E.N.M.P 2001.
Krasimir Konyarov, Instructor
B.A., Trumpet, State Academy of Music, Sofia, 1990. Member, BSO.
Kağan Korad, Associate Professor
Ph.D., Proficiency in Art, Classic Guitar, Bilkent University, 2001.
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M.M., Violin, Bilkent University, 2007. Member, BSO.
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D.M.A., Musicology, Moscow "Tchaikovsky" State Conservatory, 2010.
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B.A., Oboe, Music Pedagogy, “Iasi” Academy of Music, 1993. Member, BSO.
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D.M.A., Tuba, Hochschule für Musik und Theater Hannover, 2008
Irina Nikotina, Instructor
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M.M., Theory, Instrument Pedagogy, Lodz Music Academy, 1983.
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Ph.D., Proficiency in Art, Double Bass, Bilkent University, 2013. Member, BSO.
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Barış Simolin, Instructor
B.A., Viola, Tashkent State Conservatory, 1973. Member, BSO.
Svetlana Smolin, Instructor
B.A., Viola, Tashkent State Conservatory, 1986. Member, BSO.
Ezgi Tandoğan, Instructor
M.A., Bassoon, Academy of Music Hanns Eisler, 2012. Member, BSO.
Viktoriya Tokdemir, Instructor
B.A., Oboe, "Gnesin" State Institute of Music Education, 1987. Member, BSO.
Zurab Tsitsuashvili, Instructor
M.A. Double Bass, Tbilisi State Conservatory, 1993. Member, BSO.
Onur Türkmen, Assistant Professor
Ph.D., Composition, İstanbul Technical University. Center for Advanced Studies in Music, 2010.
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Leonid Volkov, Instructor
M.A., Clarinet, Moscow "Tchaikovsky" State Conservatory, 1993. Member, BSO.
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Ph.D., Composition, Harvard University, 2010.
Refik Zamanalioğlu, Instructor
B.A., Violin, Azerbaijan State Conservatory, 1977. Member, BSO.
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B.A., Flute, "Ferenc Liszt" Academy of Music, 1980. Member, BSO.

VOCATIONAL SPECIALISTS

Leonard Chelov
B.M., Violoncello, Leningrad State Conservatory, 1966. Piano Tuning.

PART-TIME ACADEMIC STAFF

Serkan Ağır, D.M.A., Classic Guitar, Mimar Sinan University, 2012.
Ülkemin Akbaş, B.A., Composition, Vienna University of Music and Performing Arts, 2012.
Deniz Atlı, M.A., Faculty of Art Design and Environmental Design, Lighting Desing, Bilkent University, 2000.
Azade Bağırov, B.M., Piano, Azerbaijan State Conservatory, 1979.
Nurlan Bağırov, M.M., Piano, Bilkent University, 2010.
Gülnara Bahşiş, M.M., Piano, Taşkent Conservatory, 1983.
Hanife Ezgi Demirel, M.M., Piano, University of Texas at Austin Butler School of Music, 2015.

Fatma Neslihan Ekmekcioğlu, Ph.D., English Language and Literature, Hacettepe University, 1993.
Cem Emüler, M.A., Acting, Hacettepe University, 1987.
Elif Enacar, M.M., Chamber Music, Bilkent University, 1995.
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Hazal Evruk, B.M., Piano, Bilkent University, 2011.
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Rafet Onur Kırdar, M.M., Chours, Gazi University Institute of Educational Sciences, 2013.
Hayriye Fulya Koçak Yeşilkaya, B.M., Performing Arts, Bilkent University, 1998.
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Erdal Küçükkömürcü, B.A., Acting, Hacettepe University, 1980.
Zeynep Ekin Öner, M.A., Acting, Hacettepe University, 2002 .
Cem Önertürk, Ph.D., Proficiency in Art, Flute, Bilkent University, 2013.
Özcan Özer, M.A., Russian Language and Literature, Ankara University,1975.
Ksenia Prostitova, B.M., Piano, Krasnoyarsk Music and Theater Conservatory, 2006.
Rustam Rahmedov, B.M., Piano, Turkmen National Conservatory, 2013.
Nino Skhvitaridze, B.M., Musicology and Theory of Music, Tbilisi “V. Saracisvili” Conservatory 1986.
Gölge Şekeranber, B.M., Singing, Ankara State Conservatory, 1973.
Evin Tan, B.M., Piano, Hacettepe University, 2006.
Ali Tayla, M.A., Fencing, National Sports Academy of France, 1975.
Ayhan Uştuk, M.M., Singing, Accademia D’arte Lirica di Osimo, 1993.
İlham Yazar, B.A., Acting, Hacettepe University, 1989.

DEPARTMENT OF MUSIC

K. Korad (Chair), F. Abdullaeva, S. Ahundzade, S. Akçora, E. Akyol, S. Akyol, D. Ali, G. Altay, Y. Aydın, E. N. Aykal, G. Aykal, A. Azikeyeva Ateşoğlu, A. Aziz, A. Babacan, R. Bağırov, S. Bezhani, C. Cafer, N. N. Cetiz, V. Çavuşoğlu, S. Defne, E. Delikçi, D. Eryılmaz Pöğün, O. Evruk, S. Gagua, D. Gani, S. Gayıblı, E. Gnezdilova, M. A. Görmüşoğlu, F. Gülmehmet, C. Güngör, L. Gyarmati, H. E. Hacat, S. C. Hakioğlu, Y. Han, H. Hoxha, N. İspir, G. Kırtıl, K. Konyarov, A. Krumova Sezer, V. Kudinova, B. Kutay, N. Lobacheva Babatash, J. Lupu, V. E. Lupu, S. Margulis, A. Mecid, A. Medvedev, İ. Mehmet, I. Metin, A. Möhsünoğlu, N. Murakami, I. Nikotina, M. Nowotna, B. Noyan, İ. Okeev, E. Onay, G. Onay, E. Postnova, A. Rahmatulla, S. Rasul, U. Rishi, E. Rykhsiyeva, B. Simolin, S. Smolin, E. Tandoğan, V. Tokdemir, Z. Tsitsuashvili, O. Türkmen, Y. Ülgen, L. Volkov, T. T. Yayalar, R. Zamanalioğlu, Z. Zempleni.

Part-time: S. Ağır, Ü. Akbaş, A. Bağırov, N. Bağırov, G. Bahşiş, H. E. Demirel, E. Enacar, H. Evruk, Z. M. Gökoğlu, B. Kayabınar, R. O. Kırdar, Y. Konya, C. Önertürk, K. Prostitova, R. Rahmedov, N. Skhvitaridze, G. Şekeranber, E. Tan, A. Uştuk.

The Faculty's departments are today internationally renowned for their excellence in education, international artistic ensembles and activities. Since its founding the main objective has been to train artists, educators and researchers with high creative and interpretative skills in various fields of music.

In addition to the undergraduate and graduate programs, preparatory primary and high schools for music were also founded with the aim of starting music education at the earliest possible age. In order to expand music education to everyone, regardless of age and profession, programs such as the Early Music Training Program for children and "Part-time Music Education" have been ongoing since its founding. Graduate programs cover studies in "music performance and interpretation" in all majors, "music theory" and "music composition".

The Music Department offers Bachelor of Music-B.M., Master of Music-M.M., Proficiency in Art in Music degrees in the following programs and fields;

Theory and Composition Option - B.M., M.M., Pr.A.M.
Music Theory, Composition.

Instrument Option - B.M., M.M., Pr.A.M.
Piano, Classical Guitar, Percussion,
Violin, Viola, Violoncello, Double Bass,
Flute, Oboe, Clarinet, Bassoon, Horn, Trumpet, Trombone, Tuba.

Amongst numerous artistic activities of the faculty are the "International Chopin Piano Competition" 1999 and the "International Theater Meeting" 1998. Since 2001, the students of the music department won many prizes in national and international competitions including "Sarasate", "Palmerès du 30^{e}. Concours Intternational de Musique et d'Art Sonore Electroacoustiques", IBLA. In 2003, the Bilkent Youth Choir won a gold medal in the 21st International Preveze Choir Contest and achieved the runner-up position in the 33rd Florilège Vocal de Tours 2004 competition in France. The Bilkent Youth Symphony Orchestra has partnered with international ensembles such as World Youth Orchestra, the Greek-Turkish Youth Orchestra and has participated in festivals such as the Young Euro Classic.

Bilkent Symphony Orchestra

The Bilkent Symphony Orchestra was founded in September 1993. The orchestra is composed of experienced artists from various countries as well as Turkish. With these characteristics the Bilkent Symphony Orchestra, is the first private, academic and international artistic group in Turkey.

With an average of 50 events each season and the participation of Turkish and foreign conductors,

soloists and choirs, the orchestra aims to bring a wide range of activities to large audiences; to spread the appreciation of music at the national level through its tours; to undertake international activities and develop cooperation with institutions abroad organizing such events; and to form a bridge of artistic communication with other countries.

Along these objectives the orchestra has toured Italy, Germany, Belgium, Portugal, Switzerland and Japan. The orchestra has recorded over 40 CDs with labels such as BMP, NAXOS and EMI.

UNDERGRADUATE PROGRAM

COMPOSITION OPTION

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MSC 101	Department Seminar I	- / 1
MSC 111	Composition I	5 / 9
MSC 113	Techniques of Notation and Instrumentation	3 / 4
MSC 171	Theory I: Fundamentals	3 / 5
MSC 173	Origins of Western Music: From Antiquities to Baroque	3 / 5
MSC 181	Ear Training I	3 / 4
MSC 183	Keyboard Skills I	2 / 2

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MSC 100	Freshman Concert	- / 1
MSC 102	Department Seminar II	- / 1
MSC 112	Composition II	5 / 9
MSC 114	Fundamentals of Orchestration	3 / 4
MSC 172	Theory II: Harmony and Voice Leading	3 / 5
MSC 174	Opera and Instrumental Music in the Baroque Period	3 / 5
MSC 182	Ear Training II	3 / 4
MSC 184	Keyboard Skills II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HCIV 101	History of Civilization I	3 / 6
MSC 201	Department Seminar III	- / 1
MSC 211	Composition III	5 / 9
MSC 213	Advanced Orchestration I	3 / 5
MSC 271	Theory III: Modal Counterpoint	3 / 5
MSC 273	Music in Europe during the Age of the Enlightenement	3 / 5
MSC 281	Ear Training III	3 / 4
MSC 283	Keyboard Skills III	2 / 2

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
HCIV 102	History of Civilization II	3 / 6
MSC 200	Sophomore Concert	- / 1
MSC 202	Department Seminar IV	- / 1
MSC 212	Composition IV	5 / 9
MSC 214	Advanced Orchestration II	3 / 5
MSC 272	Theory IV: Classical Form	3 / 5
MSC 274	19th Century Music and Modernity	3 / 5
MSC 282	Ear Training IV	3 / 4
MSC 284	Keyboard Skills IV	2 / 2

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
MSC 301	Department Seminar V	- / 1
MSC 311	Composition V	5 / 9
MSC 315	Score Reading I	3 / 4
MSC 321	Tonal Counterpoint	3 / 6
MSC 323	Theory and Analysis of Sonata Forms	3 / 6
MSC 373	History of 20th Century Music	3 / 6
	Elective Language	3 / 6

Spring Semester		Credits / ECTS Credits
HIST 200	History of Turkey	4 / 8
MSC 300	Junior Concert	- / 1
MSC 302	Department Seminar VI	- / 1
MSC 312	Composition VI	5 / 9
MSC 316	Score Reading II	3 / 4
MSC 322	Post - Tonal Theory	3 / 6
MSC 324	Form and Chromatic Harmony in 19th Century Music	3 / 6
MSC 326	Conducting I	3 / 4
MSC 374	Traditional Turkish Music and Divan Music	3 / 5
	Elective Language	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
MSC 401	Department Seminar VII	- / 1
MSC 411	Composition VII	5 / 9
MSC 415	Score Reading III	3 / 4
MSC 421	Theory and Analysis of Contemporary Music	3 / 6
MSC 425	Conducting II	3 / 4
MSC 473	Contemporary Turkish Music	3 / 6
TURK 101	Turkish I	2 / 2
	Elective	3 / 6
	Elective Language	3 / 6

Spring Semester		Credits / ECTS Credits
MSC 400	Senior Concert	- / 1
MSC 402	Department Seminar VIII	- / 1
MSC 412	Graduation Composition Project	6 / 9
MSC 416	Score Reading IV	3 / 4
TURK 102	Turkish II	2 / 2
	Electives (2)	6 / 12
	Elective Language	3 / 6

INSTRUMENT OPTION

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MSC 101	Department Seminar I	- / 1
MSC 103	Orchestra/Ensemble I	2 / 3
MSC 131	Instrument I	5 / 10
MSC 133	Chamber Music I	3 / 5
MSC 171	Theory I: Fundamentals	3 / 5
MSC 173	Origins of Western Music: From Antiquities to Baroque	3 / 5

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MSC 100	Freshman Concert	- / 1
MSC 102	Department Seminar II	- / 1

MSC 104	Orchestra/Ensemble II	2 / 3
MSC 132	Instrument II	5 / 10
MSC 134	Chamber Music II	3 / 5
MSC 172	Theory II: Harmony and Voice Leading	3 / 5
MSC 174	Opera and Instrumental Music in the Baroque Period	3 / 5

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HCIV 101	History of Civilization I	3 / 6
MSC 201	Department Seminar III	- / 1
MSC 203	Orchestra/Ensemble III	2 / 3
MSC 231	Instrument III	5 / 10
MSC 233	Chamber Music III	3 / 5
MSC 271	Theory III: Modal Counterpoint	3 / 5
MSC 273	Music in Europe during the Age of the Enlightenement	3 / 5

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
HCIV 102	History of Civilization II	3 / 6
MSC 200	Sophomore Concert	- / 1
MSC 202	Department Seminar IV	- / 1
MSC 204	Orchestra/Ensemble IV	2 / 3
MSC 232	Instrument IV	5 / 10
MSC 234	Chamber Music IV	3 / 5
MSC 272	Theory IV: Classical Form	3 / 5
MSC 274	19th Century Music and Modernity	3 / 5

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
MSC 301	Department Seminar V	- / 1
MSC 303	Orchestra/Ensemble V	2 / 3
MSC 331	Instrument V	5 / 10
MSC 333	Chamber Music V	3 / 5
MSC 373	History of 20th Century Music	3 / 6
	Elective	2 / 6
	Elective Language	3 / 6

Spring Semester		Credits / ECTS Credits
HIST 200	History of Turkey	4 / 8
MSC 300	Junior Concert	- / 1
MSC 302	Department Seminar VI	- / 1
MSC 304	Orchestra/Ensemble VI	2 / 3
MSC 332	Instrument VI	5 / 10
MSC 334	Chamber Music VI	3 / 5
MSC 374	Traditional Turkish Music and Divan Music	3 / 5
	Elective	3 / 6
	Elective Language	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
MSC 401	Department Seminar VII	- / 1
MSC 403	Orchestra/Ensemble VII	2 / 3
MSC 431	Instrument VII	5 / 10
MSC 433	Chamber Music VII	3 / 5
MSC 473	Contemporary Turkish Music	3 / 6
TURK 101	Turkish I	2 / 2
	Elective	3 / 6

	Elective	2 / 6
	Elective Language	3 / 6

Spring Semester Credits / ECTS Credits

MSC 400	Senior Concert	- / 1
MSC 402	Department Seminar VIII	- / 1
MSC 404	Orchestra/ Ensemble VIII	2 / 3
MSC 432	Graduation Recital	6 / 10
MSC 434	Chamber Music VIII	3 / 5
TURK 102	Turkish II	2 / 2
	Elective	2 / 6
	Elective	3 / 6
	Elective Language	3 / 6

MINOR PROGRAM

The program is designed to offer a single track combining applied training and studies in music. Applied courses consist of individual studies on instrument performance and stage performance practices. These courses are carried out one on one with FMPA faculty and artists. Skills to be acquired and experience to be gained from applied courses are expected to be of influence on personal development of students in other areas as well. Potential of musical development of each student sets the standard for each course. Courses on music studies subjects are also offered to supplement the applied courses and to offer scholarly knowledge on the science of music. Applied courses are scheduled with the instructor to suit the availabilities of each student. Other courses are taken together with Music major students.

Prerequisite Courses: None

CURRICULUM

Courses Credits / ECTS Credits

MSC 105	Ear Training for Non-Majors I	2 / 2
MSC 106	Ear Training for Non-Majors II	2 / 2
MSC 107	Individual Music Studies	2 / 4
MSC 108	Individual Music Studies II	2 / 4
MSC 207	Individual Music Studies III	2 / 4
MSC 208	Individual Music Studies IV	2 / 4
	Elective(Any MSC course)	3 / 6

GRADUATE PROGRAM

The aim of the graduate program is to train professional artists in the areas of performance, creativity and research. Students have the opportunity to study and develop under the guidance of internationally renowned artists at the Faculty, and to display their development professionally through presentations, recitals, concerts as well as live and studio recordings. Music Performance and Interpretation majors are invited for selected events to perform with the Bilkent Symphony Orchestra and Composition majors works are widely presented by the Faculties professional ensembles.

These public appearances and recordings are organized by the Faculty of Music and Performing Arts to equip the student with advanced professional experience, thereby widening their horizons in the artistic world. Ph.D. candidates are offered a program that emphasizes research in addition to music performance and creation.

The graduate program offers the following degrees in various fields and majors. Courses and requirements are also listed below. (Also refer to the "Graduate Admissions" section in the introduction of this catalog for the general graduate admission requirements.)

Admission requirements common to programs include a Bachelor's degree (non-music majors accepted) with a standing of 3.00 CGPA for scholarship applicants. English Language Proficiency, Reference letters, Admission Interview, Admission Recital, Composition or Theory Portfolio Review, Music Theory and History Assessment.

Master of Music in Music Performance and Interpretation (M.M.)

Program offers a single track curriculum comprising major fields in; Flute, Oboe, Clarinet, Bassoon, Horn, Trumpet, Trombone, Tuba, Percussion, Harp, Piano, Classical Guitar, Violin, Viola, Violoncello, Double-bass, Operatic Voice and Chamber Music.

CURRICULUM

Courses		Credits / ECTS Credits
GE 590	Academic Practices	- / 12
MSG 500	Department Seminar	- / 1
	Department Electives (2)	6 / 12
	Group I Restricted Electives (8)	24 / 48
	Non-Departmental Elective	3 / 6

Degree Requirements

Standing : 3.00 CGPA

Requirement : Minimum grade of "B" from MSG 541 jury assessed lecture-concert performance and recording.

Thesis : Not applicable.

Proficiency in Art in Music

Program offers tracks in:

- Music Composition
- Music Theory
- Music Performance and Interpretation in; Conducting, Flute, Oboe, Clarinet, Bassoon, Horn, Trumpet, Trombone, Tuba, Percussion, Harp, Piano, Classical Guitar, Violin, Viola, Violoncello, Double-bass, Operatic Voice, Chamber Music.

The Composition track and the Music Theory track do not comprise pre-determined fields or areas. Proficiency Thesis of each student determines area of study and research. Music Performance and Interpretation track research requirement or thesis does not need to possess direct correspondence with the candidate's field or major.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
MSC 550	Department Seminar	- / 1
MSC 699	Ph.D. Dissertation	- / 100
	Department Electives (2)	6 / 12
	Group II Restricted Electives (6)	18 / 36
	Non-Departmental Elective	3 / 6

Degree Requirements

Standing : 3.00 CGPA

Requirements : Minimum grade of "A" from MSG 541 or MSG 527 and MSG 741 or MSG 745 jury assessed lecture-concert performance and recording.

Proficiency examination.

Dissertation proposal evaluation.

Publication : The Journal must be listed, as of the submission date of the article in the Institute for Scientific Information's (ISI) Science Citation Index, Social Science Citation Index and Arts & Humanities Citation Index, or in the department's journal list.

Thesis : Submission and assessment of dissertation.

GROUP I RESTRICTED ELECTIVES

MSC 511	Music Performance and Interpretation I	3 / 10
MSC 513	Music Composition I	3 / 10
MSC 515	Music Theory	3 / 9
MSC 517	Tonal Music Topics and Analysis	3 / 6
MSC 521	Master's Lecture Recital	3 / 10
MSC 525	Bilkent Ensembles	3 / 6
MSC 527	Masters Theory Presentation	3 / 9
MSC 530	Professional Concert Project	- / 15
MSC 531	Music Performance and Interpretation II	3 / 10
MSC 535	Contemporary Instrumentation and Performance Parctice	3 / 6
MSC 537	Studies in History of Western Music	3 / 6
MSC 541	Master's Final Concert	3 / 10
MSC 577	Symphony after Beethoven	3 / 6

GROUP II RESTRICTED ELECTIVES

MSC 551	Music Performance and Interpretation	3 / 15
MSC 553	Music Composition	3 / 11
MSC 561	Music Performance and Interpretation	3 / 15
MSC 563	Music Composition	3 / 11
MSC 567	New Music Topics and Analysis	3 / 6
MSC 571	Contextual Perspectives in History of Western Music	3 / 6
MSC 581	Music Performance and Interpretation	3 / 15
MSC 583	Music Composition	3 / 11
MSC 691	Doctoral Lecture Concert	3 / 15
MSC 693	Doctoral Professional Recital	- / 15
MSC 695	Doctoral Proficiency Concert	3 / 15

DEPARTMENT ELECTIVES

MSC 568	Theoretical Studies in Tonal Music	3 / 6
MSC 569	History of Tonal Music Theory	3 / 6
MSC 570	Introduction to Schenkerian Analysis	3 / 6
MSC 572	Perspectives in Musical Analysis	3 / 6
MSC 577	Symphony after Beethoven	3 / 6
MSC 578	History of Stage Music	3 / 6
MSC 579	The Genre of Concerto	3 / 6
MSC 580	Topics in Contemporary Turkish Music	3 / 6
MSC 584	Music of the Last Decade	3 / 6
MSC 585	Opera in the 20th Century	3 / 6
MSC 586	Microtonality	3 / 6
MSC 587	Introduction to Electronic Music	3 / 6

Graduate Elective: Any 5xx coded Bilkent course with 3 credits.

COURSE DESCRIPTIONS

MSC 100 Freshman Concert
Concert project presenting works from fall and spring semesters. Event arranged and held by students. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (S. Ağır, Y. Aydın, C. Güngör, A. Krumova Sezer, C. Önertürk, E. Postnova, E. Tandoğan, O. Türkmen)*

MSC 101 Department Seminar I
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (T. T. Yayalar)*

MSC 102 Department Seminar II
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 101. Aut (Staff) Spr (Staff)*

MSC 103 Orchestra/Ensemble I
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3. Aut (R. O. Kırdar, I. Metin)*

MSC 104 Orchestra/Ensemble II
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 103. Spr (I. Metin)*

MSC 105 Ear Training for Non-Majors I
Fundamental properties of sound, elementary acoustics. Basic structural elements of music. Music notation: time and pitch, rhythm, meter, tempo, musical time, staff, solfege syllables, accidentals. Designation of pitch, duration, tempo, expressions and dynamics. Intervals and scales. Methods of musical dictation: Basic reading skills. One part solo solfege. *Credit units: 2 ECTS Credit Units: 2.*

MSC 106 Ear Training for Non-Majors II
Chords. Designation of chords. Written and aural exercises on these subjects. Dictation of two period one-part, two-part 16 measures dictees containing mixed rhythms, syncopation. Introduction to collective solfege. The solo and collective musical reading. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 105. Spr (M. Nowotna)*

MSC 107 Individual Music Studies
To aid the multi-disciplinary education aim of the University, the instrument courses are offered to all non-majors as elective courses. Students wishing to enroll go through an admission process in which their music abilities are examined. The course is offered for various instruments including flute, clarinet, trumpet and trombone. *Credit units: 2 ECTS Credit Units: 4.*

MSC 108 Individual Music Studies II
To aid the multi-disciplinary education aim of the University, the instrument courses are offered to all non-majors as elective courses. Students wishing to enroll go through an admission process in which their music abilities are examined. The course is offered for various instruments including flute, clarinet, trumpet and trombone. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: MSC 107.*

MSC 110 Music Appreciation
Exploration of the basic building blocks of music. From physics of sound to higher level concepts such as harmony, rhythm and form. Discussions about perception and reception of music. Concepts developed through projects and concert reviews. *Credit units: 3 ECTS Credit Units: 4.*

MSC 111 Composition I
Introduction to composition. Single musical idea applications for choices of solo instruments. Composition dossier consisting of pieces with total duration no less than 5 minutes. Students expected to analyze their works before a jury at the final examination. *Credit units: 5 ECTS Credit Units: 9. Aut (Staff) Spr (Y. Aydın, O. Türkmen)*

MSC 112 Composition II
Compositions for small-scale chamber music ensembles such as duos or trios. Introduction to composing contrasting material from single musical ideas. Dossier of pieces with total duration no less than 5 minutes. Students are expected to analyze their works before a jury at the final examination. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 111.*

MSC 113 Techniques of Notation and Instrumentation
A detailed overview of conventional and contemporary notational techniques, writing idiomatically for instruments. *Credit units: 3 ECTS Credit Units: 4. Aut (I. Metin)*

MSC 114 Fundamentals of Orchestration
Orchestrational styles and techniques of the 18th and early 19th centuries. Representative scores from the literature and assignments in scoring for various instrumental ensembles. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 113.*

MSC 131 Instrument I
Basic principles of professional interpretation through the establishment of professional study techniques. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 10. Aut (C. Güngör, Y. Han, A. Krumova Sezer, C. Önertürk, E. Postnova)*

MSC 132 Instrument II
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 131. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 131. Aut (Staff) Spr (C. Güngör, A. Krumova Sezer, C. Önertürk, E. Postnova)*

MSC 133 Chamber Music I
Score analysis, discussion and study of various composers' principal chamber works. Comparison of formal characteristics, scoring, and compositional practices. Performance of the repertoire consisting of baroque to pre-classic era with particular emphasis on the works of Boccherini, Hummel and Stamitz with various chamber ensembles consisting of various instruments. *Credit units: 3 ECTS Credit Units: 5. Aut (S. Ağır, A. Azikeyeva Ateşoğlu, O. Evruk, N. Murakami, Y. Ülgen, Z. Zempleni)*

MSC 134 Chamber Music II
Analysis and application of the interpretative styles of the selected repertoire. Practices on the selected repertoire towards achieving unity and balance in performance. Pre-classic to classic repertoire consisting mainly of Haydn's early quartets, trios and Beethoven's duo and trios. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 133. Aut (Staff) Spr (N. Murakami, Z. Zempleni)*

MSC 171 Theory I: Fundamentals
Fundamentals of music theory: elements of pitch and rhythm, triads and seventh chords, chord-labeling. Fundamentals of voice-leading and consonant harmony: principles of voice-leading, part-writing for triads in root-position and inversion, harmonic progression and the sequence. Cadences, small formal units, and non-chord-tones. *Credit units: 3 ECTS Credit Units: 5. Aut (Y. Aydın)*

MSC 172 Theory II: Harmony and Voice Leading
Dissonant harmony: the dominant seventh chord and other types of seventh chords in context, secondary functions and modulation. Harmonic analysis of Bach chorales. Overview of larger forms. Chromaticism: mode mixture and the Neapolitan, augmented-sixth chords, enharmonicism. Further elements of harmonic vocabulary: substitution, alteration, dominant ninth chord, common-tone diminished seventh chord, elements of post-romantic vocabulary and beyond, etc. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 171. Spr (Y. Aydın)*

MSC 173 Origins of Western Music: From Antiquities to Baroque
A general view of the content and frontiers of different periods in Western Music History. Music in Antiquity. Roman Liturgy. The genesis of polyphony. Ars nova. Ars subtilior. Burgundy in the Fifteenth Century. Franco-Flemish Composers. Reformation. Instrumental music during the age of Renaissance. *Credit units: 3 ECTS Credit Units: 5. Aut (O. Türkmen)*

MSC 174 Opera and Instrumental Music in the Baroque Period
Florentine Camerata. Birth of Opera. Early Baroque vocal music genres. Early Baroque instrumental music genres. Monteverdi Operas. Opera in Rome, Venice and Naples in seventeenth century. Development of keyboard music in the late seventeenth century. The evolution of sonata. Genesis of Orchestral Music during the late seventeenth century. The evolution of concerto. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 173. Spr (O. Türkmen)*

MSC 181 Ear Training I
Music notation: time and pitch, rhythm, meter, tempo, musical time, staff, solfege syllables, accidentals. Designation of pitch, duration, tempo, expressions and dynamics. Intervals, scales and modes. Polyphonic and harmonic approach. Chords. Dictation exercises. *Credit units: 3 ECTS Credit Units: 4.*

MSC 182 Ear Training II
Tonal functions. Style, phrasing and articulation, abbreviations. Basic triads and their inversions. Seventh chords and their inversions. Ninth chords. Modulation. Secondary degrees. Melody writing. Cadences. Transposition. Written and aural exercises on these subjects. Dictation exercises. Clefs. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 181.*

MSC 183 Keyboard Skills I
Basic to intermediate skills of piano playing. Piano as an auxiliary instrument. Sight reading at the piano. Basic methods of realization as defined by O. Gartenlaub. Selected repertoire listing to be performed progressively throughout the semesters. *Credit units: 2 ECTS Credit Units: 2. Aut (Staff) Spr (Y. Han)*

MSC 184 Keyboard Skills II
Further study to enhance the skills gained in MSC 183 on a new repertoire. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 183.*

MSC 200 Sophomore Concert
A yearly recital project for the Instrument and Singing option students. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 100. Aut (Staff) Spr (S. Ağır, D. Ali, E. Delikçi, J. Lupu, E. Tandoğan, T. T. Yayalar)*

MSC 201 Department Seminar III
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 102. Aut (Staff)*

MSC 202 Department Seminar IV
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 201. Aut (Staff) Spr (G. Şekeranber)*

MSC 203 Orchestra/Ensemble III
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3. Aut (R. O. Kırdar, I. Metin)*

MSC 204 Orchestra/Ensemble IV
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 203. Aut (I. Metin) Spr (R. O. Kırdar, I. Metin)*

MSC 207 Individual Music Studies III
To aid the multi-disciplinary education aim of the University, the instrument courses are offered to all non-majors as elective courses. Students wishing to enroll go through an admission process in which their music abilities are examined. The course is offered for various instruments including flute, clarinet, trumpet and trombone. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: MSC 108.*

MSC 208 Individual Music Studies IV
To aid the multi-disciplinary education aim of the University, the instrument courses are offered to all non-majors as elective courses. Students wishing to enroll go through an admission process in which their music abilities are examined. The course is offered for various instruments including flute, clarinet, trumpet and trombone. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: MSC 207. Spr (G. Şekeranber)*

MSC 211 Composition III
Composition for small-scale chamber music ensembles such as quartets. Analysis of similar structures from a broad chronology corresponding with own work. Dossier including completed works of contrasting and related musical ideas with total duration no less than 7 minutes. Students expected to defend their works at the final jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 112. Aut (T. T. Yayalar)*

MSC 212 Composition IV
Composition for large-scale chamber music ensembles of at least five musicians. Dossier including completed works of at least one single movement with total duration no less than 10 minutes. Students are expected to defend their works at the final jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 211. Spr (T. T. Yayalar)*

MSC 213 Advanced Orchestration I
Advanced topics in orchestration focusing on 19th century techniques and conventions. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 114. Aut (I. Metin)*

MSC 214 Advanced Orchestration II
Advanced topics in orchestration focusing on 20th century techniques and conventions. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 213. Aut (Y. Aydın) Spr (Y. Aydın, I. Metin)*

MSC 231 Instrument III
Focusing on musicality and mechanical facilities. Comprehension of compositional procedures. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 132. Aut (S. Ağır, D. Ali, E. Tandoğan)*

MSC 232 Instrument IV
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 231. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 231. Aut (N. N. Cetiz, O. Evruk, J. Lupu, C. Önertürk) Spr (S. Ağır, D. Ali, E. Tandoğan)*

MSC 233 Chamber Music III
Performance of the classic era repertoire consisting of works by Beethoven, Mozart and Schubert. Group study on the pieces towards achieving professionalism in the technique of ensemble playing. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 134. Aut (S. Ağır, A. Azikeyeva Ateşoğlu, B. Kutay, Y. Ülgen)*

MSC 234 Chamber Music IV
Performance of the classic era repertoire consisting of works by Schubert and Beethoven. Group study on the pieces towards achieving brilliance in balance and unity of the ensemble. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 233. Aut (S. Ağır, N. Murakami, Z. Zempleni) Spr (S. Ağır, N. N. Cetiz, E. Tandoğan)*

MSC 251 Singing Voice III
Focusing on musicality and mechanical facilities. Comprehension of compositional procedures. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 152. Aut (Staff)*

MSC 252 Singing Voice IV
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 251. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 251.*

MSC 253 Opera Studies I
Major works of opera repertoire performed in collaboration with Bilkent Youth Symphony Orchestra. *Credit units: 1 ECTS Credit Units: 2. Aut (Staff)*

MSC 254 Opera Studies II
Cornerstone works of opera repertoire are performed in collaboration with Bilkent Youth Symphony Orchestra. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: MSC 253.*

MSC 271 Theory III: Modal Counterpoint
Sixteenth century polyphony with a module for harmony review. Advanced chromatic harmony: bass and soprano harmonization with larger and more difficult examples, review of chromaticism, enharmonicism, and alteration in more diversified and complex environments. Counterpoint: two-and three-part species and free counterpoint, imitation. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 172. Aut (Y. Aydın)*

MSC 272 Theory IV: Classical Form
Instrumental forms in Classical Style with a short introduction to twentieth century music. Form and analysis: some contrapuntal forms and the fugue. Formal elements in the instrumental music of the classical era. Tight-knit themes, looser formal regions, full-movement forms such as sonata form, slow-movement forms, minuet/trio form, rondo forms, and concerto form. Some vocal forms and the lied. Ostinato forms, variations, suite. Overview on the practices of twentieth century music: new techniques and materials, post-tonal theory.
Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 271. Spr (Y. Aydın)

MSC 273 Music in Europe during the Age of the Enlightenement
Handel. Rameau. J.S.Bach. The age of enlightenment and early classical period. Italian Opera Buffa in the early classical period. Opera Seria. Gluck and the opera reform. Haydn. Mozart. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 174. Aut (O. Türkmen)*

MSC 274 19th Century Music and Modernity
Beethoven. Opera trends in the early nineteenth century. Hector Berlioz. Chamber and orchestral musical innovations of the nineteenth century. Nineteenth century Italian Opera. Verdi Operas. Birth of romantic German Opera. Richard Wagner. The German, Austrian and French composers of the late nineteenth century. French naturalism in Opera. Verismo opera. Nationalism in music and its new trends during late nineteenth century. Debussy. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 273. Spr (O. Türkmen)*

MSC 281 Ear Training III
Altered chords and chromaticism. Diatonic and chromatic modulation to relative and remote keys. Developing reading skills. Mixed clefs. *Credit units: 3 ECTS Credit Units: 4. Aut (Staff)*

MSC 282 Ear Training IV
Advanced dictation exercises. Advanced ear training for chromatic harmony and polyphony. Advanced reading skills. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 281. Aut (Staff)*

MSC 283 Keyboard Skills III
Progress of the skills acquired in the previous year. Progress of technique. The use of piano as an auxiliary instrument. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 184. Aut (Staff)*

MSC 284 Keyboard Skills IV
Basic to intermediate skills of piano playing. Piano as an auxiliary instrument. Sight reading at the piano. Basic methods of realization as defined by O. Gartenlaub. Selected repertoire listing to be performed progressively throughout the semesters. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 283. Aut (M. Nowotna)*

MSC 300 Junior Concert
A yearly recital project for the Instrument and Singing option students. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 200. Aut (Staff) Spr (I. Metin, G. Şekeranber, O. Türkmen, A. Uştuk)*

MSC 301 Department Seminar V
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 202. Aut (Staff) Spr (Staff)*

MSC 302 Department Seminar VI
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 301. Aut (Staff) Spr (Staff)*

MSC 303 Orchestra/Ensemble V
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 204. Aut (R. O. Kırdar, I. Metin) Spr (I. Metin)*

MSC 304 Orchestra/Ensemble VI
Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 303. Aut (Staff) Spr (R. O. Kırdar, I. Metin)*

MSC 311 Composition V
Vocal music composition and/or large chamber music ensemble consisting of at least eight musicians. Analysis of similar structures from a broad chronology corresponding with own work as well as current trends in composition. Dossier including completed work(s) with total duration no less than 15 minutes. Students are expected to defend their works at the final jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 212. Aut (I. Metin, O. Türkmen, T. T. Yayalar)*

MSC 312 Composition VI
As the core of composition studies in general becomes apparent at this stage, composition for large-scale music ensembles with an emphasis on achieving own original musical language is expected. Dossier including completed work(s) promising genuine original musical language with total duration no less than 15 minutes. Students are expected to defend their works at the final jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria as well as own musical language. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 311. Spr (I. Metin, O. Türkmen, T. T. Yayalar)*

MSC 315 Score Reading I
Introduction to score notion and its realization. Ancient clefs. Transposition. Realization of two part music with ancient clefs and transposing instruments. Musical texture. Sight reading music with more than two parts. Realization of easy to moderate difficulty scores with three and four parts with ancient clefs and transposing instruments where only up to two different transposing instruments co-exist. Realization of simple chamber music scores up to four parts. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 172. Aut (I. Metin)*

MSC 316 Score Reading II
Identifying musical lines in scores with various textures. Realization of music with four parts with crossing parts. Extended sight reading of repertoire examples up to moderate difficulty with five parts. Sight reading of multiple transposing instruments. Examples from brass and wind parts from late romantic works where at least three different transposing instruments co-exist. Transferring string ensemble textures to keyboard. Realization of scores with strings and up to two transposing parts. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 315. Aut (I. Metin) Spr (I. Metin)*

MSC 321 Tonal Counterpoint
Contrapuntal practices of the Baroque era, with special emphasis on imitation techniques and the "Art of Fugue". The style of J. S. Bach, his predecessors, contemporaries, and followers. Regular assignments, including composition exercises, as well as the analysis of short compositions in the related styles are compulsory. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 271. Aut (T. T. Yayalar) Spr (Y. Aydın)*

MSC 322 Post - Tonal Theory
In-depth survey of compositional styles and techniques of the first half of the 20th century. Traditional pitch-centered analysis, including set theory, as well as approaches focusing on rhythm, timbre, texture, and other elements. Concepts developed through intensive analysis and model compositions. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272. Spr (T. T. Yayalar)*

MSC 323 Theory and Analysis of Sonata Forms
Focus on the Classical style: Haydn, Mozart, Beethoven. A development of skills in analytical writing in music and a critical assessment of two analytical methodologies pertaining to sonata form: Hepokoski and Darcy's Sonata Theory and William Caplin's Formal Functions. Concepts developed through analysis and model composition. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272. Aut (T. T. Yayalar)*

MSC 324 Form and Chromatic Harmony in 19th Century Music
Exploration of chromatic harmony in 19th-century instrumental and vocal forms. Developments of sonata form after Beethoven. Concepts developed through analysis and model compositions. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272.*

MSC 326 Conducting I
Brief history of conducting. Posture, stance, movement, breath and primary gestures. Practical choral conducting techniques. Beating patterns of basic meters, with the hand and neutral, legato and light staccato variants. The preparatory beat. The hold and fermata. Starts and cues on all beats and off-beats. Tempo. Continuity. Conducting a chorale. Complex beating patterns, variants, starts, holds, cues. Advanced conducting techniques. Balance and expression. Expressive conducting. Basic analysis. Dealing with voices. Basic vocal techniques. Basic rehearsal techniques. Conducting a madrigal. Conducting plainchant. Soloists. Stage performance. Selected repertoire to be conducted and sight played at the piano. *Credit units: 3 ECTS Credit Units: 4. Aut (I. Metin)*

MSC 331 Instrument V
High level of musicality and technique in interpretation. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 232. Aut (N. N. Cetiz, E. Delikçi) Spr (N. N. Cetiz, O. Evruk, J. Lupu, C. Önertürk)*

MSC 332 Instrument VI
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 331. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 331. Aut (Staff) Spr (N. N. Cetiz, E. Delikçi)*

MSC 333 Chamber Music V
Performance of the early romantic era repertoire consisting of works by Schubert, Schumann and Mendelssohn. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 234. Aut (E. Delikçi) Spr (S. Ağır, N. N. Cetiz, E. Delikçi, N. Murakami, Z. Zempleni)*

MSC 334 Chamber Music VI
Analytic analysis of the repertoire and interpretation styles of the romantic and contemporary chamber music repertoire. Brahms's chamber compositions. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 333. Aut (N. Murakami) Spr (A. Azikeyeva Ateşoğlu, N. N. Cetiz)*

MSC 351 Singing Voice V
High level of musicality and technique in interpretation. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 252. Aut (G. Şekeranber)*

MSC 352 Singing Voice VI
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 351. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 351. Aut (A. Uştuk) Spr (G. Şekeranber, A. Uştuk)*

MSC 373 History of 20th Century Music
Mahler and Strauss in comparison. Igor Stravinsky. Post-modernism. Atonality. Serialism. Neo-classicism. Integral serialism. Indeterminacy. Timbre. Minimalism. Spectral music. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 274. Aut (O. Türkmen)*

MSC 374 Traditional Turkish Music and Divan Music
Social, historical and stylistic background of Classical Turkish Music. Basic elements of musical discourse. Makam, usul, sacred and secular forms, meşk and oral transmission, edvars and the traditional notion of

music theory, instruments, instrumental ensembles, vocal traditions. Discussions regarding the classical style and the social change. Some problematic frameworks: periodization of Classical Turkish Music, westernization and/or modernization, orientalism, nationalism, culture politics, ethnomusicology and anthropology, globalization. Problem of musical modernism and traditional resources, interaction between Classical and New Turkish Music and other contemporary/international styles. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 172 or MSC 174.*

MSC 383 Keyboard Skills V

Applied studies on string, wind, brass and percussion instruments. Basic skills of performance mechanics. Extended information on the instrument and its capabilities. Selected repertoire listing to be performed progressively throughout the semesters. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 283. Aut (M. Nowotna)*

MSC 384 Keyboard Skills VI

Applied studies on string, wind, brass and percussion instruments. Basic skills of performance mechanics. Extended information on the instrument and its capabilities. Selected repertoire listing to be performed progressively throughout the semesters. *Credit units: 2 ECTS Credit Units: 2, Prerequisite: MSC 383. Aut (Staff) Spr (M. Nowotna)*

MSC 386 Introduction to Composition

For students with little or no previous experience in composition. Exploration of ways of thinking about and organizing basic material elements such as melody, harmony, rhythm and timbre, as well as developing skills of score preparation and analytical listening. Exposition to a variety of ideas and techniques, based very broadly on Western "art" music of the 20th century, but not attempting to guide towards any particular style. The primary emphasis on process of learning through feedback, via individual and group meetings as well as frequent opportunities to hear compositional exercises performed and recorded. *Credit units: 3 ECTS Credit Units: 5.*

MSC 400 Senior Concert

A dossier consisting of all works presented in the composition course juries must include music for solo instruments, small and large-scale chamber ensembles, vocal music and orchestral music. The dossier including works totaling no less than one hour should be presented to the jury 10 working days prior to the graduation project concert. The composition student must organize a concert covering selection of his compositions. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 300. Aut (Staff) Spr (A. Aziz, N. N. Cetiz, O. Evruk, Z. M. Gökoğlu, Y. Han, G. Şekeranber)*

MSC 401 Department Seminar VII

Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1, Prerequisite: MSC 302. Aut (Staff) Spr (Staff)*

MSC 402 Department Seminar VIII

Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1. Aut (Z. M. Gökoğlu) Spr (Staff)*

MSC 403 Orchestra/Ensemble VII

Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 304. Aut (R. O. Kırdar, I. Metin) Spr (I. Metin)*

MSC 404 Orchestra/ Ensemble VIII

Compulsory performance course for all undergraduate students. Bilkent Youth Symphony Orchestra for instrument performance majors. Chorus for voice, composition and piano majors. Youth ensemble open to all majors and possibly offered on event project basis. Western classical music repertoire from Baroque to contemporary. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: MSC 403. Aut (R. O. Kırdar) Spr (R. O. Kırdar, I. Metin)*

MSC 411 Composition VII

Composition of a large-scale genuinely creative work for orchestra. Dossier of advanced sketches including orchestral fragments of work in progress. Students expected to present thorough domination on their work and use appropriate technical jargon while they defend their work at the final jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria as well as own musical language. *Credit units: 5 ECTS Credit Units: 9, Prerequisite: MSC 312. Spr (T. T. Yayalar)*

MSC 412 Graduation Composition Project

The work submitted at the final jury of composition vii should be completed. The work should portray originality and advanced skills on compositional technique, form and orchestration. Students are expected to present thorough domination on their work and use appropriate technical jargon while they defend their work at the final

jury in terms of intellectual approach, composition technique, orchestration, style, form and related criteria as well as own musical language. *Credit units: 6 ECTS Credit Units: 9, Prerequisite: MSC 411.*

MSC 415 Score Reading III
Realization of full scores up to late romantic period. Emphasis on developments in orchestration in the romantic period. Orchestral texture, timbre, balance and aural expectancy. Omission of orchestral doublings in piano realization and voice leading according to hand position. Textural transfer and playing a full score on piano. Applications on transcription. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 316. Aut (I. Metin)*

MSC 416 Score Reading IV
Realization of advanced full scores starting from late romantic period. Extended information on orchestral texture, timbre, sound balance and aural expectancy. Executing modern scores with extended technique on the piano. Transcriptions and prima vista practices. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 415. Spr (I. Metin)*

MSC 421 Theory and Analysis of Contemporary Music
In-depth survey of compositional styles and techniques of the second half of the 20th century. Topics of Post-serialism, New Complexity, Spectralism, Musique Concrete Instrumental, Micropolyphony, Aleatoric music, Chance music, Stochastic music and also more recent developments. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272.*

MSC 425 Conducting II
The baton. Basic beating patterns with the baton. Practical conducting techniques using the baton in all meters with neutral, legato and light staccato variants. The expressive hand. Conducting a string orchestra. Selected repertoire to be conducted and sight played on the piano. Methods of preparatory study. Rehearsal planning. Advanced beating patterns with the baton, combining meters. Dealing with solo passages.] Improvement of manual skills. Flow of movement. Methods on eye contact. Balance. The rehearsal versus the performance. Conducting a classical orchestra. Known intricacies of some important orchestral passages. Fundamentals of performance psychology on stage. Vocal versus instrumental. The soloist and accompaniment. Further study of rehearsal planning. Analysis of conducting styles. Concert and program planning. Selected repertoire to be conducted and sight played on the piano. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: MSC 326. Spr (I. Metin)*

MSC 431 Instrument VII
Maturity in every aspect of interpretation. Analysis of style and interpretation on pieces. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 10, Prerequisite: MSC 332. Aut (A. Aziz, O. Evruk, Y. Han) Spr (C. Güngör)*

MSC 432 Graduation Recital
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 431. Preparation and rehearsal of the graduation repertoire also including a must piece that is chosen by the graduation jury and submitted to each student two weeks prior to the graduation concert. *Credit units: 6 ECTS Credit Units: 10, Prerequisite: MSC 431. Aut (Staff) Spr (A. Aziz, O. Evruk, Y. Han)*

MSC 433 Chamber Music VII
Introduction to the chamber music compositions of Turkish Composers. Beethoven's late quartets. Study and practices with the aim of achieving maturity in stage performance. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 334. Aut (B. Kutay, Y. Ülgen) Spr (Staff)*

MSC 434 Chamber Music VIII
Analytic analysis and interpretation of the contemporary chamber music repertoire consisting of compositions by Dvorak, Shostakovich, Ravel, Debussy, Webern, Bartok, Saygun, Erkin. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: MSC 433. Aut (Staff)*

MSC 451 Singing Voice VII
Maturity in every aspect of interpretation. Analysis of style and interpretation on pieces. Selected repertoire listing to be performed progressively throughout the semester. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 352. Aut (Z. M. Gökoğlu, G. Şekeranber)*

MSC 452 Graduation Recital
The continuation of further studies on a new repertoire with the aim to achieve the artistic-technical goals presented in MSC 451. Preparation and rehearsal of the graduation repertoire also including a must piece that is chosen by the graduation jury and submitted to each student two weeks prior to the graduation concert. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: MSC 451. Aut (Z. M. Gökoğlu) Spr (Z. M. Gökoğlu, G. Şekeranber)*

MSC 453 Opera Studies III
Cornerstone works of opera repertoire are performed in collaboration with Bilkent Youth Symphony Orchestra. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: MSC 254. Aut (Staff)*

MSC 454 Opera Studies IV
Cornerstone works of opera repertoire are performed in collaboration with Bilkent Youth Symphony Orchestra. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: MSC 453. Aut (G. Şekeranber)*

MSC 459 Opera Studies V
Major works of opera repertoire performed. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: MSC 454. Aut (G. Şekeranber) Spr (G. Şekeranber)*

MSC 460 Opera Studies VI
Cornerstone works of opera repertoire are performed. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: MSC 459. Spr (G. Şekeranber)*

MSC 473 Contemporary Turkish Music
Sociopolitical, cultural, and stylistic background of New Turkish Music. European influenced music life, its styles and institutionalization in Turkey beginning with the late Ottoman era. Culture politics, statist music institutionalization, polyphonic styles in the early republican and the post-war Turkey. Acting on the fault lines: stylistic polarization among first two composer generations, alaturka-alafranga and monophony-polyphony debates, nationalization-globalization dilemma, battling paradigms of the Turkish-traditional versus the international-modernized. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 172 or MSC 174. Aut (Y. Aydın)*

MSC 474 Music of Igor Stravinsky
Studies on the Stravinsky's works with consideration of four different periods: Early pieces, Russian Phase, Neo-Classicism and Serialism. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272 or MSC 274. Spr (O. Türkmen)*

MSC 475 Symphonies of Gustav Mahler
Studies on Mahler's symphonies. Discussions on tonality, orchestration, process, form, transformation, programmaticism, quotation, post-modernism, modernism, Nietche, Schophenauer, Wagner, Beethoven, Adorno, Richard Strauss and Schoenberg. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 272 or MSC 274.*

MSC 476 Studies on Modality
Review of the theory and ear training of modes. Analyzing examples from Machaut, Dufay, Josquin, Greig, Mussorgsky, Debussy, Bartok, Samuel Barber. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 172.*

MSC 477 Contemporary Notational Techniques
Does notation reflect the actual composition that we have in mind? How much does music notation affect the actual performance? Can we increase our musical communication skills through notation? A brief historical overview on music notation. Basic notation principles and contemporary notation styles. The course focuses on handwriting skills (no notation software will be used). *Credit units: 3 ECTS Credit Units: 6.*

MSC 478 Source Readings in Music
Discussion group based on important writings and speeches in music history from ancient Greece through the twentieth century. Anthological readings on music and musical concepts throughout the ages. Active participation is required. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 274.*

MSC 479 Modern Music Before 1945
Music of fin de siecle and pre-war period in Europe and U.S.A. Observation of the artistic and socio-cultural environment of the related period. Samples of a broad spectrum of musical life in the twentieth century, including orchestral, choral, band, chamber music, and solo repertoire, both instrumental and vocal. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 274.*

MSC 480 Modern Music After 1945
A socio-historical view on the music of post-war generation in Europe and U.S.A. Focus on the major trends (such as of avant-gardism) and technical developments in music (such as serialism) of the related period. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 274.*

MSC 481 Contemporary Turkish Piano Music
General information on the musical styles of Rey, Erkin, Saygun and Akses. Observation on the development of the piano literature among these national composers. Detailed analysis and discussion group on the style and performance of the selected repertoire. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 274.*

MSC 482 Piano Literature
Survey of instruments historic development and its repertoire with emphasis on cornerstone works. Comparative listening to master artists' renditions their interpretations and style practices. Building programs for concerts, recitals, recordings, competitions. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MSC 172 or MSC 174.*

MSC 500 Department Seminar
Organized with the contribution of faculty, students, guest speakers to aid students in developing skills on verbalizing music, following current trends in composition, learning to approach music from different perspectives, getting to meet living composers and hear them talk about their own music. *Credit units: None ECTS Credit Units: 1.*

MSC 511 Music Performance and Interpretation I
Individual instruction on repertoire in music performance and interpretation. *Credit units: 3 ECTS Credit Units: 10.*

MSC 512 Conducting I
Individual instruction on instrumental and opera repertoire in conducting. *Credit units: 3 ECTS Credit Units: 10.*

MSC 513 Music Composition I
Individual instruction on musical composition to prepare original works. *Credit units: 3 ECTS Credit Units: 10.*

MSC 515 Music Theory
Musical analysis and writing skills of modal and tonal music subjects are taught individually. Consideration of varied analytical methods of musical analysis and history of music theory from Aristoxenus till Stockhausen on specialized topics determined by faculty. These provide to comprehend various research methods, analytical skills, writing skills and stylistic features of the related era on different perspectives. *Credit units: 3 ECTS Credit Units: 9.*

MSC 517 Tonal Music Topics and Analysis
Musical analysis of tonal music in the broadest sense, covering examples from the 17th century to the first decades of the 20th century. Consideration of varied analytical methods of musical analysis, emphasis on Schenkerian and Riemannian approaches on specialized topics determined by the faculty. *Credit units: 3 ECTS Credit Units: 6.*

MSC 521 Master's Lecture Recital
Lecture demonstration concert on a topic appropriate to the candidate?s major area of specialization. *Credit units: 3 ECTS Credit Units: 10.*

MSC 525 Bilkent Ensembles
Students actively participate in concert projects of one or more of Bilkent University's music ensembles such as Bilkent Symphony Orchestra, Bilkent Youth Quartet, Bilkent Chorus and Bilkent Modern Ensemble throughout the academic semester. *Credit units: 3 ECTS Credit Units: 6.*

MSC 527 Masters Theory Presentation
Students are expected to finalize and present part or all of their papers stated in MSG 515 at class(es) decided upon with the consent of the student's advisor. *Credit units: 3 ECTS Credit Units: 9.*

MSC 530 Professional Concert Project
Students are expected to repeat part or all of the recital stated in MSG 521 at a public venue decided upon with the consent of the student's advisor. *Credit units: None ECTS Credit Units: 15.*

MSC 531 Music Performance and Interpretation II
Individual instruction on repertoire in music performance and interpretation. *Credit units: 3 ECTS Credit Units: 10.*

MSC 532 Conducting II
Individual instruction on instrumental and opera repertoire in conducting. *Credit units: 3 ECTS Credit Units: 10, Prerequisite: MSC 512.*

MSC 533 Music Composition II
Individual instruction on musical composition to prepare original works. *Credit units: 3 ECTS Credit Units: 10, Prerequisite: MSC 513.*

MSC 535 Contemporary Instrumentation and Performance Parctice
Exploration of ideas in contemporary music performance, in diverse styles, through reading, playing, and writing. In-depth investigation of compositional ideas, playing techniques, approaches to sound, notation, performance venues, and new modes of interaction between composers, performers, and audiences. *Credit units: 3 ECTS Credit Units: 6.*

MSC 537 Studies in History of Western Music
Evolution of different musical genres through history. Advanced discussions on the genesis, development and contemporary applications of the specific genres. *Credit units: 3 ECTS Credit Units: 6.*

MSC 541 Master's Final Concert
A full-length concert as the culminating requirement for the master?s degree. *Credit units: 3 ECTS Credit Units: 10.*

MSC 550 Department Seminar
Weekly meetings hosted by faculty with visiting artists, scholars. Master-classes, workshops, presentations focusing on predetermined subjects. Each graduate student also prepares a presentation. *Credit units: None ECTS Credit Units: 1.*

MSC 551 Music Performance and Interpretation
Studies and practices on performance and interpretation of selected repertoire from all genres and periods involving major field. Course incorporates a wide range of repertoire such as solo, sonata, concerto as well as chamber music, ensembles, orchestral solos and excerpts for instrument performance majors. Lied, complete roles in operas for vocal majors. All choral, ensemble and orchestral repertoire for conducting majors as included in departmental repertoire lists. *Credit units: 3 ECTS Credit Units: 15, Prerequisite: MSC 511 and MSC 521.*

MSC 553 Music Composition
Music composition courses are taught individually. This provides flexibility in adapting to the interest and needs of each student. Composition courses have several purposes: to equip the student with necessary technical skills to develop their musical ideas, to help them get acquainted with the most recent compositional styles, and supply guidance with their projects. Each semester students will produce an original composition, culminating in a portfolio at the end of their Ph.D. studies. *Credit units: 3 ECTS Credit Units: 11, Prerequisite: MSC 513 and MSC 521.*

MSC 561 Music Performance and Interpretation
Studies and practices on performance and interpretation of selected repertoire from all genres and periods involving major field. Course incorporates a wide range of repertoire such as solo, sonata, concerto as well as chamber music, ensembles, orchestral solos and excerpts for instrument performance majors. Lied, complete roles in operas for vocal majors. All choral, ensemble and orchestral repertoire for conducting majors as included in departmental repertoire lists. *Credit units: 3 ECTS Credit Units: 15, Prerequisite: MSC 551.*

MSC 568 Theoretical Studies in Tonal Music
Analysis of music from the tonal repertoire by emphasis on structural aspects of each individual work. With discussions focusing on different analytical perspectives such as formalist methods, hermeneutics, phenomenology, Neo-Riemannian and cultural studies. *Credit units: 3 ECTS Credit Units: 6.*

MSC 571 Contextual Perspectives in History of Western Music
Credit units: 3 ECTS Credit Units: 6.

MSC 572 Perspectives in Musical Analysis
Credit units: 3 ECTS Credit Units: 6. Spr (I. Metin)

MSC 577 Symphony after Beethoven
Beethoven's 9th symphony, from its very first performance on, leads to a complicated reception history. Some major reactions, early and after, can be cited as follows: crisis of symphony in the German speaking culture domain, Berlioz's *symphonie fantastique* and Liszt's 12 *Poèmes symphoniques, drame lyrique* of Wagner -who considers himself as being brought to "the other side of the red sea" through Beethoven-, music-esthetic considerations like Brendel's *Zukunftsmusik* and the schism among absolute and programmatic music according to Hanslick, monumental symphonies by Bruckner and Mahler, symphonists and reactions to symphonic forms during the 20th century etc. Essayistic involvement in German and French by some 19th century composers like Schumann, Liszt, Wagner and Berlioz deserves a special attention regarding the problematic. Topics, readings and work selection of course are refreshed as per the specific phenomenon im Visier of current semester. *Credit units: 3 ECTS Credit Units: 6.*

MSC 579 The Genre of Concerto
Dynamics of the dispute between individual and community. Course deals with the genre concerto and its various aspects, each semester with respect to different criteria. Selection of music works to be considered depends on soloist instrument(s) and/or accompanying Besetzung, epoch, style, or (a group of) composer(s). *Credit units: 3 ECTS Credit Units: 6.*

MSC 581 Music Performance and Interpretation
Studies and practices on performance and interpretation of selected repertoire from all genres and periods involving major field. Course incorporates a wide range of repertoire such as solo, sonata, concerto as well as chamber music, ensembles, orchestral solos and excerpts for instrument performance majors. Lied, complete roles in operas for vocal majors. All choral, ensemble and orchestral repertoire for conducting majors as included in departmental repertoire lists. *Credit units: 3 ECTS Credit Units: 15.*

MSC 584 Music of the Last Decade
This is a course concentrating on music that is written in the last ten years. The goal of the course is to contextualize recent trends in composition and develop a framework necessary to understand and analyze representative examples from this period. *Credit units: 3 ECTS Credit Units: 6.*

MSC 585 Opera in the 20th Century
This is a seminar course examining the 20th century opera repertoire. We will investigate how the opera genre has transformed in the 20th century by looking at works like Pelléas et Mélisande, Bluebeard's Castle, Lulu, Saint François d'Assise, Le Grand Macabre, Einstein on the Beach, Punch and Judy. We will specifically investigate the conventions that the modern composers have inherited from the past, to reject or re-embrace. *Credit units: 3 ECTS Credit Units: 6.*

MSC 586 Microtonality
An in-depth investigation of different microtonal usages and techniques in composition. Topics will range from just intonation to different types of extended equal temperaments. We will also examine different practical strategies developed by composers in writing microtonal music. Each student will compose a piece using techniques covered in class. *Credit units: 3 ECTS Credit Units: 6.*

MSC 587 Introduction to Electronic Music
An elementary study of the scientific and technological basis for the electronic music medium, with emphasis on studio procedures and techniques. Study of relevant aspects of acoustic and electronic theory; repertoire since 1948 of music concrŁte, acousmatic, and live-electronic music; synthesis, sampling, digital recording, and live performance techniques. Hands-on work culminating in a final performance of individual projects. *Credit units: 3 ECTS Credit Units: 6.*

MSC 599 Master's Thesis
Independent work under the supervision of an advisor to produce a Master?s Thesis. *Credit units: None ECTS Credit Units: 56.*

MSC 691 Doctoral Lecture Concert
Students are expected to prepare and perform a major concert. The concert is preceded by a lecture by the student on works to be performed and their interpretation. Students with applied majors in instrument, vocal, conducting, chamber music and composition prepare their lecture concert program proposals with their respective advisers. Students are expected to submit their proposals to the department board prior to registering for the course and course may only be registered to upon the proposal of the advisor to and the final approval by department board of the lecture concert program proposal. Advisor and department board may choose to revise the student's proposal. Doctoral lecture recitals are held open to public. Assessment and grading is done by a jury selected by the department board. Department board may choose to utilize other means of assessment such as review of the performances recordings by peer or professionals in the field. *Credit units: 3 ECTS Credit Units: 15.*

MSC 693 Doctoral Professional Recital
Students are expected to repeat part or all of the recital stated in MSG 721 at a public venue decided upon with the consent of the student's advisor. The concert is preceded by a lecture by the student on works to be performed and their interpretation. Students with applied majors in instrument, vocal, conducting, chamber music and composition prepare their lecture concert program proposals with their respective advisers. Students are expected to submit their proposals to the department board prior to registering for the course and course may only be registered to upon the proposal of the advisor to and the final approval by department board of the lecture concert program proposal. Advisor and department board may choose to revise the student's proposal. Doctoral lecture recitals are held open to public. Assessment and grading is done by a jury selected by the department board. Department board may choose to utilize other means of assessment such as review of the performances recordings by peer or professionals in the field. *Credit units: None ECTS Credit Units: 15.*

MSC 695 Doctoral Proficiency Concert
Students are expected to prepare and perform a major recital and a graduation concert. The recital is preceded by a lecture by the student on works to be performed. Students with applied majors in instrument, vocal, conducting, chamber music and composition prepare their lecture recital and concert program proposals with their respective advisers. Students are expected to submit their proposals to the department board prior to registering for the course and course may only be registered to upon the proposal of the advisor to and the final approval by department board of the lecture concert program proposal. Advisor and department board may choose to revise the student's proposal. Doctoral lecture recitals are held open to public. Assessment and grading is done by a jury selected by the department board. Department board may choose to utilize other means of assessment such as review of the performances recordings by peer or professionals in the field. *Credit units: 3 ECTS Credit Units: 15, Prerequisite: (MSC 693 and MSC 581) or (MSC 693 and MSC 583). Spr (E. Postnova)*

MSC 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 100.

DEPARTMENT OF PERFORMING ARTS

J. E. Hale (Chair), D. J. Irizarry Osorio, T. T. Yayalar.

Part-time: D. Atlı, F. N. Ekmekcioğlu, C. Emüler, Ö. Ersönmez, M. Keskin Bayur, H. F. Koçak Yeşilkaya, E. Küçükkömürcü, Z. E. Öner, Ö. Özer, A. Tayla, İ. Yazar.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MSC 105	Ear Training for Non-Majors I	2 / 2
MSC 110	Music Appreciation	3 / 4
THR 101	Fundamentals of Acting I	4 / 8
THR 103	Voice and Speech I	3 / 6
THR 105	Movement and Combat I	3 / 7
THR 111	Phonetics I	2 / 4

Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MSC 106	Ear Training for Non-Majors II	2 / 2
MUSS 723	Singing for Theatre I	1 / 3
THR 102	Fundamentals of Acting II	4 / 8
THR 104	Voice and Speech II	3 / 6
THR 106	Movement and Combat II	3 / 7
THR 112	Phonetics II	2 / 4

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
GE 250	Collegiate Activities Program I	- / 1
HCIV 101	History of Civilization I	3 / 6
MUSS 724	Singing for Theatre II	1 / 3
THR 201	Acting I	4 / 8
THR 203	Voice and Speech III	3 / 6
THR 205	Movement and Combat III	3 / 7
THR 227	History of Theater I: Origins to Renaissance	3 / 5

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
HCIV 102	History of Civilization II	3 / 6
THR 202	Acting II	4 / 8
THR 204	Voice and Speech IV	3 / 6
THR 206	Movement and Combat IV	3 / 7
THR 228	History of Theater II: Renaissance to 20th Century	3 / 5
	Elective	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
THR 107	Dance I	2 / 3
THR 301	Acting III	4 / 8
THR 303	Voice and Speech V	3 / 6
THR 327	History of Theater III: 20th Century	3 / 5
THR 331	Textual Interpretation and Analysis I	3 / 6
	Elective	3 / 6

Spring Semester		Credits / ECTS Credits
THR 108	Dance II	2 / 3
THR 302	Acting IV	4 / 8

THR 332	Textual Interpretation and Analysis II	3 / 4
THR 428	History of Turkish Theater	3 / 4
	Elective	3 / 6
	Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
HIST 200	History of Turkey	4 / 8
THR 431	Textual Interpretation and Analysis III	3 / 4
THR 451	Senior Project I	5 / 12
TURK 101	Turkish I	2 / 2
	Elective	3 / 6

Spring Semester		Credits / ECTS Credits
THR 432	Textual Interpretation and Analysis IV	3 / 4
THR 452	Senior Project II	5 / 12
TURK 102	Turkish II	2 / 2
	Elective	3 / 6

COURSE DESCRIPTIONS

THR 101 Fundamentals of Acting I
This course is an introduction to the elements of performance, including exercises in concentration, sensory awareness, relaxation, communication, imagination, observation. It is based on the development of theatrical creativity through objectives, obstacles, action, conflict, spontaneity. It aims to develop an understanding of the dramatic situation. *Credit units: 4 ECTS Credit Units: 8. Aut (J. E. Hale, H. F. Koçak Yeşilkaya, E. Küçükkömürcü)*

THR 102 Fundamentals of Acting II
This module is the continuation of Fundamentals of Acting I and it emphasizes developing creative expression through theatre exercises, improvisations and scenes. It aims at preparing and presenting scenes in class, preparing written scenes and character analyses, attending plays, and writing performance critiques. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: THEA 101 or THR 101. Spr (C. Emüler, J. E. Hale)*

THR 103 Voice and Speech I
Devoted to the examination and practice of the basic principles of breathing, resonance, articulation, diaphragm support, pitch, rhythm and expressiveness, placement and diction. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Ersönmez)*

THR 104 Voice and Speech II
The course aims to help students integrate voice, breath, and text. It concentrates on the formation of the individual sounds of spoken Turkish and the development of ability to speak clearly, expressively and without impediments. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: THEA 103 or THR 103. Spr (Ö. Ersönmez)*

THR 105 Movement and Combat I
The course is based on the fundamentals of theatrical stage movement for actors, rooted in the techniques of Allan Wayne Work and developmental movement patterns. Students learn exercises to increase strength, flexibility, coordination, and stamina. *Credit units: 3 ECTS Credit Units: 7. Aut (D. J. Irizarry Osorio, A. Tayla)*

THR 106 Movement and Combat II
The course continues the fundamentals of theatrical stage movement for actors begun in THR 105. In addition to advancing in their knowledge and mastery of these exercises, students apply these principles to individual and ensemble movement-improvisation. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: THR 105. Spr (D. J. Irizarry Osorio, A. Tayla)*

THR 107 Dance I
The module introduces students to fundamentals of contemporary modern dance technique, rooted in the techniques of Allan Wayne Work and real-time composition methods. *Credit units: 2 ECTS Credit Units: 3. Aut (D. Atlı)*

THR 108 Dance II
This module places introduces students to the fundamentals of the Jean Hamilton Floor-Barre Technique, as well as places more emphasis on creating original dance choreography. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: THR 107. Spr (D. Atlı)*

THR 111 Phonetics I
The aim of the course is to the students the basic rules of clear articulation concerning the speech sounds and to analyze the function and also the movement of speech organs in order to attain perfect diction as an actor. *Credit units: 2 ECTS Credit Units: 4. Aut (F. N. Ekmekcioğlu)*

THR 112 Phonetics II
The course mostly focuses upon the articulation of phonemes (vowels and consonants) and the importance of stress and intonation while working on certain poems and theatrical texts. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: THR 111. Spr (F. N. Ekmekcioğlu)*

THR 201 Acting I
The course aims to explore experientially and analytically the foundation of the acting process based on Stanislavski's System and The Method of Physical Actions. It is based on characterization, roles, special problems, and application of acting techniques through exercises and two-character scenes from the Ancient Greek and Realist plays. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: THEA 102 or THR 102. Aut (M. Keskin Bayur, Z. E. Öner)*

THR 202 Acting II
Sequel to Acting I. The course aims to explore experientially and analytically the foundation of the acting process based on Stanislavski's System and The Method of Physical Actions. It is based on characterization, roles, special problems, and application of acting techniques through exercises and three or more character scenes from the Ancient Greek and Realist plays. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: THEA 201 or THR 201. Spr (M. Keskin Bayur, Z. E. Öner)*

THR 203 Voice and Speech III
The course is a continuation of the first-year work, which now becomes integrated into the rehearsal of the second-year acting studio. Development of the student's vocal instrument as an integrated organic function of self and character. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: THEA 104 or THR 104. Aut (Ö. Ersönmez)*

THR 204 Voice and Speech IV
Credit units: 3 ECTS Credit Units: 6, Prerequisite: THEA 203 or THR 203. Spr (Ö. Ersönmez)

THR 205 Movement and Combat III
Building upon the techniques learned in THR 105-106, students in this course combine these techniques into compositional exercises based on Mary Overlie's Viewpoints. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: THEA 108 or THR 106. Aut (D. J. Irizarry Osorio, A. Tayla)*

THR 206 Movement and Combat IV
Building upon the techniques learned in THR 205, students in this course explore imagination, character, and story within non-verbal physical theater. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: THEA 207 or THR 205. Spr (D. J. Irizarry Osorio, A. Tayla)*

THR 227 History of Theater I: Origins to Renaissance
Through a combination of lecture and discussion the course is an exploration of the history of world theatre from the Greeks to Shakespeare. Students learn about staging practices, the cultural use of theatrical space, the changing status of theatre within various cultures, and the role of the audience, the playwright, and the actor in theatrical performance. *Credit units: 3 ECTS Credit Units: 5. Aut (Ö. Özer)*

THR 228 History of Theater II: Renaissance to 20th Century
A study of development of western theatre from the 17th century to the 20th century. The course aims to emphasize the idea of theatre, the development of dramatic forms, the evolution of theatre architecture, the relationship between actor and audience and productions of these historical periods in the western theatre. *Credit units: 3 ECTS Credit Units: 5. Spr (Ö. Özer)*

THR 301 Acting III
This course aims to cover historical theories and techniques of styles of acting: from the neoclassical periods to contemporary styles. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: THEA 202 or THR 202. Aut (J. E. Hale, D. J. Irizarry Osorio)*

THR 302 Acting IV
Working with a director and being in whole process to constitute a play. Preparation and performance of two one-act play workshop productions. *Credit units: 4 ECTS Credit Units: 8, Prerequisite: THR 301. Spr (J. E. Hale, İ. Yazar)*

THR 303 Voice and Speech V
The course focuses on building power and range by developing breath muscles of the ribs and diaphragm, limbering the resonators of the chest, mouth, teeth, sinus, nasal, and skull, and finally, works on the entire range of the voice. It aims to help students work through spoken text through their own creative writing, sonnets,

and monologues, dialogues, which are all rehearsed and performed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: THEA 204 or THR 204. Aut (Ö. Ersönmez)*

THR 327 History of Theater III: 20th Century
Focusing primarily on the most significant plays and playwrights of the 20th century, the course is an exploration of the relationship between actor and audience and between "theatre" and the larger culture in an effort to determine what theatre means and why it is important in the modern world. *Credit units: 3 ECTS Credit Units: 5. Aut (Ö. Özer)*

THR 331 Textual Interpretation and Analysis I
A close study of dramatic texts and source material, with emphasis on dramaturgical praxis, including an overview of the history/theory of dramaturgy from Ancient Greece to Renaissance. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Özer)*

THR 332 Textual Interpretation and Analysis II
The course aims to make analysis of dramatic texts, with special emphasis on play structure, plot, character, dialogue, ideas, and various other elements essential to effective theatrical interpretation and realization from Renaissance to Realism. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: THR 331. Spr (Ö. Özer)*

THR 333 On Camera Acting
This course offers instruction and practice in the basics of acting for the camera and will assist students in making the transition from the theatre to the screen. It will introduce students to on-camera performance in various genres, and will address the technical requirements of TV and film acting such as playing to the camera, shooting out of sequence, blocking, and other production considerations. The course includes significant on-camera scene-work, character development, and script analysis. The assignments will include live tapings of selected materials. Through exercises and scene study, this course will familiarize students with on-camera acting techniques and expand each performer's range of emotional, intellectual, physical, and vocal expressiveness for the camera. *Credit units: 3 ECTS Credit Units: 6.*

THR 336 Speech on Stage
Open to all students who are interested and want to excel in presentational speech within the context of the art of theater. Fundamentals of voice production; nature of sound, projection, pronunciation, enunciation, and phonetics (consonant and vowel articulation) in relation to standard Turkish speech; stage presence and the analysis of the individual student's voice and diction in a self-improving format.
Credit units: 2 ECTS Credit Units: 3.

THR 337 Theatre Project
Working with a director and being involved in the whole process to constitute a play or scene project. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: THR 333. Spr (J. E. Hale)*

THR 338 Alternative Theatre Lab
Exploration of several alternative styles and forms of postmodern theatre. Culmination with a theatre presentation for the Bilkent Community. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: THR 333. Spr (D. J. Irizarry Osorio)*

THR 428 History of Turkish Theater
This module focuses on the changes and evolution of Turkish Theatre from 1839 to the present and Traditional Turkish Theatre. *Credit units: 3 ECTS Credit Units: 4. Spr (Ö. Özer)*

THR 431 Textual Interpretation and Analysis III
A survey of some diverse ways of analyzing scripts for dramatic production. The course aims to define different roles and different tools, and aims to choose from a veritable smorgasbord of methods. It is based on theatrical interpretation and realization from Realism to Avant-garde. The course explores critical methods based on psychoanalysis, cognitive science, Marxism, the various feminisms, and historicism. *Credit units: 3 ECTS Credit Units: 4. Aut (Ö. Özer)*

THR 432 Textual Interpretation and Analysis IV
A survey of some diverse ways of analyzing scripts for dramatic production. This module aims to define different roles and different tools, and aims to choose from a veritable smorgasbord of methods. It is based on theatrical interpretation and realization from Realism to Avant-garde. The course explores critical methods based on psychoanalysis, cognitive science, Marxism, the various feminisms, historicism. *Credit units: 3 ECTS Credit Units: 4. Spr (Ö. Özer)*

THR 451 Senior Project I
The course requires working with a director and being in whole process to constitute a play. *Credit units: 5 ECTS Credit Units: 12, Prerequisite: THR 302. Aut (J. E. Hale)*

THR 452 Senior Project II
Sequel to Senior Project I. The course requires working with another director and being in whole process to constitute a play. *Credit units: 5 ECTS Credit Units: 12, Prerequisite: THEA 401 or THR 451. Spr (D. J. Irizarry Osorio)*

FACULTY OF SCIENCE

Tayfun Özçelik, M.D., Dean
Mefharet Kocatepe, Ph.D., Assoc. Dean

The Faculty of Science comprises four academic departments:

- Chemistry
- Mathematics
- Molecular Biology and Genetics
- Physics

The Departments of Chemistry, Mathematics, Molecular Biology and Genetics, and Physics offer both graduate and undergraduate programs leading to B.S., M.S. and Ph.D. degrees. In addition, the Faculty contributes to interdisciplinary graduate programs that offer M.S. and Ph.D. degrees in the areas of Materials Science and Nanotechnology and Neuroscience.

At the undergraduate level, the Faculty admits a small number of highly qualified students to each program. The undergraduate curricula are designed to prepare the students for graduate study by providing a strong background in the general area of study with further opportunities of developing a deeper knowledge in various areas of emphasis.

The graduate programs aim to develop students into scientists who can pursue original and creative research. Graduate education in the Faculty is an inseparable part of the research activity which aims to produce significant scientific output at the international level.

The faculty also offers a number of service courses to students from other faculties.

ACADEMIC STAFF

Mehmet Akçay, Instructor
M.S., Applied Statistics, Gazi University, 1983. Banking and financial statistics.

Engin Umut Akkaya, Professor
Ph.D., Chemistry, The Ohio State University, Columbus 1989. Molecular and Supramolecular Synthetic Chemistry and Exploration of Emerging Functions.

Serap Aksu Ramazanoğlu, Assistant Professor
Ph.D., Materials Science and Engineering, Boston University, 2013. Biophotonics, Opto Fuidics, Optical Antemos.

Fatihcan Atay, Visiting Professor
Ph.D., Applied Mathematics, Brown University, 1994. Dynamical systems, delay differential equations, networks and graph theory, complex systems, applied mathematics.

Laurence John Barker, Associate Professor
Ph.D., Mathematics, Oxford University, 1992. Finite groups, representation theory, local and clifford theory, G-algebras, G-posets.

Bilge Baytekin, Assistant Professor
Ph.D., Chemistry, Freie Universitat Berlin, 2008. Mechanochemistry, organic materials chemistry, electrostatics.

Ceyhun Bulutay, Associate Professor
Ph.D., Electrical Engineering, Middle East Technical University, 1997. Computational semiconductor physics.

Şahin Büyükdağlı, Assistant Professor
Ph.D., Theoretical Physics, University Joseph Fourier, 2007. Statistica physics, biophysical modelling.

Agnese Callegari, Instructor
Ph.D., Physics, University of Roma “Tor Vergata”, 2003. Optical forces and Torques, Critical Casimir forces.

Murat Alper Cevher, Assistant Professor
Ph.D., Biochemistry, The City University of New York, Hunter College. Gene expression, In vitro transcription, breast cancer, large protein complex assembly.

Çağlar Çekiç, Assistant Professor
Ph.D., Immunology, University of Louisville, 2009. Cancer Immunotherapy, vaccine adjuvants, adaptive immune responses and inflammation.

Salim Çıracı, Professor
Ph.D., Condensed Matter Physics, Stanford University, 1974. Surface physics, electronic structures of solids, electron systems of lower dimensionality, mesoscopic physics, scanning tunneling and atomic force microscopy, chemisorption theory, metalization, strained semiconductor superlattices.

Onur Çizmecioğlu, Assistant Professor
Ph.D., Cell Biology, German Cancer Research Center (DKFZ), University of Heidelberg, 2009. Signaling pathways in cancer, PI3K pathway, regulation of cell and centrosome cycles.

Ömer Dağ, Professor
Ph.D., Chemistry, Middle East Technical University, 1994. Synthesis, characterization and spectroscopy of solid-state materials.

Mürüvet Güneş Davenport, Instructor
Ph.D., Electronics, Birmingham University, 1982. Underwater acoustics, applied mathematics.

Alexander Degtyarev, Associate Professor
Ph.D., Mathematics, Steklov Mathematical Institute, 1988. Algebraic topology, algebraic geometry.

Hilmi Volkan Demir, Professor
Ph.D., Electrical Engineering, Stanford University, 2004. Light-emitting diodes (LEDs), photovoltaics (PV), semiconductor nanocrystal optoelectronics, energy transfer driven devices and sensors, nanoparticles/nanocomposites, nanophotonics, RF sensing bioimplants and medical devices.

Ebru Erbay, Assistant Professor
Ph.D., Cell and Structural Biology, University of Illions, Urbana-Champaign, 2004. M.D., Ankara University, 1998. Signal transduction, organelle stress, metabolism, inflammation, obesity, diabetes, atherosclerosis, cardiovascular disease, metabolic syndrome.

Atilla Erçelebi, Professor
Ph.D., Condensed Matter Physics, Middle East Technical University, 1980. Polarons and bipolarons, electron-phonon interactions, excitons, low dimensional systems.

Ahmet Züfer Eriş, Senior Lecturer
Ph.D., Mathematical Physics, Middle East Technical University, 1976. Classical Field Theories, General Relativity, Integrable Systems.

Matthew Gelvin, Visiting Assistant Professor
Ph.D., Mathematics, Massachusetts Institute of Technology, 2010. Algebraic Topology, Fusion Systems, Local Group Theory.

Aurelian Gheondea, Associate Professor (on leave)
Ph.D., Mathematics, University of Bucharest 1990. Operator theory and operator algebras, spectral theory of linear differential operators, Hermitian and positive semidefinite kernels, quantum operations.

Alexandre Goncharov, Associate Professor
Ph.D., Mathematics, Rostov State University, 1986. Functional analysis. Topological vector spaces, spaces of infinitely differentiable functions.

Ahmet Gökalp, Senior Lecturer
Ph.D., Physics, Stanford University, 1980. Medium and High Energy Nuclear Physics, Elementary Particle Theory.

Serkan İsmail Göktuna, Assistant Professor
Ph.D., Human Biology, Technical University of Munich, 2010. Cancer biology, tumor immunology, autoimmune diseases.

Ahmet Muhtar Güloğlu, Assistant Professor
Ph.D., Mathematics, Ohio State University, 2005. Analytic number theory, automorphic forms.

Oğuz Gülseren, Professor
Ph.D., Condensed Matter Physics, Bilkent University, 1992. Theoretical Solid State Physics, nanoscience, metal nanowires, carbon nanotubes, exotic superconductors high pressure-high temperature properties of metals, phonons and vibrational spectra.

Ali Osmay Güre, Associate Professor
Ph.D., Tumor immunology, Cornell University, Graduate School of Medical Sciences, 1995. M.D., Ankara University, 1988. Cancer serology, cancer epigenetics, biomarkers of prognosis and chemosensitivity.

İhsan Gürsel, Professor
Ph.D., Biology, Middle East Technical University, 1995. Innate immunity, immunotherapy, primary Immunodeficiencies drug delivery, nanobiotechnology, vaccine development, biomaterials.

Metin Gürses, Professor
Ph.D., in Physics, Middle East Technical University, 1975. Mathematical Physics, Applied Mathematics. More specifically General Relativity and Integrable Systems.

Dilek Güvenç, Instructor
Ph.D., Mathematics, Ankara University, 1984. Probability and Statistics.

Balazs Hetenyi, Assistant Professor
Ph.D., Chemical Physics, Columbia University, 1999. Theoretical condensed matter physics: phasetransitions, strongly correlated systems, metal-insulator transition.

Fatih Ömer İlday, Associate Professor
Ph.D., Cornell University, 2003. Non-linear optics ultrafast optical phenomena.

Hakkı Turgay Kaptanoğlu, Professor
Ph.D., Mathematics, University of Wisconsin, 1991. Complex analysis and operator theory in spaces of holomorphic or harmonic functions of several variables, especially in Besov spaces.

Ferdi Karadaş, Assistant Professor
Ph.D., Inorganic Chemistry, Texas A & M University, 2009. Synthesis and characterization of magnetic and parous inorganic materials.

Anargyros Katsampekis, Instructor
Ph.D., Mathematics, University of Ioannina, 2006. Commutative Algebra, Algebraic Geometry, Algebraic Combinatorics, Graph Theory.

Azer Kerimov, Professor
Ph.D., Mathematics, Landau Institute of Theoretical Physics and Academy of Sciences of Azerbaijan, 1988. Mathematical theory of statistical physics, probability, mathematical analysis.

Alexandre Klyachko, Visiting Professor
Ph.D., Mathematics, Saratov State University, 1973. Algebra, algebraic geometry, number theory, models of classical finite groups, integer and modular representations, vector-bundles and moduli spaces.

Coşkun Kocabaş, Assistant Professor
Ph.D., Physics, University of Illinois at Urbana-Champaign, 2007. Semiconductor nanomaterials, graphene and carbon nanotubes.

Mefharet Kocatepe, Professor
Ph.D., Mathematics, University of Michigan, 1978. Functional analysis, nuclear spaces, Köthe spaces.

Özlen Konu, Associate Professor
Ph.D., Biology, Texas Tech University, 1999. Microarray data analysis, gene networks in nicotine's pharmacological effects, zebrafish genetics.

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Ph.D., Mathematics, Middle East Technical University, 1998. Ring theory, number theory.

Zeki Cemal Kuruoğlu, Professor
Ph.D., Theoretical Chemistry/Chemical Physics, University of Florida, 1978. Chemical reaction dynamics, quantum theory of scattering, few-body problems, numerical methods for quantum mechanical calculations.

Uğurhan Muğan, Professor
Ph.D., Mathematics, Clarkson University, 1987. Nonlinear ordinary and partial differential equations, asymptotic analysis, boundary value problems, singular integral equations.

Mehmet Özgür Oktel, Associate Professor
Ph.D., Physics, Massachusetts Institute of Technology, 2000. Theoretical condensed matter physics, atomic physics.

Ekmel Özbay, Professor
Ph.D., Electrical Engineering, Stanford University, 1992. Nanotechnology, nanophotonics, nanoelectronics, metamaterials, GaN MOCVD growth, GaN devices, photonic crystals, physics and applications of nanostructures, photonic devices, nanosensors.

Tayfun Özçelik, Professor
M.D., Human Genetics, İstanbul University, 1986. Human molecular genetics, gene mapping, mutation analysis, identification of disease genes, X-chromosome inactivation.

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Ph.D., in Physical Chemistry, Texas A&M University , 2004. Catalytic properties of surfaces and nanostructures, model catalyst design at the atomic level, spectroscopic investigation of single crystals and ultra-thin metal-oxide films.

Aydan Pamir, Instructor
Ph.D., Mathematics, Middle East Technical University, 1992. Numerical analysis, computer programming, applied mathematics, effective teaching in mathematics.

Ulrike Salzner, Professor
Ph.D., Chemistry, Universität Erlangen,1993. Computational chemistry, quantum chemistry, band structure calculations, band gap engineering, polymer chemistry.

Ali Sinan Sertöz, Professor
Ph.D., Mathematics, University of British Columbia, 1984. Algebraic geometry.

Müfit Sezer, Associate Professor
Ph.D., Mathematics, Purdue University, 2003. Invariant theory, commutative algebra.

Şefik Süzer, Professor
Ph.D., Chemistry, University of California, Berkeley, 1976. Electron, ion and photon spectroscopic analyses of gases, solids and surfaces.

Özgür Şahin, Assistant Professor
Ph.D., Cell and Systems Biology, University of Heidelberg and German Cancer Research Center, 2008. Breast cancer, systems biology, signal transduction, drug resistance, metastasis, microRNAs and biomarkers.

Bilal Tanatar, Professor
Ph.D., Condensed Matter Physics, University of Delaware, 1987. Theory of quantum solids and liquids, low dimensional electron systems, computational physics.

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Ph.D., Mathematics, University of Minnesota, 1992. Automorphic forms, special values of L-functions.

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Ph.D., Organic and Polymer Chemistry, University of Cambridge and Imperial College, London 1999. Synthesis, characterisation and application of functional materials, supramolecular and polymer chemistry.

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Ph.D., Organic Chemistry, The University of Chicago, 2012. Non-covalent interactions in organocatalysis, natural product total synthesis.

Burak Ülgüt, Assistant Professor
Ph.D., Analytical and Physical Chemistry, Cornell University, 2007. Electron Transfer through molecules and assemblies.

Bülent Ünal, Associate Professor
Ph.D., Mathematics, University of Missouri, 2000. Differential geometry, Riemannian geometry, pseudo-Riemannian geometry and Lorentzian geometry, global analysis on manifolds, general relativity and quantum field theories.

Özgün Ünlü, Assistant Professor
Ph.D., Mathematics, University of Wisconsin-Madison, 2004. Algebraic toplogy, geometric group theory.

Ali Süleyman Üstünel, Visiting Professor
Ph.D., Mathematics, University of Paris VI, 1981. Probability and analysis: Stochastic calculus on nuclear spaces, stochastic partial differential equations. Analysis on Wiener space, Malliavin calculus and its applications, Monge-Kantorovich measure transportation and Monge-Amphre equation on Wiener space.

Giovanni Volpe, Assistant Professor (on leave)
Ph.D., Physics, ICFO - The Institute of Photonics Sciences, 2008. Condensed matter of Physics, Statical physics, soft matter, optical tweezers.

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Ph.D., Australian National University, 2007. Rydberg Atomic Physics, Bose Einstein Condensate, Quantum Opto-mechanics.

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Ph.D., Condensed Matter Physics, Brown University, 1976. Statistical mechanics: dynamics of phase transitions and critical phenomena, quantum mechanical simulation of electronic devices.

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Ph.D., Mathematics, University of Wisconsin-Madison, 1998. Cohomology of groups, finite group actions on topological spaces, geometric structures associated to groups.

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Ph.D., Mathematics, University of Illinois, Urbana-Champaign, 2004. Analytic theory of partitions, elliptic functions, basic hypergeometric series, and q-series.

Işık Yuluğ, Associate Professor
Ph.D., Molecular Genetics, University of London, 1996. Gene analysis in breast cancer, gene identification, gene expression in eukaryotic systems, epigenetics.

Natalia Zheltukhina, Instructor
Ph.D., Mathematics, Bilkent University, 2002. Analytic properties of entire functions, zero distributions.

PART-TIME ACADEMIC STAFF

Gökalp Alpan, M.S., Mathematics, Bilkent University, 2012,
Özgür Baştürk, Ph.D., Astrophysics, Astronomy and Space Sciences, Ankara University, 2012.
Tieu Lan Chau, Ph.D., Biomedical Sciences, University of Liege, 2011.

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Erdem Erikçi, Ph.D., Cell and Molecular Biology, Max Planck Institution for Biomedical Sciences, University of Göttingen-Germany, , 2014.
Çisem Güneş Aktaş, M.A., Mathematics, Bilkent University, 2010.
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Bengi Ruken Yavuz, M.S., Mathematics, Bilkent University, 2013.
Ali Ulvi Yılmazer, Ph.D., Physics Engineering, Ankara University, 1986. High Energy Physics.

DEPARTMENT OF CHEMISTRY

Ş. Süzer (Chair), E. U. Akkaya, B. Baytekin, Ö. Dağ, F. Karadaş, Z. C. Kuruoğlu, E. Özensoy, U. Salzner, D. Tuncel, Y. E. Türkmen, B. Ülgüt.

The Chemistry Department provides graduate and undergraduate courses in basic and applied areas of Chemistry. The undergraduate program offers the B.S. degree and the graduate program leads to M.S. and Ph.D. degrees in Chemistry. Current research areas are solid-state chemistry, organometallic chemistry, nuclear chemistry, molecular spectroscopy, theoretical chemistry, polymer and surface chemistry. Research in progress include studies of nuclear fission, radiochemical dating studies, sorption studies of radioactive wastes, synthesis and characterization of inorganic materials, liquid crystals, adsorption, catalysis and mechanism of heterogeneous reactions, quantum theory of chemical reactions, few-body problems in chemistry and physics, modification and characterization of material surfaces, theoretical design of conducting polymers, mechanism of diastereo selection in organic reactions, protein conformations, optical studies of molecular aggregates, cage compounds, polymer chemistry, structure-property -performance relationships, electrochemistry and fuel cells.

Laboratory facilities include teaching and modern research laboratories for nuclear, electro, solid-state and surface chemistry.

UNDERGRADUATE PROGRAM

The undergraduate program aims to equip students with basic chemical knowledge and experimental skills so that they can contribute to modern scientific and technological developments. The program is designed to lead to a professional career or advanced study in chemistry.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 101	Principles of Chemistry I	4 / 6
CHEM 120	Orientation for Chemistry Majors	1 / 1
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
PHYS 101	General Physics I	4 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CHEM 102	Principles of Chemistry II	4 / 6
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
PHYS 102	General Physics II	4 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 211	Analytical Chemistry I	3 / 6
CHEM 213	Analytical Chemistry Laboratory I	2 / 4
CHEM 231	Organic Chemistry I	3 / 6
CHEM 235	Organic Chemistry Laboratory I	2 / 4
GE 250	Collegiate Activities Program I	- / 1
MATH 225	Linear Algebra and Differential Equations	4 / 7
MBG 105	Principles of Biology	3 / 5

Spring Semester		Credits / ECTS Credits
CHEM 212	Analytical Chemistry II	3 / 6
CHEM 214	Analytical Chemistry Laboratory II	2 / 4
CHEM 232	Organic Chemistry II	3 / 6

CHEM 236	Organic Chemistry Laboratory II	2 / 4
CS 113	Introduction to Computing	4 / 7
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 320	Physical Chemistry Laboratory	3 / 6
CHEM 323	Physical Chemistry I	3 / 6
CHEM 327	Quantum Chemistry I	3 / 6
CHEM 341	Inorganic Chemistry I	3 / 6
HUM 111	Cultures Civilizations and Ideas I	3 / 6
	Non Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
CHEM 324	Physical Chemistry II	3 / 6
CHEM 328	Quantum Chemistry II	3 / 6
CHEM 340	Inorganic Chemistry Laboratory	3 / 6
CHEM 342	Inorganic Chemistry II	3 / 6
HUM 112	Cultures Civilizations and Ideas II	3 / 6
	Non Technical Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 399	Summer Practice	- / 9
CHEM 461	Fundamentals of Biochemistry	3 / 6
CHEM 491	Senior Project I	3 / 6
	Non Technical Elective	3 / 6
	Technical Electives (2)	6 / 12

Spring Semester		Credits / ECTS Credits
CHEM 422	Introduction to Statistical Thermodynamics	3 / 6
CHEM 450	Applied Quantum Chemistry	3 / 6
CHEM 492	Senior Project II	3 / 6
	Technical Electives (2)	6 / 12

Note: Technical electives can be chosen from CHEM 201, any 300 or higher level MBG, PHYS, CS, EE, IE, MATH, or CHEM course, or with the consent of the advisor.

MINOR PROGRAM

Chemistry is a fundamental study encompassing the knowledge of structural and functional diversity of our material world at atomic and molecular level. The achievements of chemistry span from synthesis of pharmaceuticals and agricultural products to new materials, solar cells, superconductors, clean fuels. Chemistry impacts many disciplines in the fields of engineering, technology, biology, physics, medicine, and plays a central role in the solution of important problems related to health and environment.

The new minor program in chemistry is designed for undergraduate students from the Science and Engineering Faculties who intend to pursue a professional career in interdisciplinary fields in which a sound knowledge of chemistry is important.

Prerequisite Courses:

PHYS 101 General Physics I
PHYS 102 General Physics II
MATH 101 Calculus I
MATH 102 Calculus II

CURRICULUM

Courses		Credits / ECTS Credits
CHEM 212	Analytical Chemistry II	3 / 6
CHEM 231	Organic Chemistry I	3 / 6
CHEM 341	Inorganic Chemistry I	3 / 6
	Electives (3)	9 / 18

GRADUATE PROGRAM

The graduate program is tailored to develop research skills of students so that they can pursue original and creative research at the highest level. Current research areas are nuclear chemistry, organic and inorganic chemistry, polymer chemistry, theoretical and computational chemistry and surface chemistry.

Master of Science in Chemistry

Admission: All applicants are required to have a B.S. degree in chemistry, chemical engineering, or in a related field of science or engineering. Students with a B.S. degree in areas other than chemistry may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
CHEM 599	Master's Thesis	- / 56
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
	CHEM Graduate electives (4)	12 / 30
	Graduate elective	3 / 7.5
	Graduate elective or an Undergraduate elective course (2)	6 / 12
	Graduate Seminar in Chemistry	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

CHEM Graduate Elective Courses: All 5XX CHEM coded courses with at least 3 credits.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

Graduate Elective or Undergraduate Elective Courses: All 3XX or higher level CHEM, CS, EEE, IE, MATH, MBG, ME, MSN and PHYS coded courses with at least 3 credits.

Doctor of Philosophy in Chemistry

Admission: All applicants are required to have a M.S. degree with thesis in chemistry, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
CHEM 699	Ph.D. Dissertation	- / 140
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
	CHEM Graduate electives (4)	12 / 30
	Graduate electives (3)	9 / 22.5
	Graduate Seminar in Chemistry	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

CHEM Graduate Elective Courses: All 5XX CHEM coded courses with at least 3 credits.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

COURSE DESCRIPTIONS

CHEM 101 Principles of Chemistry I
A basic course in chemical systems, stoichiometry, structural and physical properties of matter, chemical equilibrium, ionic equilibrium, chemical thermodynamics, electrochemistry, chemical kinetics. (Laboratory work is obligatory). *Credit units: 4 ECTS Credit Units: 6. Aut (Ö. Dağ, E. Özensoy, U. Salzner) Spr (U. Salzner)*

CHEM 102 Principles of Chemistry II
Atomic theory and molecular structure. Covalent, ionic and metallic bonding. Structure of metals, ceramics, and polymers. (Laboratory work is obligatory). *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CHEM 101. Spr (E. Özensoy, U. Salzner)*

CHEM 120 Orientation for Chemistry Majors
Introduction to the aspects of the "current chemistry and chemical research" for first year chemistry majors. Students will be introduced to the department and its members. Faculty members and students meet once a week for discussions and presentations to introduce a variety of subject areas. *Credit units: 1 ECTS Credit Units: 1. Aut (Ş. Süzer)*

CHEM 201 Materials Science and Technology
Selected characteristics of materials. Mechanical, thermal, electrical properties. Atomic structure and chemical bonding. Structure of solids. Crystals, noncrystals. Metals, semiconductors. Alloys, polymers, polymeric properties. Ceramics. Electromagnetic and mechanical behavior of ceramics. Multiphase equilibria. Mechanical and physical properties of multiphase materials. Thermal processing. Corrosion of metals. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Baytekin, F. Karadaş) Spr (B. Baytekin, F. Karadaş)*

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

CHEM 211 Analytical Chemistry I
Fundamental principles and theories of analytical chemistry. Qualitative and quantitative analysis by gravimetric, volumetric and electrochemical methods. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Aut (B. Ülgüt)*

CHEM 212 Analytical Chemistry II
Modern instrumental methods of chemical analysis based upon electrochemical and spectroscopic methods. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102 and CHEM 211. Spr (B. Ülgüt)*

CHEM 213 Analytical Chemistry Laboratory I
Exeriments in modern quantitative analysis: Gravimetry, Neutralization Titrations, Analysis of Carbonate Mixtures, Precipitation Titrations, Titrations Based on Complex Formation, Oxidation-Reduction Titrations, Iodometry, Potentiometric Titrations. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: CHEM 102. Aut (B. Ülgüt)*

CHEM 214 Analytical Chemistry Laboratory II
A basic course in measurement science, intended to provide the student with an overall view of modern analytical chemistry and the instrumental methods of analysis used throughout industrial laboratories and research environments: Potentiometry, Ion Exchange Chromatography, Flame Photometry, Atomic Absorption Spectrometry, Infrared Spectrometry, Thin Layer Chromatography, Ultraviolet and Visible Spectrometry, Gas Chromatograhpy, Electrophoresis. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: CHEM 211 and CHEM 213. Spr (B. Ülgüt)*

CHEM 231 Organic Chemistry I
Basic principles of organic chemistry. A survey of the principal classes of organic compounds. Synthesis and characteristics reactions of various functional groups. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Aut (Y. E. Türkmen)*

CHEM 232 Organic Chemistry II
Basic principles of organic chemistry. A survey of the principal classes of organic compounds. Synthesis and characteristics reactions of various functional groups. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102 and CHEM 231. Spr (Y. E. Türkmen)*

CHEM 233 Principles of Organic Chemistry I
Basic principles of organic chemistry. A survey of the principal classes of organic compounds. Synthesis and characteristic reactions of various functional groups. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Aut (E. U. Akkaya, D. Tuncel) Spr (D. Tuncel)*

CHEM 235 Organic Chemistry Laboratory I
This course will cover the basic organic chemistry experimental techniques such as: Crystallization, melting point determination, distillation, extraction, chromatography (e.g. thin layer chromatography, column chromatography). *Credit units: 2 ECTS Credit Units: 4, Prerequisite: CHEM 102. Aut (Y. E. Türkmen)*

CHEM 236 Organic Chemistry Laboratory II
The basic organic chemistry experiments will be carried out for the synthesis of some important organic molecules using the techniques acquired in Organic Chemistry Laboratory I (CHEM 235) as well as the knowledge gained in the Organic Chemistry Courses I and II. The students will also be introduced to the characterization techniques of organic molecules such as UV-Vis, FT-IR and NMR spectroscopy. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: CHEM 231 and CHEM 235. Spr (Y. E. Türkmen)*

CHEM 301 Processing and Applications of Materials
Principles of processing and applications of various types of materials ranging from metal alloys and ceramics to polymers and composites. Processing of materials and their applications in various fields. Annealing, casting, fundamentals of heat treatment, powder handling, and powder pressing. Relationship between processing and performance. Materials used particularly in developing fields of materials science such as optical communication, fuel cells, superconductors, light-emitting diodes, lasers, and information storage. Introduction to how science and engineering can be engaged to design materials for many applications. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 201. Spr (F. Karadaş)*

CHEM 320 Physical Chemistry Laboratory
Critical Point Determination, Neutralization Enthalpy, Adiabatic Coefficients of Gases, Joule-Thomson Effect, Differential Thermal Analysis, Phase Equilibria in a Ternary System, Viscosity Measurements, Conductivity of Strong and Weak Electrolytes, Electrolysis, Surface Energy Measurements. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Aut (Ş. Süzer)*

CHEM 323 Physical Chemistry I
Chemical thermodynamics. Solution and phase equilibria. Electrochemistry. Solid and liquid states. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102 and MATH 102. Aut (Ş. Süzer)*

CHEM 324 Physical Chemistry II
Chemical kinetics. Transport phenomena. Surface chemistry. Chemistry of macromolecules. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 323. Spr (E. Özensoy)*

CHEM 325 Principles of Physical Chemistry I
Chemical thermodynamics. Solution and phase equilibria. Electro chemistry. Solid and liquid states. *Credit units: 3 ECTS Credit Units: 6.*

CHEM 327 Quantum Chemistry I
Review of matrix algebra and linear vector spaces. Basic notions of probability theory. Basic concepts of classical mechanics. Axioms of quantum mechanics: state vectors and wavefunctions, eigenvalues and eigenstates of observables, probability interpretation, time-dependent Schrodinger equation. Bound and continuum states of one-dimensional models. Approximation methods:Variation and perturbation methods. Bound states of Hydrogen atom. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (MATH 220 and MATH 240 and PHYS 102) or (MATH 225 and PHYS 102). Aut (Z. C. Kuruoğlu)*

CHEM 328 Quantum Chemistry II
Intrinsic angular momentum (spin) of particles. Fermions and bosons. Permutational symmetry of identical particles and Pauli Principle, Slater determinants. Hartree-Fock equations and introduction to atomic structure. Born-Oppenheimer approximation, potential energy surfaces and vibrational-rotational states of molecules. Valence-bond and molecular-orbital approaches to molecular electronic structure. Qualitative molecular-orbital description. Ab-initio and semi-empirical methods. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 327 or PHYS 327. Spr (Z. C. Kuruoğlu)*

CHEM 340 Inorganic Chemistry Laboratory
Crystal growth in gels. Synthesis of isomorphous compounds. Structural, electrical and magnetic properties of perovskite ceramics. Preparation and chracterization of polythionates. Interchalogenes: synthesis of iodine trichloride. Isopolyvanadates. Acid-base chemistry: determination of the nature of bonding in DMSO complex of copper(II). Spectrophotometric determination of the formula of a coordination complex and equilibrium constant. Spectrochemical series of Co(III) complexes. Microscale determination of magnetic susceptibility with Evans balance. Geometric isomers of coordination complexes. Linkage isomers of coordination complexes. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Spr (Ö. Dağ)*

CHEM 341 Inorganic Chemistry I
The nature of chemical bond. Shapes of molecules. Acid-Base chemistry. Chemistry in aqueous and nonaqueous solutions. Hydrogen bonding. General properties of the elements in the periodic table. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 102. Aut (Ö. Dağ)*

CHEM 342 Inorganic Chemistry II
Bonding, stereochemistry and spectra of coordination compounds. Electronic, magnetic and optical properties of solids. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 341. Spr (Ö. Dağ)*

CHEM 399 Summer Practice
The minimum time for this practice is 6 weeks (30 working days). The main objective is to work in an industrial laboratory on the areas of Chemistry. *Credit units: None ECTS Credit Units: 9. Aut (B. Baytekin)*

CHEM 421 Principles and Chemical Applications of Thermodynamics
The zeroth, first, second and third Laws of Thermodynamics, Fundamental equation, maximum entropy, principle. Legendre transforms and thermodynamic potentials. Extremum principles for equilibrium states. stability of thermodynamic systems, LeChatelier principle. Thermodynamic surfaces. Thermodynamics of systems in external fields. Basic notions of Irreversible Thermodynamics. *Credit units: 3 ECTS Credit Units: 6. Aut (Z. C. Kuruoğlu)*

CHEM 422 Introduction to Statistical Thermodynamics
Review of Classical Thermodynamics: fundamental equation, maximum entropy principle, Legendre transforms and thermodynamic potentials. Basic notions of probability theory. Ensemble theory: microcanonical, canonical and grandcanonical ensembles. Partition functions. Fluctuations, equivalence of ensembles. Classical phase-space approach. Quantum statistics: Fermi-Dirac and Bose-Einstein distributions. Classical limit of quantum statistics. Applications to ideal gases, chemical equilibrium, models for adsorption and elasticity. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 323. Spr (Z. C. Kuruoğlu)*

CHEM 430 Food Chemistry
Credit units: 3 ECTS Credit Units: 6, Prerequisite: CHEM 101 or CHEM 102.

CHEM 431 Organic Chemistry III
Consolidation and extension of fundamental knowledge gained through the courses CHEM 231 and CHEM 232 on the advanced principles of organic stereochemistry, organic reaction mechanisms, and methods used for the

synthesis and characterization of organic compounds. Illustration of the role of organic chemistry in biology, medicine, and industry by including special topics. *Credit units: 3 ECTS Credit Units: 7.5, Prerequisite: CHEM 232. Spr (E. U. Akkaya)*

CHEM 450 Applied Quantum Chemistry
Quantum mechanical calculations of various properties of molecules using semi-empirical as well as ab-initio methods. *Credit units: 3 ECTS Credit Units: 6. Aut (U. Salzner) Spr (U. Salzner)*

CHEM 456 Advanced Instrumental Analysis
The course objective is to study and discuss the principles, instrumentation and applications of modern instrumental methods, including spectroscopic techniques such as AAS, ICPMS, FTIR, Raman spectroscopy, Luminescence Spectroscopy, Mass Spectrometry. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Ülgüt)*

CHEM 460 Environmental Chemistry
Chemical problems related to environment. Energy balance of earth, ozone in the upper atmosphere, greenhouse effect, micrometeorology. SO_2 and CO_2 cycles, photochemical smog, aerosols, trace elements in the environment, particle size distribution. *Credit units: 3 ECTS Credit Units: 6.*

CHEM 461 Fundamentals of Biochemistry
Basic discussion of the structure and properties of biomolecules with special emphasis on proteins, enzymatic catalysis, membrane assembly and functions, bioenergetics. *Credit units: 3 ECTS Credit Units: 6. Aut (Y. E. Türkmen)*

CHEM 470 Polymer Chemistry
Polymer chains and characterization. Statistics and kinetics of polymerization reactions. Structure and properties of bulk polymers. Materials and synthetic polymers. Rubber elasticity and entropy. *Credit units: 3 ECTS Credit Units: 6. Aut (D. Tuncel)*

CHEM 491 Senior Project I
A project on a specific topic in an area of chemistry to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (Ş. Süzer)*

CHEM 492 Senior Project II
A project on a specific topic in an area of chemistry to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Spr (Ş. Süzer)*

CHEM 503 Chemical Kinetics
Experimental and theoretical aspects of reactive and inelastic molecular processes, collision theory. Homogeneous reactions in gas and liquid phases. Surface reactions and solid state reactions. Theory of kinetic processes. Molecular beams. Lasers. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Özensoy)*

CHEM 504 Group Theory and its Chemical Applications
Group theory, molecular symmetry, ligand field theory. Applications: symmetry aspects of MO theory, spectroscopy of transition metal complexes, metal-ligand bonding, molecular vibrations and symmetry. *Credit units: 3 ECTS Credit Units: 7.5.*

CHEM 505 Nuclear and Radiochemistry
The atomic nucleus. Nuclear masses and nuclear stability. Radioactive decay processes: alpha, beta, and gamma decay. Structure of nuclei, nuclear models, nuclear forces, nuclear reactions, fission, fusion. Nuclear processes in geology and astrophysics. *Credit units: 3 ECTS Credit Units: 7.5.*

CHEM 506 Chemical Thermodynamics
The Laws of Thermodynamics. The Gibbsian approach to Thermodynamics: Fundamental equation, maximum entropy principle. legendre transforms and thermodynamic potentials. Extremum principles for equilibrium states. Stability of thermodynamic systems, LeChatelier principle. Phase equilibria, phase transitions, phase diagrams. Critical phenomena. thermodynamics of chemical Reactions. capillarity effects. Thermodynamics of systems in external fields. Introduction to Irreversible Thermodynamics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Z. C. Kuruoğlu)*

CHEM 513 Environmental Radiochemistry
Radiochemical problems related with the environment. Analysis of current environmental issues using radioisotope techniques. Energy resources and utilization. Air and water pollution. Radiochronological techniques. *Credit units: 3 ECTS Credit Units: 7.5.*

CHEM 515 Molecular Spectroscopy
Atomic spectra, rotational, vibrational and electronic spectra of molecules. Structural parameters. Molecular models. Group theory. Selection rules. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ş. Süzer)*

CHEM 521 Surface Chemistry I
The central idea of this course is to describe the present state of modern surface science within a context dictated by chemistry. The course offers understanding of the surface phenomena at molecular-level and their relation to the various surface processes. It is focused on the properties of the solid-gas and solid-liquid interfaces and could be interest to students of chemical, physical and engineering science. *Credit units: 3 ECTS Credit Units: 7.5.*

CHEM 531 Advanced Organic Chemistry I
The important classes of organic reactions and methods by which chemists obtain information about chemical processes. The primary focus of the course is on reaction mechanisms. The experimental evidence upon which mechanistic ideas are built will be emphasized. This course will also emphasize heterolytic reactions. *Credit units: 3 ECTS Credit Units: 7.5. Spr (D. Tuncel)*

CHEM 534 NMR Spectroscopy for Organic Structure Determination
Fundamental theory and practical aspects of Nuclear Magnetic Resonance (NMR) spectroscopy with special emphasis on chemical shifts, spin-spin couplings and spin systems. Applications of 1-D 1H- and 13C-NMR spectroscopic techniques. Strategies for the structure determination of unknown compounds. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Y. E. Türkmen)*

CHEM 537 Supramolecular Chemistry
The course introduces general principles of molecular recognition, complex formation and host design, with emphasis on thermodynamics of multi-site host-guest complexation and nature of supramolecular interactions. Structure, properties, and synthesis of major categories of cation-, anion-, and neutral molecule-binding hosts are discussed, and crystal structures of enzyme-inhibitor complexes are analyzed from the point of view of the basic concepts of host-guest chemistry. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. U. Akkaya)*

CHEM 541 Advanced Inorganic Chemistry I
Electronic spectra of complexes, reaction mechanism of d-block complexes, d- and f-block organometallic compounds, inorganic chains, rings, cages and clusters, catalysis and characterization of catalytic materials. *Credit units: 3 ECTS Credit Units: 7.5. Aut (F. Karadaş)*

CHEM 542 Advanced Inorganic Chemistry II
Solid state synthesis, electronic and optical properties of solids. Solid state characterization methods. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ö. Dağ)*

CHEM 552 Special Topics in Physical Chemistry II
Credit units: 3 ECTS Credit Units: 7.5.

CHEM 556 Advanced Instrumental Analysis
Principles, instrumentation and applications of modern instrumental methods, including spectroscopic techniques such as AAS, ICPMS, FTIR, Raman spectroscopy, Luminescence Spectroscopy, Mass Spectrometry. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Ülgüt)*

CHEM 571 Special Topics in Organic Chemistry I
Credit units: 3 ECTS Credit Units: 7.5.

CHEM 572 Special Topics in Organic Chemistry II
Credit units: 3 ECTS Credit Units: 7.5. Spr (E. U. Akkaya)

CHEM 573 Polymer Chemistry I
Basic concepts of polymer science. Condensation, free radical, ionic, and coordination polymerizations. Synthesis, molecular structure, properties and uses of some common commercial polymers. *Credit units: 3 ECTS Credit Units: 7.5. Aut (D. Tuncel)*

CHEM 586 Electrochemistry
Fundamentals of electrochemistry with special emphasis on electrode kinetics, thermodynamics and structure of the electrode electrolyte interface. Electrochemical measurement techniques involving controlled potential and current methods. Energy storage and conversion examples including supercapacitors, batteries and solar cells. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Ülgüt)*

CHEM 591 Graduate Seminar I
This is a graduate (M.S.) seminar course. The instructor and students meet once a week for presentations and discussions. Topics of presentations are chosen by the mutual consent of the instructor and the students. *Credit units: None ECTS Credit Units: 1. Aut (Ş. Süzer) Spr (Ş. Süzer)*

CHEM 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (Ş. Süzer) Spr (Ş. Süzer)

CHEM 691 Advanced Seminar I
This is a graduate (Ph.D.) seminar course. The instructor and students meet once a week for presentations and discussions. Topics of presentations are chosen by the mutual consent of the instructor and the students. *Credit units: None ECTS Credit Units: 1. Aut (Ş. Süzer) Spr (Ş. Süzer)*

CHEM 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (Ş. Süzer) Spr (Ş. Süzer)

DEPARTMENT OF MATHEMATICS

F. Atay (Chair), M. Akçay, L. J. Barker, M. G. Davenport, A. Degtyarev, M. Gelvin, A. Gheondea, A. Goncharov, A. M. Güloğlu, M. Gürses, D. Güvenç, H. T. Kaptanoğlu, A. Katsampekis, A. Kerimov, A. Klyachko, M. Kocatepe, Y. Kurtulmaz, U. Muğan, A. Pamir, A. S. Sertöz, M. Sezer, M. O. Tekman, B. Ünal, Ö. Ünlü, A. S. Üstünel, E. Yalçın, H. Yeşilyurt, N. Zheltukhina.

Part-time: G. Alpan, M. A. Erdal, Ç. Güneş Aktaş, Z. Ural, B. R. Yavuz.

The Department of Mathematics offers undergraduate and graduate courses that lead to B.S., M.S. and Ph.D. degrees in Mathematics as well as undergraduate and graduate courses to all departments of the university.

The department emphasizes both pure and applied mathematics. Research in the department covers algebra, algebraic topology, algebraic geometry, functional analysis, algebraic number theory, analysis of nonlinear systems and general relativity.

UNDERGRADUATE PROGRAM

The undergraduate program in mathematics aims to serve two different purposes through a highly flexible curriculum.

On the one hand we educate the future mathematicians both with the pure and applied interests. For this we have a carefully prepared program whose success is tested over and over again during the last two decades. Only highly motivated and research oriented students choose specialized mathematics courses and together with equally motivated and talented classmates they experience a challenging and rewarding learning process. The program allows students to choose and specialize on their research subjects and they may start to do projects with their chosen mentors.

On the other hand we realize that some of our students decide not to pursue a research oriented path in mathematics. They want to prepare themselves for the challenges of the new era with a solid background in mathematics. Modern times require multivariate skills for jobs which were neither existent nor conceivable before. Our curriculum allows such students to structure their own education by allowing them to choose from the rich pool of courses offered on the campus by any department. This allows them to specialize on a subject of their choice with the advantage of having a strong mathematical basis.

The flexibility of our curriculum allows us to mentor and train both prospective mathematicians and widely educated individuals who will have a definite edge in the competitive job market for jobs which require talented and knowledgeable team members.

Our curriculum thus prepares students, according to their own choice, either for graduate work and research in mathematics, or for successful future in jobs such as economics, finance, business and education, just to name a few roads walked by our past graduates.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
MATH 123	Abstract Mathematics I	4 / 7
PHYS 101	General Physics I	4 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7

MATH 124	Abstract Mathematics II	4 / 7
PHYS 102	General Physics II	4 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CS 113	Introduction to Computing	4 / 7
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
MATH 213	Advanced Calculus I	3 / 6
MATH 223	Linear Algebra I	3 / 6
MATH 240	Differential Equations	3 / 6
MBG 105	Principles of Biology	3 / 5

Spring Semester		Credits / ECTS Credits
CS 114	Introduction to Programming	4 / 7
GE 251	Collegiate Activities Program II	1 / 1
MATH 210	Finite and Discrete Mathematics	3 / 6
MATH 214	Advanced Calculus II	3 / 6
MATH 224	Linear Algebra II	3 / 6
MATH 253	Introduction to Number Theory	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
HUM 111	Cultures Civilizations and Ideas I	3 / 6
	Electives (3)	9 / 18
	MATH Elective	3 / 6

Spring Semester		Credits / ECTS Credits
HUM 112	Cultures Civilizations and Ideas II	3 / 6
	Electives (4)	12 / 24
	MATH Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
	Electives (3)	9 / 18
	MATH Elective	3 / 6
	Non Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
	Electives (3)	9 / 18
	MATH Elective	3 / 6
	Non Technical Elective	3 / 6

MATHEMATICS ELECTIVE COURSES

MATH 202	Complex Analysis	3 / 6
MATH 302	Complex Analysis II	3 / 6
MATH 313	Real Analysis I	3 / 6
MATH 314	Real Analysis II	3 / 6
MATH 323	Algebra I	3 / 6
MATH 324	Algebra II	3 / 6
MATH 345	Differential Geometry I	3 / 6
MATH 346	Differential Geometry II	3 / 6
MATH 414	Functional Analysis	3 / 6
MATH 415	Analysis of Differentiable Functions	3 / 6
MATH 420	Introduction to Cryptography	3 / 6
MATH 430	Introduction to Complex Geometry	3 / 6
MATH 431	Introduction to Algebraic Geometry	3 / 6
MATH 443	Partial Differential Equations	3 / 6

MATH 445	Analysis on Manifolds	3 / 6
MATH 453	Algebraic Number Theory	3 / 6
MATH 473	Introduction to Financial Mathematics	3 / 6
MATH 474	Financial Mathematics	3 / 6
MATH 491	Senior Project I	3 / 6
MATH 492	Senior Project II	3 / 6

Double Major with Mathematics

The double major program in mathematics is an option for exceptional undergraduate students enrolled in an undergraduate program to pursue a second bachelor's degree from the Mathematics Department to prepare them for interdisciplinary research. Students are closely supervised and are responsible for all courses in the mathematics undergraduate curriculum except common or equivalent courses with their host undergraduate programs.

Admission Requirements: Students with a cumulative grade point average of 3.30/4.00 and higher can start after completing two or three semesters in their host undergraduate programs.

Degree Requirements: Students must have a cumulative grade point average of 3.00/4.00 and higher in their host undergraduate programs while continuing in the double major mathematics program and finishing it within ten semesters after enrolling in their host undergraduate programs.

MINOR PROGRAM

The minor program in mathematics is designed to give the students a short view of what constitutes modern mathematics beyond the more computational Calculus courses. The mathematics courses taken by students in other disciplines are usually geared towards using certain methods. However, one might also want to understand the reasons, mechanisms, and the axiomatic structure underlying the results. For this, one must also learn the proofs of mathematical theorems and obtain from them further mathematical results. This is what is generally considered doing mathematics.

In the minor program, students take 4 required courses, 2 from each of mathematics' two classical well-established areas, algebra and analysis. They form a well-balanced introduction to modern mathematics. They are also essential for an understanding of more advanced courses in these and other areas, two of which should be taken as electives. A good selection of electives would include courses in other areas as well so that students would have an idea of some of the newer developments in modern mathematics. The purpose is not to specialize in a narrow area, but rather to broaden one's understanding.

Prerequisite Courses:

MATH 102 Calculus II
MATH 106 Introduction to Calculus II
MATH 114 Multi Variable Calculus
MATH 116 Intermediate Calculus III

CURRICULUM

Courses		Credits / ECTS Credits
MATH 213	Advanced Calculus I	3 / 6
MATH 323	Algebra I	3 / 6
	Electives (2)	6 / 12
	MATH 202 or MATH 302	3 / 6
	MATH 223 or MATH 224	3 / 6

ELECTIVE COURSES

MATH 214	Advanced Calculus II	3 / 6
MATH 215	Mathematical Analysis	3 / 6

MATH 224	Linear Algebra II	3 / 6
MATH 240	Differential Equations	3 / 6
MATH 253	Introduction to Number Theory	3 / 6
MATH 302	Complex Analysis II	3 / 6
MATH 313	Real Analysis I	3 / 6
MATH 314	Real Analysis II	3 / 6
MATH 324	Algebra II	3 / 6
MATH 345	Differential Geometry I	3 / 6
MATH 346	Differential Geometry II	3 / 6
MATH 414	Functional Analysis	3 / 6
MATH 431	Introduction to Algebraic Geometry	3 / 6
MATH 443	Partial Differential Equations	3 / 6
MATH 453	Algebraic Number Theory	3 / 6

GRADUATE PROGRAM

The aim of the program is to develop students into mathematicians who can pursue original and creative research. The program emphasizes research in pure and applied mathematics. At present, research in the graduate program is focused on algebra, algebraic number theory, algebraic geometry, algebraic topology, analytic number theory, complex analysis, functional analysis, non-linear differential equations and general relativity.

Master of Science in Mathematics

Admission: All applicants are required to have a B.S. degree in mathematics, or in a related field of science or engineering. Students with a B.S. degree in areas other than mathematics may be requested to take several undergraduate courses in the field to acquire necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
MATH 599	Master's Thesis	- / 56
	Core Graduate Electives (3)	9 / 22.5
	Graduate Elective	3 / 7.5
	Graduate Seminars in Mathematics	- / 1
	MATH Graduate Electives (2)	6 / 15
	Restricted Graduate Elective	3 / 7.5

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

MATH Graduate Elective Courses: All 5XX or higher level MATH coded courses with at least 3 credits.

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

Restricted Graduate Elective Courses: MATH 502, MATH 504, MATH 524, MATH 544

Doctor of Philosophy in Mathematics

Admission: All applicants are required to have a M.S. degree with thesis in mathematics, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
MATH 699	Ph.D. Dissertation	- / 140
	Core Graduate Electives (2)	6 / 16
	Graduate Elective	3 / 7.5
	Graduate Seminars in Mathematics	- / 1
	MATH Graduate Electives (2)	6 / 15
	Restricted Graduate Electives (2)	6 / 15

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

MATH Graduate Elective Courses: All 5XX or higher level MATH coded courses with at least 3 credits.

Restricted Graduate Elective Courses: MATH 502, MATH 504, MATH 524, MATH 544

COURSE DESCRIPTIONS

MATH 101 Calculus I
Limits and continuity. Differentiation and applications (linearization, optimization, curve sketching, l'Hôpital's rule). Integration and applications (areas, volumes, arc lengths, surface areas). Transcendental functions. Integration techniques. Improper integrals. *Credit units: 4 ECTS Credit Units: 7. Aut (Ç. Güneş Aktaş, M. Kocatepe, A. Pamir, A. S. Sertöz, M. O. Tekman, B. R. Yavuz, N. Zheltukhina) Spr (M. A. Erdal, A. M. Güloğlu, H. Yeşilyurt, N. Zheltukhina)*

MATH 102 Calculus II
Sequences and series, power series, Taylor series. Functions of several variables: partial derivatives and gradient, free and constrained extrema, multiple integrals, Fubini's theorems. Line integrals, Green's theorem. Surface integrals, Divergence theorem, Stokes' theorem. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 101 or MATH 112 or MATH 113. Aut (A. M. Güloğlu, H. T. Kaptanoğlu, Z. Ural, Ö. Ünlü, H. Yeşilyurt) Spr (G. Alpan, A. Degtyarev, Ç. Güneş Aktaş, M. Gürses, A. Klyachko, M. Kocatepe, A. Pamir, A. S. Sertöz, M. O. Tekman, B. R. Yavuz)*

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

MATH 103 Introductory Mathematics
Real numbers, integral and fractional exponents. Polynominals, factoring polynomials, rational expressions. Linear equations, quadratic equations and quadratic formula. Functions and graphs, graphing polynominals. Inverse functions. Parabola, circle, ellipse, hyperbola. Exponential functions, logarithmic functions, exponential growth and decay. Elementary plane geometry, trigonometric functions of acute angles, trigonometric functions of arbitrary angles graphs of trigonometric functions. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Kadayıfçılar)*

MATH 105 Introduction to Calculus I
Inequalities, absolute value. Cartesian plane, graphs of equations (lines, circles and parabolas). Functions, functions in economics, trigonometric functions. Limits, continuity. Derivative, differentiation rules, chain rule, implicit differentiation, marginal functions in economics. Maximum and minimum values, increasing and decreasing functions, the first derivative test, concavity, the second derivative test, curve sketching using calculus, optimization problems and applications in business and economics. *Credit units: 4 ECTS Credit Units: 7. Aut (M. G. Davenport, A. Katsampekis) Spr (A. Altaban, A. Katsampekis)*

MATH 106 Introduction to Calculus II
Indefinite integral, definite integral, fundamental theorem of calculus, method of substitution, area between two curves. Inverse functions and their derivatives, exponential and logarithmic functions, inverse trigonometric functions. Indeterminate forms and l'Hôpital's Rule. Geometric series, compound interest, exponential growth and decay. Techniques of integration (integration by parts, rationalizing substitution, partial fractions), improper integrals. Differential equations (separable and first-order linear equations) and initial-value problems. Three-dimensional coordinate system, functions of several variables, partial derivatives, the chain rule. Maximum and minimum values, the second partials test, the method of Lagrange Multipliers. Double integrals. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 105. Aut (G. Alpan, A. Goncharov) Spr (M. G. Davenport, A. Goncharov)*

MATH 119 Statistics for Lawyers
This course introduces students of law the basic ideas of probability and statistics. Topics covered include data evaluation and analysis, conditional probabilities, distributions, Bayesian methods, sampling, confidence intervals, hypothesis testing and elementary regression analysis. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Akçay) Spr (M. Akçay)*

MATH 123 Abstract Mathematics I
Propositions. Sets. Relations. Equivalence relations and equivalence classes. Functions. Natural numbers and Peano axioms. Principle of mathematical induction. Integers. Rational numbers. Cantor's construction of real numbers. Least upper bound property. *Credit units: 4 ECTS Credit Units: 7. Aut (A. M. Güloğlu)*

MATH 124 Abstract Mathematics II
Cardinality, countable and uncountable sets. Cantor set. Axiom of choice, infinite products. Partial orderings, Zorn's lemma. Well ordered sets. Groups, normal subgroups and factor groups. Rings and fields. Ideals and quotient rings. Ordered fields and Dedekind's construction of real numbers. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 123. Spr (M. Gelvin)*

MATH 132 Discrete and Combinatorial Mathematics
Fundamental principles of counting, including rules of sums and product, permutations and combinations. Fundamentals of logic and integers, including mathematical induction, recursive definitions, prime numbers, greatest common divisor, cartesian products and relations, pigeonhole principle, partial orders, equivalence relations and partitions. The principle of inclusion and exclusion. Sums and recurrence relations: first and second order linear recurrence relations, finite and infinite calculus, infinite sums. Integer functions including floor and ceiling applications and recurrences, and the modulo operation. Generating functions including the method of generating functions for solving recurrences and exponential generating functions. Introduction to graph theory including graph isomorphism, Euler tours, Hamiltonian paths and cycles, planar graphs, and graph coloring. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 101 or MATH 111 or MATH 113. Aut (A. Klyachko) Spr (M. Sezer, Ö. Ünlü)*

MATH 202 Complex Analysis
Algebra of complex numbers, topology of the complex plane. Analytic functions, Cauchy-Riemann equations, power series. Complex line integrals, Cauchy theorem, Cauchy integral formula, Taylor series. Mean value property, Liouville theorem, isolated zeros, uniqueness theorem, maximum modulus principle. Isolated singularities, singularities at infinity, Laurent series. Residues, evaluation of improper integrals. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 114. Aut (A. Degtyarev)*

MATH 210 Finite and Discrete Mathematics
Sets and propositions. Mathematical induction. Recurrence relations. Graph theory: trees, Euler paths, planar graphs, graph isomorphism. Enumerative combinatorics: binomial coefficients, pigeonhole principle, relations and incidence matrices, functions, isomorphism of posets, Hasse diagrams, equivalence relations, Stirling numbers of the second kind. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Klyachko)*

MATH 213 Advanced Calculus I
The real number system, least upper bound property. Sequences in R, Cauchy sequences, limsup and liminf. Limit and continuity in R, uniform continuity. Differentiation in R. Riemann integral in R, fundamental theorem of calculus. Infinite series of numbers, absolute convergence. Sequences and series of functions, uniform convergence, power series. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (MATH 123 and MATH 114) or (MATH 123 and MATH 102) . Aut (E. Yalçın)*

MATH 214 Advanced Calculus II
Euclidean spaces, topology of $\mathbf{R}^n$. Differentiability on $\mathbf{R}^n$, differentials, inverse and implicit function theorems. Riemann integral on $\mathbf{R}^n$, Jordan regions, change of variables. Vector calculus, curves and surfaces, Green, Gauss, Stokes theorems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 213. Spr (B. Ünal)*

MATH 215 Mathematical Analysis
The real number system. The complex field. Finite, countable, uncountable sets. Metric spaces. Compact sets, connected sets. Sequences, Cauchy sequences. Series of numbers, summation by parts. Continuity, uniform continuity. Continuity and compactness, continuity and connectedness. Sequences and series of functions. Uniform convergence and continuity/integration/differentiation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 106 or MATH 114 or MATH 116.*

MATH 220 Linear Algebra
Introduction to matrices. Fields and vector spaces, linear transformations, change of basis. Linear equations, existence and classification of solutions, Gaussian elimination and LU decomposition. Characteristic equation of a matrix: eigenvalues, eigenvectors and the Jordan form. Numerical techniques for computing eigenvalues and eigenvectors. Inner product spaces, quadratic forms. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Sezer) Spr (E. Yalçın)*

MATH 223 Linear Algebra I
Solving systems of linear equations. Vector spaces and linear transformations. Bases, matrix representations and coordinate transformations. Rank-Nullity Formula. Cayley-Hamilton Theorem. Eigenspaces and generalized eigenspaces. Determinants. Jordan canonical forms. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Yalçın)*

MATH 224 Linear Algebra II
Canonical forms, minimal polynominal. Dual spaces and adjoints. Inner product spaces. Orthonormal bases and Gram-Schmidt orthogonalization. Bilinear forms, quadratic forms and Sylvester's Law of Inertia. Symmetric, hermitian, orthogonal and unitary operators and their spectral theorems. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 223. Spr (A. M. Güloğlu)*

MATH 225 Linear Algebra and Differential Equations
Systems of linear equations, Elimination methods, matrices and matrix operations. Invertible matrices, determinants. Vector spaces, basis and dimension. Inner product spaces, orthogonality, orthogonal basis, rank and nullity. Eigenvalues and eigenvectors, systems of differential equations, matrix-valued functions. First and second order linear differential equations. n-th order linear differential equations, method of undetermined coefficient, variation of parameters. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 102 or MATH 106. Aut (Y. Kurtulmaz, U. Muğan, B. Ünal) Spr (H. T. Kaptanoğlu, Y. Kurtulmaz, B. Ünal)*

MATH 227 Introduction to Linear Algebra
Introduction to matrices, basic definitions and properties. Linear equations; inverse and rank of a matrix; existence and classification of solutions; Gaussian elimination. Characteristic equation of a matrix; eigenvalues, eigenvectors. Numerical techniques. Applications. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 106. Aut (M. Gelvin) Spr (L. J. Barker)*

MATH 230 Probability and Statistics for Engineers
Basic concepts of probability (sample spaces and events, permutations, combinations, conditional probability and independence). Discrete and continuous random variables, their probability distributions, expected value and distribution parameters. Discrete probability distributions: Binomial, geometric, negative binomial, Poisson distributions. Continuous probability distributions: uniform, normal, exponential, gamma and chi-squared distributions. Jointly distributed and independent Random Variables. Covariance and correlation. The sampling distribution of sample mean. Central Limit Theorem and its applications. Estimation. Confidence Intervals, Hypothesis Testing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 112 or MATH 114. Aut (D. Güvenç) Spr (İ. Apaydın)*

MATH 240 Differential Equations
First and second order differential equations, existence and uniqueness of solutions. Linear homogeneous differential equations. Linear nonhomogeneous equations: the methods of undetermined coefficients and variation of parameters, reduction of order. Series solution of second order equations. Systems of first order differential equations. Solution by Laplace transforms. Numerical solution techniques. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 112 or MATH 114. Aut (F. Atay) Spr (U. Muğan)*

MATH 241 Engineering Mathematics I
Introduction to complex algebra. Systems of linear equations, Gaussian elimination. Vector spaces and their extension to complex case, linear dependence/independence, bases. Matrix algebra, determinant, inverse, factorization. Eigenvalue problem, diagonalization, quadratic forms. Linear approximation, curve fitting. Linear constant coefficient difference equations and the z-transform. Linear constant coefficient differential equations and the Laplace transform. System of linear differential equations. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 102 or MATH 112 or MATH 114. Aut (T. Çukur, H. Köymen, N. Şahin) Spr (H. Köymen)*

MATH 242 Engineering Mathematics II
Differential equations of first order, separable equations. Linear differential equations of higher order, homogeneous and nonhomogeneous equations. Numerical solutions of differential equations. Runge-Kutta method, boundary-value problems. Differential calculus of functions of several variables, Taylor series approximation. Jacobians, maxima and minima of a function, Method of Lagrange multipliers. Functions of a complex variable, differential complex calculus. Complex integration, Cauchy's theorem. Complex series, Taylor and Laurent series. Residue theorem. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: MATH 241. Aut (A. B. Özgüler) Spr (N. Şahin)*

MATH 250 Introduction to Probability
Basic concepts of probability, conditional probability. Random variables, expectation and variance. Binomial, geometric, negative binomial, hypergeometric, Poisson random variables. Moment generating functions. Continous random variables: Uniform, Exponential, Gamma, Normal, Beta, Weibull distributions. Bivariate and marginal distributions. Conditional distributions, covariance and correlation coefficient, conditional expectations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 102 or MATH 112 or MATH 114. Aut (A. Kerimov) Spr (A. Kerimov)*

MATH 253 Introduction to Number Theory
Divisibility, congruences, quadratic reciprocity, arithmetical functions, irrational numbers, simple continued fractions, Diophantine equations. *Credit units: 3 ECTS Credit Units: 6. Spr (H. Yeşilyurt)*

MATH 255 Probability and Statistics
Basic concepts of probability, expectation and variance, distribution functions, Bayes' formula, marginal and conditional distributions, the distributions of sample statistics, law of large numbers, central limit theorem, introduction to hypothesis testing. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MATH 102. Aut (E. Arıkan) Spr (E. Arıkan)*

MATH 260 Introduction to Statistics
Descriptive statistics, sampling and sampling distributions. Introduction to estimation theory, method of maximum likelihood and method of moments, interval estimation. Tests of hypotheses, two population problems, correlation. Simple linear regression analysis, nonlinear regression. Multiple regression analysis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 250. Aut (A. Goncharov) Spr (D. Güvenç)*

MATH 262 Statistical Methodology
Organization and description of data. Basic concepts of probability. Binomial, Poisson distributions. The normal distribution. X^2, t and F distributions. Simple and multiple regression. Analysis of categorical data. Some nonparametric tests. Biological and medical science applications using a statistical software such as MINITAB or SAS. *Credit units: 3 ECTS Credit Units: 6. Spr (M. Akçay)*

MATH 264 Statistics for Social Sciences
Introduction to statistics with special emphasis on the utilization of statistical methods in social sciences: Organization of data, measures of center and variability. Basic probability concepts. Discrete and continuous random variables and their distributions. Inferences about the mean. Applications using statistical computer programs. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Apaydın, A. Durukal) Spr (A. Durukal)*

MATH 291 Summer Project I
A project on a specific topic in an area of mathematics to be carried out by the students under the supervision of a faculty member. *Credit units: None ECTS Credit Units: 3.*

MATH 302 Complex Analysis II
Evaluation of sums by residues. Argument principle, Rouche theorem, open mapping theorem. Conformal mapping, mapping by elementary functions. Riemann sphere, linear fractional transformations. Schwarz lemma, automorphisms of the disc and the upper half plane. Schwarz-Christoffel transformations. Applications to fluid flow and electrostatics. Harmonic functions, Poisson integral formula. Infinite products, entire and meromorphic functions, gamma and zeta functions. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 202 or MATH 210. Spr (H. T. Kaptanoğlu)*

MATH 310 Topology
Topological spaces, connected and compact spaces, continuous functions, product spaces, the Tychonoff theorem, separation axioms, separation by continuous functions, complete metric spaces, applications. Fundamental group and covering spaces: homotopy, fundamental group, covering spaces. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Yalçın)*

MATH 313 Real Analysis I
Metric spaces, sequences, completeness, Baire's theorem. Continuity. Completion of a metric space. Compactness and connectedness. Contraction mapping theorem and its applications. Product spaces. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 213. Aut (A. S. Üstünel)*

MATH 314 Real Analysis II
Lebesgue outer measure, measurable sets. Lebesgue integral, convergence theorems. Functions of bounded variation, absolutely continuous functions. L^p spaces. General measure and integration theory. Radon-Nikodym theorem. Product measures, Fubini's theorem. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 313. Spr (A. S. Üstünel)*

MATH 323 Algebra I
Symmetries of regular polygons and polyhedra. Permutation groups and abstract groups. Lagrange's Theorem and the Orbit-Stabilizer Theorem. Quotient groups and the Isomorphism Theorems. Sylow's Theorem. Direct and Semidirect Product Recognition Theorems. Symmetric and alternating groups. The simplicity of the alternating groups of degree at least 5. Classical linear groups. Rings. The Chinese Remainder Theorem, primitive roots, and the Structure Theorem for Finitely-Generated Abelian Groups. Jordan-Holder Theorem. *Credit units: 3 ECTS Credit Units: 6. Aut (L. J. Barker)*

MATH 324 Algebra II
Symmetries of polynomial equations. Rings and modules. Quotient rings and polynomial rings. Field Extensions. Ruler-and-compass constructions. Euclidean domains, principal ideal domains, unique factorization domains. Finitely generated modules of principal ideal domains. Eisenstein's Criterion. Galois groups. The Fundamental Theorem of Galois Theory. The Unsolvability of the Quintic. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 323. Spr (M. Gelvin)*

MATH 330 Applied Mathematics
Credit units: 3 ECTS Credit Units: None.

MATH 345 Differential Geometry I
Euclidean spaces and differential forms, frames, calculus on surfaces. Shape operators. Gaussian and mean curvatures. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 214.*

MATH 346 Differential Geometry II
Intrinsic geometry of surfaces. Riemannian geometry. Geodesics. Gauss-Bonnet theorem. Global structure of surfaces. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 345.*

MATH 391 Summer Project II
A project on a specific topic in an area of mathematics to be carried out by the students under the supervision of a faculty member. *Credit units: None ECTS Credit Units: 3.*

MATH 414 Functional Analysis
Normed spaces. Compactness in Banach spaces. Linear operators. Dual spaces, reflexivity. Hilbert spaces. Orthogonal sequences in Hilbert spaces. Operators in Hilbert spaces. Hahn-Banach theorem. Uniform boundedness principle. Open mapping and closed graph theorems. Weak and weak* convergence. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 313.*

MATH 420 Introduction to Cryptography
This course is designed as an introduction to public key cryptology. We will review the mathematical background material as needed but rather than giving rigorous proofs of the theorems we emphasize their computational aspects by presenting algorithms and their implementations . Topics include Diffie-Hellman Key Exchange, Standard and Elliptic ElGamal Public Key Cryptosystem, RSA Public Key Cryptosystem, The Knapsack Cryptosystem, Digital Signatures and Hash Functions. *Credit units: 3 ECTS Credit Units: 6.*

MATH 430 Introduction to Complex Geometry
Vector bundles. Sheaf theory and sheaf cohomology. Kähler manifolds. Chow rings. Lefschetz (1,1)-theorem. The Hodge conjecture, i.e. the (p,p) version of Lefschetz's theorem. *Credit units: 3 ECTS Credit Units: 6. Spr (A. S. Sertöz)*

MATH 431 Introduction to Algebraic Geometry
Plane curves, conics and cubics. Affine varieties, Hilbert basis theorem, Zarisky topology, Hibert's null stellennsatz. Coordinate rings, morphisms. Projective varieties, briational morphism. Smoothness, dimension and the tangent space. The 27 lines on a cubic surface. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 324 and MATH 345.*

MATH 443 Partial Differential Equations
Pfaffian systems, linear and nonlinear PDE's of first order. Second order PDE, characteristic curves and characteristic equations. Laplace equation, wave equation, heat equation. Method of integral transforms, Fourier series, Green's function. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 240 or MATH 242. Aut (U. Muğan)*

MATH 445 Analysis on Manifolds
The algebra and topology of Rn, review of differentiation and integration, inverse and implicit function theorems change of variables, tensors and differential forms, integration on chains, integration on manifolds, and Stokes' theorem. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Ünal)*

MATH 453 Algebraic Number Theory
Principal ideal domains, unique factorization domains, residue classes. Algebraic integers. Integral basis. Discriminant. Quadratic and cyclotomic extensions. Norm and trace. Ideals. Bounds for the discriminant. Units. Dirichlet's problem. Ramification of prime ideals. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 253 or MATH 324.*

MATH 473 Introduction to Financial Mathematics
Basic knowledge and techniques in financial mathematics: basic Black and Scholes model and its sophistications. Theory of discrete and continuous martingales, semimartingales. Stochastic integral, Ito formula, construction and solution of stochastic differential equations. Applications to option pricing and hedging problems for the European options. American options and the numerical problems of the solutions of second order elliptic equations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 250 or MATH 314. Aut (A. S. Üstünel)*

MATH 474 Financial Mathematics
Calculations practiced in option marketing. Fundamentals of Ito Calculus, and its applications to calculations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 250 or MATH 314. Spr (A. S. Üstünel)*

MATH 491 Senior Project I
A project on a specific topic in an area of mathematics to be carried out by the students under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Gelvin) Spr (M. Gelvin)*

MATH 492 Senior Project II
A project on a specific topic in an area of mathematics to be carried out by the students under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (M. Gelvin) Spr (M. Gelvin)*

MATH 500 Mathematical Analysis
Metric spaces, sequences, completeness, Baire's theorem. Continuity. Completion of a metric space. Compactness and connectedness. Contraction mapping theorem and its applications. Product spaces. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. S. Üstünel)*

MATH 501 Real Analysis I
Concepts of integration. Generalized Riemann Integral. Borel Sets, Bair Functions. Outer Measures. Measurable Sets. Lebesgue Measure. Lebesgue density theorem. Hausdorff Dimension. Measurable Functions. Lusin's and Egorov's Theorems. Limit Theorems for Lebesgue Integral. Differentiation of Lebesgue Integral. Spaces of Integrable Functions. Signed Measures. The Radon-Nikodym Theorem. *Credit units: 3 ECTS Credit Units: 7.5. Aut (H. T. Kaptanoğlu)*

MATH 502 Real Analysis II
Topological vector spaces. Metrizability. Locally convex spaces. Boundedness and normability. Barreled spaces. Banach-Steinhaus theorem. Dual pairs and polar topologies. Topologies on spaces of linear mappings. Inductive and projective limits. Distributions. Elements of spectral theory. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 503 Complex Analysis I
Complex differentiability and Cauchy-Riemann equations. Holomorphic functions and primitives. Local Cauchy theorems, Morera theorem, power series representations, and fundamental properties of holomorphic functions. Logarithms, winding numbers, and global Cauchy theorems. Singularities, Laurent series, and residue theorem. Argument principle and open mapping theorem. Conformal mapping, Schwarz-Pick lemma, and Möbius transformations. Normal families and Riemann mapping theorem. Harmonic and subharmonic functions, Poisson integrals, and Schwarz reflection principle. Simply connected plane domains. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. S. Sertöz)*

MATH 504 Complex Analysis II
Runge theorem and Mittag-Leffler theorem. Infinite products and Weierstrass factorization theorem. Jensen formula and Blaschke products. Special functions. Carathéodory and Lindelöf theorems. Analytic continuation, gap series, and monodromy theorem. Cauchy-Pompeiu formula and inhomogeneous d-bar equation. Spaces of holomorphic functions. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 505 Introduction to Complex Geometry
Vector bundles. Sheaf theory and sheaf cohomology. Kähler manifolds. Chow rings. Lefschetz (1,1)-theorem. The Hodge conjecture, i.e. the (p,p) version of Lefschetz's theorem. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. S. Sertöz)*

MATH 509 Topics in Operator Theory
Spectral theory of linear operators in normed linear spaces. Banach algebras. Spectral theory of compact operators. Bounded selfadjoint operators. Unbounded selfadjoint operators. Unbounded linear operators in quantum mechanics. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 523 Algebra I
Category-theoretic language. Review of groups, rings, modules. Applications of Zorn's Lemma, including the algebraic closure of a field. Galois theory. *Credit units: 3 ECTS Credit Units: 7.5. Aut (L. J. Barker)*

MATH 524 Algebra II
Rings, modules and endomorphism rings. Idempotents and indecomposable modules. Jacobson radical. Artinian and Noetherian rings. Artin-Wedderburn Theorem. Levitsky's Theorem. Krull-Schmidt Theorem. Maschke's Theorem and finite group representations. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Staff)*

MATH 525 Group Representations
Representation as linear action. Existence of invariant metric. Maschke theorem. Schur's lemma. Multiplicity of irreducible component in regular representation. Structure of group algebra. Characters and presentations of abelian groups, duality. Characters of nonabelian groups. Central idempotent and the first orthogonality relation. Completeness of the set of characters and the second orthogonality relation. Induced representations and characters. Mackey criterion of irreducibility. Representations of symmetric group. Representations of supersolvable groups. Real representations and Schur's index. Other applications of induced representations. Degrees of irreducible representations. Compact groups, Haar measure. Linear representations of compact groups. Unitary trick. Representations of general linear and unitary groups. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 541 Manifold Theory
Differentiable manifolds, smooth mappings, tangent cotangent bundles, differential of a map, submanifolds, immersions, imbeddings, vector fields, tensor fields, differential forms, orientation on manifolds, integration on manifolds, Stokes' theorem. Lie derivative of tensor fields. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Ünal)*

MATH 543 Methods of Applied Mathematics I
Functions spaces, orthogonal polynomials and Fourier analysis, generalized functions. Ordinary differential equations, Green's function, Sturm-Liouville problem, hypergeometric functions. Perturbation methods, regular perturbations, singular perturbations, boundary layer analysis, the WKB approximation. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. Gürses)*

MATH 544 Methods of Applied Mathematics II
Calculus of variations, necessary conditions for extrema, isoperimetric problems. Partial differential equations. Cauchy Kowalevsky theorem, linear, quasi-linear, half-linear equations. Initial and boundary value problem for the wave and heat equations, Riemann method. Laplace equation, minimum and maximum principles. Integral transforms. Stability and bifurcation. Inverse scattering transform. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. Gürses)*

MATH 550 Probability and Statistics
Mathematical foundations of Probability theory. Random walk. Consequence of probability measures. Sequences and sums of independent random variables. Markov chains. Percolation theory. *Credit units: 3 ECTS Credit Units: 6.*

MATH 573 Introduction to Financial Mathematics
Basic knowledge and techniques in financial mathematics: basic Black and Scholes model and its sophistications. Theory of discrete and continuous martingales, semimartingales. Stochastic integral, Ito formula, construction and solution of stochastic differential equations. Applications to option pricing and hedging problems for the European options. American options and the numerical problems of the solutions of second order elliptic equations. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. S. Üstünel)*

MATH 574 Financial Mathematics
Calculations practiced in option marketing. Fundamentals of It Calculus, and its applications to calculations. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. S. Üstünel)*

MATH 585 Topics in Ordinary Differential Equations I
Credit units: 3 ECTS Credit Units: 6, Prerequisite: Consent of the Instructor. Spr (F. Atay)

MATH 586 Topics in Ordinary Differential Equations II
Credit units: 3 ECTS Credit Units: None, Prerequisite: Consent of the Instructor.

MATH 597 Graduate Seminars in Mathematics I
Each graduate student who enrolls must present at least one one-hour talk about his/her research topic. Attendance to the seminars is mandatory. *Credit units: None ECTS Credit Units: 1. Aut (E. Yalçın) Spr (E. Yalçın)*

MATH 598 Graduate Seminars in Mathematics II
Each graduate student who enrolls must present at least one one-hour talk about his/her research topic. Attendance to the seminars is mandatory. *Credit units: None ECTS Credit Units: 1. Aut (E. Yalçın) Spr (E. Yalçın)*

MATH 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (M. Kocatepe) Spr (M. Kocatepe)

MATH 606 Selected Topics in Functional Analysis
Prerequisite: Consent of the Instructor. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Goncharov)*

MATH 609 Several Complex Variables
General theory: Holomorphic functions of several complex variables, integral formulas, Bergman kernel, domains of holomorphy, holomorphic convexity, plurisubharmonicity, d-bar problem. Special theory: Function theory on the unit ball, automorphisms, Hardy spaces, boundary behavior. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 611 Algebraic Topology I
Categories and functors, homotopy of paths, homotopy of maps, fundamental groups, higher homotopy groups, homology of complexes, chain homotopy, standard simplices, the singular complex, singular homology, excision theorem, Mayer-Vietoris sequences, applications of homology. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Degtyarev)*

MATH 612 Fibre Bundles I
A review of homotopy theory; obstruction theory. Vector bundles as a special case of Steenrod bundles; the principal bundle and associated fibrations. Characteristic classes as first obstructions; basic properties, Cartan's formula. The rings of characteristic classes. The splitting principle and further properties. Characteristic classes and manifolds; applications to cobordisms (Thom's theorem). An introduction to Schubert calculus. The topological Riemann-Roch theorem. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Degtyarev)*

MATH 616 Topics in Group Theory
Credit units: 3 ECTS Credit Units: None.

MATH 625 Homological Algebra
The course starts with standard material on homological algebra and continues with a special interest topic with instructor's consent such as special applications and calculations in algebraic topology, algebraic geometry or cohomology of groups. The standard part includes material on modules, categories, extensions of modules, derived functors and spectral sequences. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 632 Computational Commutative Algebra
Grobner bases, applications to operations on ideals, zero dimensional ideals, local monomial orders and ideals of leading forms, Grobner bases for modules, Grobner bases of toric ideals, applications to some other classes of ideals that appear in combinatorial commutative algebra. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 633 Algebraic Geometry I
Transcendental theory; Complex algebraic varieties, line bundles and divisors, Riemann surfaces as algebraic curves, Hurwitz's theorem, Riemann-Roch theorem, uniformization, surfaces, Kodaira dimension, main classification theory of surfaces via birational theory, Chern classes, fixed point theorems, residues, spectral sequences. *Credit units: 3 ECTS Credit Units: 6.*

MATH 645 Riemannian Geometry I
Smooth Manifolds, Riemannian Metrics and Levi-Civita Connections. Covariant Differentiation of Vector Fields. Riemannian Manifolds. Curvature, Geodesics, Exponential Map, Normal Coordinates. Sectional, Ricci and Scalar Curvatures. Gradient, Divergence and Laplacian Operators. Riemannian Submanifolds, Induced Connection, Second Fundamental Form, Formulae of Gauss and Weingarten. Equations of Gauss, Codazzi and Ricci. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 646 Riemannian Geometry II
The Gauss lemma, Riemannian distance, Riemannian completeness, Hopf-Rinow theorem. Jacobi fields, symmetric spaces, isometries and killing vector fields. First and second variations, the index form, conjugate and focal points, homogeneous spaces, lie groups and lie algebras. Complex and almost complex manifolds. Hermitian and Kaehlerian manifolds. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 653 Introduction to Analytical Number Theory
Primes in an arithmetic progression; Gauss' sum; primitive characters; Dirichlet's class number formula; the distribution of the primes; Riemann's zeta-function and Dirichlet L-functions; Explicit formulae and prime number theorems; the large sieve and Bombieri-Vinogradov theorem. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 654 Analytic Number Theory
Integer points, trigonometric sums, infinite products, entire functions, the gamma function, the Riemann zeta-function, zeros of the zeta-function, the prime number theorem, Drichlet L-functions, primes in arithmetic progressions, the circle method, the Goldbach conjecture, Waring's problem. *Credit units: 3 ECTS Credit Units: 7.5.*

MATH 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (M. Kocatepe) Spr (M. Kocatepe)

DEPARTMENT OF MOLECULAR BIOLOGY AND GENETICS

I. Yuluğ (Chair), M. A. Cevher, Ç. Çekiç, O. Çizmecioğlu, E. Erbay, S. İ. Göktuna, A. O. Güre, İ. Gürsel, Ö. Konu, T. Özçelik, Ö. Şahin.

Part-time: T. L. Chau, E. Erikçi.

The Department of Molecular Biology and Genetics provides undergraduate and graduate courses in basic and applied areas of molecular biology and genetics. The undergraduate program offers B.S. degree in Molecular Biology and Genetics and the graduate program leads to M.S. and Ph.D. degrees in Molecular Biology and Genetics. The department is equipped with modern facilities for gene expression analysis, cell biology, protein chemistry, recombinant DNA technology and animal experiments. The education is research oriented. The undergraduate program concentrates initially on basic knowledge in life sciences and related fields, followed by a specialized training in molecular biology and genetics. Research laboratories of the department are used for graduate student training and for the senior projects for undergraduate students. The main research activities of the department are on molecular genetics, molecular biology, molecular cell biology, basic and applied immunology, structure-function relationship of proteins and new biotechnologies.

UNDERGRADUATE PROGRAM

The undergraduate program aims to equip students with basic knowledge in life sciences with special emphasis on molecular biology and genetics. The education program in the first two years concentrates on basic knowledge in biology and genetics in addition to physics, chemistry and mathematics. The last two years are dedicated to a specialized training in molecular biology, molecular cell biology and molecular genetics, bioinformatics. Theoretical courses are completed with laboratory courses with hands-on experiments.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 101	Principles of Chemistry I	4 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
MBG 101	Biology I	4 / 7
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CHEM 102	Principles of Chemistry II	4 / 6
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
MBG 102	Biology II	4 / 7
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 233	Principles of Organic Chemistry I	3 / 6
CS 113	Introduction to Computing	4 / 7
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
MBG 210	Genetics	4 / 7
PHYS 101	General Physics I	4 / 6

Spring Semester		Credits / ECTS Credits
CS 114	Introduction to Programming	4 / 7
GE 251	Collegiate Activities Program II	1 / 1

MATH 262	Statistical Methodology	3 / 6
MBG 223	Molecular Genetics	4 / 7
PHYS 102	General Physics II	4 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
HUM 111	Cultures Civilizations and Ideas I	3 / 6
MBG 301	Molecular Biology of the Cell I	3 / 6
MBG 311	Biochemistry I	4 / 7
MBG 324	Molecular Biology of the Gene	4 / 7
MBG 326	Introduction to Bioinformatics	3 / 6

Spring Semester		Credits / ECTS Credits
HUM 112	Cultures Civilizations and Ideas II	3 / 6
MBG 302	Molecular Biology of the Cell II	4 / 7
MBG 312	Biochemistry II	3 / 6
MBG 316	Physiology	3 / 6
MBG 338	Microbiology	4 / 7

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
MBG 391	Summer Practice	- / 9
MBG 416	Science and Ethics	3 / 6
MBG 491	Senior Project I	3 / 6
	Restricted Elective	3 / 6
	Technical Elective	3 / 6
	Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
MBG 418	Genomics	4 / 6
	Non Technical Electives (2)	6 / 12
	Restricted Elective	3 / 6
	Technical Elective	3 / 6

RESTRICTED ELECTIVES

MBG 415	Genetic Engineering and Biotechnology	3 / 6
MBG 470	Immunology	3 / 6
MBG 471	Membrane Biology	3 / 6
MBG 472	Introduction to Stem Cells	3 / 6
MBG 473	Biomolecules, Biomaterials and Bioprocesses	3 / 6
MBG 474	Introduction to Computational Biology	3 / 6
MBG 475	Molecular Basis of Evolution	3 / 6
MBG 480	Cell Cycle and Apoptosis	3 / 6
MBG 481	Protein Chemistry	3 / 6
MBG 482	Computational Approaches to Biology	3 / 6
MBG 483	Developmental Biology	3 / 6
MBG 485	DNA Damage and Repair Mechanisms	3 / 6
MBG 487	Special Techniques in Molecular Genetics	3 / 6
MBG 488	Introduction to Human Genetics	3 / 6
MBG 489	Genetics and Biology of Cancer	3 / 6
MBG 492	Senior Project II	3 / 6

MINOR PROGRAM

MBG minor program aims to provide introductory knowledge in life sciences with the selected emphasis on Molecular Biology and Genetics. The curriculum in the minor program provides a foundation in basic areas with the following aspects; the structure and expression of genes, biochemistry of proteins, cell signaling, development, the basis of inherited diseases, molecular biology of cancer, genomics and bioinformatics. Students are required to take four fundamental courses. "Biology I

and II" provide essential knowledge about molecules of the life, central dogma, DNA, RNA, proteins, organization of the cell, and embryogenesis and genetic diseases. These courses also provide an introduction to cell division and differentiation, molecular biology methods, recombinant DNA technology, and biotechnology, which help prepare the students for advanced courses. The "Principles of Genetics" course covers Mendelian genetics, theory of inheritance, genetic mapping, and population genetics topics in general. Finally, "Molecular Biology of the Cell" investigates how the molecular mechanisms, which are studied in the other courses, serve the cells. These courses will supply the knowledge for the minor candidates who will choose two advanced courses offered from our department related to their specific interests. Additional advanced courses can be selected according to the students' specific needs toward their future career. The department appoints an advisor for students in the program. All elective courses are subject to advisor approval.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
MBG 101	Biology I	4 / 7
MBG 102	Biology II	4 / 7
MBG 209	Principles of Genetics	3 / 6
MBG 301	Molecular Biology of the Cell I	3 / 6
	Electives (2)	6 / 12

ELECTIVE COURSES

MBG 316	Physiology	3 / 6
MBG 326	Introduction to Bioinformatics	3 / 6
MBG 415	Genetic Engineering and Biotechnology	3 / 6
MBG 416	Science and Ethics	3 / 6
MBG 418	Genomics	4 / 6
MBG 471	Membrane Biology	3 / 6
MBG 472	Introduction to Stem Cells	3 / 6
MBG 473	Biomolecules, Biomaterials and Bioprocesses	3 / 6
MBG 474	Introduction to Computational Biology	3 / 6
MBG 475	Molecular Basis of Evolution	3 / 6
MBG 480	Cell Cycle and Apoptosis	3 / 6
MBG 487	Special Techniques in Molecular Genetics	3 / 6
MBG 488	Introduction to Human Genetics	3 / 6
MBG 489	Genetics and Biology of Cancer	3 / 6

GRADUATE PROGRAM

The graduate programs are organized to provide an excellent training in basic and applied research areas of molecular biology and genetics. The main research activities of the department are on molecular genetics (genetic predisposition to cancer, tumor suppressor genes, gene-disease associations), molecular biology (regulation of transcription, differential expression, epigenetics), molecular cell biology (cell cycle, apoptosis, signal transduction). Immunology, bioinformatics, metabolic diseases.

Master of Science in Molecular Biology and Genetics

Admission: All applicants are required to have a B.S. degree in molecular biology and genetics, biology, or in a related field of science or engineering. Students with a B.S. degree in chemistry, chemical engineering, physics or a related field may also apply; however, such students may be requested to take several undergraduate courses in molecular biology and genetics to acquire necessary background in the field. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants

who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
MBG 502	Advanced Cellular Biology	3 / 7.5
MBG 503	Advanced Molecular Biology	3 / 7.5
MBG 505	Advanced Molecular Genetics	3 / 7.5
MBG 599	Master's Thesis	- / 56
	Seminars in Molecular Biology and Genetics	- / 1
	Unrestricted graduate electives (4)	12 / 24

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Unrestricted Graduate Elective Courses: Selected 5XX or higher level courses with at least 3 credits offered by different departments.

Doctor of Philosophy in Molecular Biology and Genetics

Admission: All applicants are required to have a M.S. degree with thesis in molecular biology and genetics or in biology. Other related professional degree holders such as M.D. or veterinary M.D. may also apply. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
MBG 601	Human Genetics	3 / 7.5
MBG 602	Molecular and Cellular Immunology	3 / 7.5
MBG 603	Molecular Bases of Cancer	3 / 7.5
MBG 699	Ph.D. Dissertation	- / 140
	Seminars in Molecular Biology and Genetics	- / 1
	Unrestricted graduate electives (4)	12 / 24

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Unrestricted Graduate Elective Courses: Selected 5XX or higher level courses with at least 3 credits offered by different departments.

MBG Graduate Elective Courses: All 5XX or higher level MBG coded courses with at least 3 credits.

COURSE DESCRIPTIONS

MBG 101 Biology I
Molecules of the life, central dogma (DNA, RNA, protein), organization of the cell, embryogenesis and genetic diseases. *Credit units: 4 ECTS Credit Units: 7. Aut (M. A. Cevher, A. O. Güre)*

MBG 102 Biology II
Introduction to cell division and differentiation introduction to the molecular biology methods, recombinant DNA technology, biotechnology. (Laboratory work is obligatory) *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MBG 101. Spr (S. İ. Göktuna)*

MBG 105 Principles of Biology
This course is for students from the Physics, Chemistry and Mathematics Departments. Molecules of life, organization of the cell, chromosomes and cell division, patterns of inheritance, evolution, recombinant DNA technology, genetic diseases. *Credit units: 3 ECTS Credit Units: 5. Aut (S. İ. Göktuna)*

MBG 110 Introduction to Modern Biology
This course is for students from Faculty of Engineering. Molecules of life, organization of the cell, chromosomes and cell division, genetics, molecular genetics, recombinant DNA technology, genetic diseases, evolution, animal development, biotechnology. *Credit units: 3 ECTS Credit Units: 6. Aut (T. L. Chau, E. Erikçi, T. Özçelik, Ö. Şahin) Spr (T. L. Chau, E. Erikçi, Ö. Şahin)*

MBG 209 Principles of Genetics
Transmission genetics, gene and chromosomal mutations, linkage and mapping, molecular genetic applications, population and quantitative genetics, molecular evolution, model organism genomics and bioinformatics. *Credit units: 3 ECTS Credit Units: 6. Aut (T. L. Chau)*

MBG 210 Genetics
Mendelian genetics, chromosome theory of inheritance, linkage, genetic mapping in eukaryotes and prokaryotes, chromosomal mutations, gene mutations, molecular genetics, population genetics, quantitative genetics, molecular evolution. *Credit units: 4 ECTS Credit Units: 7. Aut (T. L. Chau, Ö. Konu)*

MBG 222 Fundamentals of Molecular Genetics
Molecular biology of gene regulation, fundamentals of DNA repair and recombination, detailed analysis of transposition and retroposition in eukaryotes, molecular mechanisms of eukaryotic and prokaryotic protein synthesis. *Credit units: 3 ECTS Credit Units: 6. Spr (M. A. Cevher)*

MBG 223 Molecular Genetics
Mechanism of protein synthesis, usage of the genetic code, protein localization, the structure of genetic material, regulation of transcription, recombination, repair, and transposition in bacteria, an introduction to gene rearrangements. (Laboratory work is obligatory) *Credit units: 4 ECTS Credit Units: 7. Spr (M. A. Cevher)*

MBG 301 Molecular Biology of the Cell I
This course aims an in-depth understanding of cell signaling. We start by studying the signal/receptor families individually, and move on to a synthesis by studying examples from developmental biology and cancer. Selected original articles that from the foundations and principles of cell signaling are analyzed and criticized thoroughly as part of the coursework. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MBG 101 or MBG 105 or MBG 110. Aut (O. Çizmecioğlu)*

MBG 302 Molecular Biology of the Cell II
Germ cells and fertilization, early embryonic development, stem cells, generation and maintenance of differentiated cells, immune cells, cancer cells, specialized techniques in cell biology, light and fluorescent microscopy, flow cytometry, techniques used for cell proliferation and apoptosis studies. (Laboratory work is obligatory) MBG 301, consent of the instructor. *Credit units: 4 ECTS Credit Units: 7. Spr (O. Çizmecioğlu)*

MBG 311 Biochemistry I
Introductory biochemistry, bioenergetics, protein structure, protein purification and characterization, enzymatic activity, kinetics, allostery, vitamins and coenzymes. *Credit units: 4 ECTS Credit Units: 7. Aut (M. A. Cevher)*

MBG 312 Biochemistry II
Introduction to intermediary metabolism, polysaccharides, energy storage, lipids and membrane structure nucleic acid structure and nucleotide metabolism. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: consent of the instructor. Spr (E. Erbay)*

MBG 316 Physiology
Homeostatic and biological control mechanisms in major body systems, including skeletal system, muscle system, nervous system, circulatory system, respiratory system, digestive system, excretory system, reproductive system and immune system. *Credit units: 3 ECTS Credit Units: 6. Spr (O. Çizmecioğlu)*

MBG 324 Molecular Biology of the Gene
Molecular biology of eukaryotes including genome organization and chromosome structure, gene structure, protein structure and synthesis, regulation of gene expression. RNA splicing and processing, catalytic RNA. (Laboratory work is obligatory) *Credit units: 4 ECTS Credit Units: 7, Prerequisite: MBG 101 and MBG 102. Aut (I. Yuluğ)*

MBG 326 Introduction to Bioinformatics
Computer use in molecular biology networks, access to online databases, structure comparison, structure prediction. Homology based protein 3-D structure modeling. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Konu)*

MBG 338 Microbiology
Structure, growth and physiology of microorganisms, classification of bacteria, diverse activities of bacteria, viruses, microbial pathogenicity, exploitation of microorganisms by man. *Credit units: 4 ECTS Credit Units: 7. Spr (İ. Gürsel)*

MBG 391 Summer Practice
A project on a special topic in an area of biology to be carried out by the student under the supervision of a faculty member, at the department or another institution. *Credit units: None ECTS Credit Units: 9. Aut (Ö. Konu) Spr (Ö. Konu)*

MBG 416 Science and Ethics
Scientific concepts, history of science, the birth of modern science, science and society, ethics of science. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Erbay)*

MBG 418 Genomics
Structural organisations of human, D. melanogaster, C. elegans, A. thaliana, and yeast genomes. Gene orthologs, repetitive sequences, evolutionary aspects, functional genomics approaches and methodologies. *Credit units: 4 ECTS Credit Units: 6. Spr (A. O. Güre)*

MBG 452 Practical Biology
This course is for students from faculty of Education. Practical techniques for the biology laboratory, biological experiments, and problem solving in biology. The course involves one hour of discussion and four hours of laboratory work per week. The students carry out practical projects. *Credit units: 3 ECTS Credit Units: 6.*

MBG 470 Immunology
Adaptive and innate immunity, humoral and cell mediated immunity, the lymphoid system, antibody structure and function, antigen-antibody interactions, the antibody response, immunological tolerance, immunity to diseases, complements and hypersensitivity, cytokines, major histocompatibility complex. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Gürsel)*

MBG 473 Biomolecules, Biomaterials and Bioprocesses
Utilization of biological macromolecules as a biomaterial, principles applied to harness these biological complex molecules in biology, medicine and pharmaceutical biotechnology discussion of the selected cutting edge research papers. *Credit units: 3 ECTS Credit Units: 6. Aut (İ. Gürsel)*

MBG 475 Molecular Basis of Evolution
Darwin and the origin of species, the mechanisms of molecular evolution, genomic evolution, variation in species, genes in populations, molecular phylogenetics, transitions and evolution of modern humans. *Credit units: 3 ECTS Credit Units: 6.*

MBG 485 DNA Damage and Repair Mechanisms
Homologous recombination and role of double strand breaks, base excision repair pathway, mismatch repair, nucleotide excision repair and links with transcription, DNA double strand break repair and V(D)J recombination, cellular responses to DNA damage. *Credit units: 3 ECTS Credit Units: 6. Spr (A. O. Güre)*

MBG 487 Special Techniques in Molecular Genetics
Principles of specific methods used in the molecular genetics site-directed mutagenesis, phage display technology, cDNA selection, exon trapping, library making and screening. Discussions of selected research papers. (No lab session.) *Credit units: 3 ECTS Credit Units: 6. Spr (I. Yuluğ)*

MBG 488 Introduction to Human Genetics
Principles of human genetics, patterns of single gene inheritance, human molecular genetics, the human gene map, cytogenetics, the molecular and biochemical basis of genetic disease, genetic counseling, prenatal diagnosis. *Credit units: 3 ECTS Credit Units: 6. Aut (T. Özçelik)*

MBG 491 Senior Project I
A project on a specific topic in an area of molecular biology or genetics to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Erbay) Spr (I. Yuluğ)*

MBG 492 Senior Project II
A project on a specific topic in an area of molecular biology or genetics to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MBG 491. Aut (E. Erbay) Spr (I. Yuluğ)*

MBG 502 Advanced Cellular Biology
Cell structure and function, the cytoskeleton, intracellular compartments, vesicular trafficking, the cell-division cycle, cell junctions, cell adhesion, extracellular matrix and development. *Credit units: 3 ECTS Credit Units: 7.5. Aut (O. Çizmecioğlu)*

MBG 503 Advanced Molecular Biology
Chromosomal DNA and its packaging, higher-order organization of chromosomes, replication, recombination, control of gene expression, signaling pathways, cell cycle. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. O. Güre)*

MBG 505 Advanced Molecular Genetics
Organization of the genome, Mendelian and non-Mendelian inheritance, mitochondiral genome, mutigene families and repetitive DNA, polymorphism and polymorphic markers, genetic mapping, physical mapping, models of studying gene structure and function. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ö. Konu)*

MBG 509 Special Topics in Molecular Biology I
Current topics in molecular biology, comprehensive reading, critical evaluations of scientific references, seminar presentations and class participation. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. İ. Göktuna)*

MBG 510 Special Topics in Molecular Biology II
Current topics in molecular biology, comprehensive reading, critical evaluations of scientific references, seminar presentations and class participation. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. A. Cevher)*

MBG 513 Bioinformatics
Commonly used databases in molecular biology, genetics and related fields, homology search for genes and proteins, primer design, molecular operations, restriction mapping, structure prediction. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ö. Konu)*

MBG 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (I. Yuluğ) Spr (I. Yuluğ)

MBG 601 Human Genetics
Molecular genetics of human diseases, chromosomal abnormalities, biochemical genetics, genetic basis of cancer, genome projects, molecular medicine, genetic counseling, DNA based diagnostics, population genetics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (T. Özçelik)*

MBG 602 Molecular and Cellular Immunology
Basic elements of the immune system, molecular biology of antigen recognition, B and T lymphocytes, cellular and genetic basis of immunity, regulation and development of immune system, immune system deficiencies in humans, vaccination and adaptive immunetherapy. *Credit units: 3 ECTS Credit Units: 7.5. Spr (İ. Gürsel)*

MBG 603 Molecular Bases of Cancer
Cancer as a multi gene disease, oncogenes, tumor suppressor genes, mutator genes, gene therapy of cancer, germ-line and somatic mutations and cancer, genes involved in abnormal proliferation and metastatic behavior of cancer cells, immune response to cancer, familial cancers, virus-induced cancers. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Ö. Şahin)*

MBG 612 Special Topics in Genetics I
Current topics in molecular genetics, comprehensive reading, critical evaluation of scientific literatures seminar presentations and class participation. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. İ. Göktuna)*

MBG 613 Special Topics in Genetics II
Current topics in molecular genetics, comprehensive reading, critical evaluation of scientific literatures seminar presentations and class participation. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. A. Cevher)*

MBG 616 Experimental Molecular Biology and Genetics I
An introduction to basic molecular biology and genetics techniques. The student spends a half semester with one of the research groups and participates in some aspects of the research being pursued by the faculty member. *Credit units: 3 ECTS Credit Units: 7.5. Aut (I. Yuluğ)*

MBG 617 Experimental Molecular Biology and Genetics II
An introduction to advanced molecular biology and genetics techniques. The student spends a half semester with one of the research groups and participates in some aspects of the research being pursued by the faculty member. *Credit units: 3 ECTS Credit Units: 7.5. Spr (T. Özçelik)*

MBG 623 Seminars in Molecular Genetics I
The course will be based on class presentations and discussions of novel concepts in Molecular Genetics. Articles selected by the staff will be introduced and discussed with the students in the form of paper presentations and seminars. Students will be encourage to carry out a critical analysis of novel as well as milestone “classical” articles in the field of Molecular Genetics. *Credit units: None ECTS Credit Units: 1. Aut (I. Yuluğ) Spr (I. Yuluğ)*

MBG 624 Seminars in Molecular Genetics II
The course will be based on class presentations and discussions of novel concepts in Molecular Genetics. Articles selected by the staff will be introduced and discussed with the students in the form of paper presentations and seminars. Students will be encourage to carry out a critical analysis of novel as well as milestone “classical” articles in the field of Molecular Genetics. *Credit units: None ECTS Credit Units: 1. Aut (I. Yuluğ) Spr (I. Yuluğ)*

MBG 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (I. Yuluğ) Spr (I. Yuluğ)

DEPARTMENT OF PHYSICS

O. Gülseren (Chair), S. Aksu Ramazanoğlu, C. Bulutay, Ş. Büyükdağlı, A. Callegari, S. Çıracı, H. V. Demir, A. Erçelebi, A. Z. Eriş, A. Gökalp, B. Hetenyi, F. Ö. İlday, C. Kocabaş, M. Ö. Oktel, E. Özbay, B. Tanatar, G. Volpe, S. Wüster, C. Yalabık.

Part-time: Ö. Baştürk, A. U. Yılmazer.

The Department of Physics offers courses that lead to B.S., M.S., and Ph.D. degrees.

The department facilities compound semiconductor research and technology laboratory consisting of Class 100 and Class 10 000 clean rooms housing a mask aligner, SEM, PECVD, RIE, UHV evaporator, magnetron sputterer, RTP, I-V, C-V and microwave measurement setups. Experimental research areas include PL and Raman Spectroscopy and III-V micro and optoelectronic device technologies. Research areas include the study of condensed matter physics, optoelectronic devices, nanoscience, lasers and photonics, statistical physics, material science, semiconductor physics, computational physics, ultrafast optics, surface physics, mesoscopic physics, quantum optics, ultracold atomic physics.

UNDERGRADUATE PROGRAM

The undergraduate program is structured with the assumption that the student will continue his or her education towards an M.S. and a Ph.D. degree in Physics. The Department therefore admits a small number of highly qualified students every year. The program enables the student to attain a basic background in all areas of physics and at the same time provides a solid background in the area of condensed matter physics. A number of elective courses are offered for students whose interests may develop in other areas.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 101	Principles of Chemistry I	4 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
MATH 101	Calculus I	4 / 7
PHYS 101	General Physics I	4 / 6
PHYS 120	Orientation for Physics Majors	1 / 2
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CS 113	Introduction to Computing	4 / 7
ENG 102	English and Composition II	3 / 6
MATH 102	Calculus II	4 / 7
PHYS 102	General Physics II	4 / 6
PHYS 124	Freshman Project	2 / 2
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CHEM 201	Materials Science and Technology	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
MATH 241	Engineering Mathematics I	4 / 7
MBG 105	Principles of Biology	3 / 5
PHYS 211	Waves, Optics and Thermodynamics	4 / 6

Spring Semester		Credits / ECTS Credits
GE 251	Collegiate Activities Program II	1 / 1
MATH 242	Engineering Mathematics II	4 / 6

PHYS 212	Modern Physics	4 / 6
PHYS 218	Analytical Mechanics	3 / 6
PHYS 242	Advanced Calculus for Applications in Physics	3 / 6
	Elective	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
HUM 111	Cultures Civilizations and Ideas I	3 / 6
PHYS 291	Summer Practice	- / 6
PHYS 315	Electromagnetic Theory I	3 / 6
PHYS 325	Quantum Mechanics I	3 / 7
PHYS 371	Numerical Methods in Physics	3 / 6
	Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
HUM 112	Cultures Civilizations and Ideas II	3 / 6
PHYS 334	Statistical Physics	3 / 6
PHYS 374	Experimental Methods of Physics	4 / 6
	Elective	3 / 6
	Physics Elective	3 / 6

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
PHYS 491	Senior Project I	3 / 6
	Elective	3 / 6
	Non Technical Elective	3 / 6
	Physics Elective	3 / 6
	Technical Elective	3 / 6

Spring Semester		Credits / ECTS Credits
PHYS 492	Senior Project II	3 / 6
	Elective	3 / 6
	Non Technical Elective	3 / 6
	Technical Electives (2)	6 / 12

Double Major with Physics

The double major program in physics is an option for exceptional undergraduate students enrolled in a host undergraduate program to pursue a second bachelor's degree from the Physics Department to prepare them for interdisciplinary research. Students are closely supervised and are responsible for all courses in the physics undergraduate curriculum except common or equivalent courses with their host undergraduate programs.

Admission Requirements: Students with a cumulative grade point average of 3.30/4.00 and higher can start after completing two or three semesters in their host undergraduate programs.

Degree Requirements: Students must have a cumulative grade point average of 3.00/4.00 and higher in their host undergraduate programs while continuing in the double major physics program and finishing it within ten semesters after enrolling in their host undergraduate programs.

MINOR PROGRAM

The minor program is designed to attract bright students from other majors and provide them with a strong background in the main concepts that are usually found in a physics undergraduate curriculum. The program is designed to expose the students to both theoretical and experimental methods in physics and lead them towards interdisciplinary research areas. The strong physics background provided by the minor program will be advantageous to students who choose to go on to graduate study in Physics as well as other science and engineering disciplines.

Prerequisite Courses:

PHYS 101 General Physics I
PHYS 102 General Physics II
MATH 101 Calculus I
MATH 102 Calculus II

CURRICULUM

Courses		Credits / ECTS Credits
PHYS 218	Analytical Mechanics	3 / 6
PHYS 325	Quantum Mechanics I	3 / 7
PHYS 334	Statistical Physics	3 / 6
PHYS 374	Experimental Methods of Physics	4 / 6
	Electives (2)	6 / 12

ELECTIVE COURSES

PHYS 211	Waves, Optics and Thermodynamics	4 / 6
PHYS 212	Modern Physics	4 / 6
PHYS 252	Introductory Astronomy	3 / 6
PHYS 315	Electromagnetic Theory I	3 / 6
PHYS 316	Electromagnetic Theory II	3 / 6
PHYS 326	Quantum Mechanics II	3 / 6
PHYS 415	Optics	3 / 6
PHYS 445	Condensed Matter Physics I	3 / 6
PHYS 446	Condensed Matter Physics II	3 / 6
PHYS 453	Nuclear and Particle Physics	3 / 6

GRADUATE PROGRAM

The graduate program aims to develop students into scientists who can pursue original and creative research activities. This program is an important part of the research activity which aims to produce significant scientific output on an international level. The graduate program emphasizes research in various fields of condensed matter physics, in relation to the rapidly developing high technology fields such as photonics, nanoscience and nanotechnology. Presently, research is in progress in the physics of electrons in lower dimensionalities, nanoscience, statistical mechanics, many-body physics, strongly correlated electrons, properties of new materials, fabrication and theoretical analysis of new devices, computational physics, ultrafast optics, optoelectronic devices, quantum optics, ultracold atomic physics.

Master of Science in Physics

Admission: All Applicants are required to have a B.S. degree in physics , or in a related field of science or engineering. Students with a B.S. degree in areas other than physics may be requested to take several undergraduate courses in the field to acquire the necessary background. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12

PHYS 541	Electromagnetic Theory I	3 / 7.5
PHYS 542	Electromagnetic Theory II	3 / 7.5
PHYS 543	Advanced Quantum Mechanics I	3 / 7.5
PHYS 599	Master's Thesis	- / 56
	Graduate Electives (4)	12 / 30
	Graduate Seminar in Physics	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.*

Doctor of Philosophy in Physics

Admission: All applicants are required to have a M.S. degree with thesis in physics, or in a related field of science or engineering. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
PHYS 544	Advanced Quantum Mechanics II	3 / 7.5
PHYS 552	Statistical Physics	3 / 7.5
PHYS 580	Experimental Methods in Applied Physics	3 / 7.5
PHYS 699	Ph.D. Dissertation	- / 140
	Graduate Electives (4)	12 / 30
	Graduate Seminar in Physics	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Graduate Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science.

COURSE DESCRIPTIONS

PHYS 101 General Physics I

Standards and units; vectors and coordinate systems; kinematics; dynamics; work, energy and power; conservation of energy; dynamics of system of particles; collisions; rotational kinematics and dynamics; oscillations. *Credit units: 4 ECTS Credit Units: 6. Aut (C. Bulutay, Ş. Büyükdağlı, A. Callegari, A. Z. Eriş, O. Gülseren,*

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

B. Hetenyi, C. Kocabaş, M. Ö. Oktel, E. Özbay, B. Tanatar, A. U. Yılmazer) Spr (S. Aksu Ramazanoğlu, A. Callegari, S. Çıracı, A. Z. Eriş)

PHYS 102 General Physics II

Charge and matter; electric field and Gauss' law; DC circuits; magnetic field; Ampere's law; Faraday's law; inductance; magnetic properties of matter; Maxwell's equations. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: MATH 101 or MATH 111 or MATH 113 or PHYS 101 or PHYS 111. Aut (S. Çıracı, A. Erçelebi, A. Z. Eriş, A. Gökalp, S. Jahangirov) Spr (C. Bulutay, Ş. Büyükdağlı, E. Durgun, A. Z. Eriş, O. Gülseren, B. Hetenyi, S. Jahangirov, C. Kocabaş, M. Ö. Oktel, E. Özbay, B. Tanatar, C. Yalabık, A. U. Yılmazer)*

PHYS 107 Basic Physics I

The course aims to present the basic concepts and laws of mechanics at the level where the relevant mathematics does not require a priori knowledge of calculus. The topics studied include: vectors; translational and rotational kinematics and dynamics of particles and systems; work and energy; collions; harmonic oscillations. *Credit units: 4 ECTS Credit Units: 6. Aut (A. Erçelebi)*

PHYS 117 Basic Physics: Mechanics

The course aims to present the basic concepts and laws of mechanics at the level where the relevant mathematics laws not require a-priory knowledge of calculus. The topics studied include: vectors; translational and rotational kinematics and dynamics of particles and systems; work and energy; collisions; harmonic oscillations. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Erçelebi)*

PHYS 118 Basic Physics II

The course aims to present the basic concepts and laws of electricity and magnetism at the level where the relevant mathematics does not require a priori knowledge of calculus. The topics studied include: charge and matter; Coulomb's law; electric field and potential; DC circuits; magnetic field; Ampere's and Faraday's laws. *Credit units: 3 ECTS Credit Units: 4. Spr (A. Erçelebi)*

PHYS 120 Orientation for Physics Majors

Introduction to the different aspects of the "physics department" for first year physics majors. Students will be introduced to the department and its members. Faculty members and students meet once a week for discussions and presentations to introduce a variety of subjects areas. Students are expected to become familiar with their prospective academic life as a physicist. *Credit units: 1 ECTS Credit Units: 2. Aut (Ş. Büyükdağlı, M. Gürses)*

PHYS 124 Freshman Project

A project on a specific topic in physics or a closely related area will be undertaken by the student under the supervision of a faculty member. The course will expose the student to research through projects that required no prior knowledge beyond the high school level. Additional teaching goals include practicing critical thinking, analyzing cause and effect relationships, planning controlled experiments as well as gaining familiarity with useful skills such as literature search and scientific document preparation. *Credit units: 2 ECTS Credit Units: 2. Spr (C. Yalabık)*

PHYS 200 Physics for Poets

This course aims to present basic ideas of modern science to non-science majors with very little background in mathematics and physics. Scientific objectivity, science of mechanics, Newton's laws, electricity and magnetism, waves, special and general relativity, cosmology, atoms, particles and waves, uncertainty principle, quantum theory, fundamental constituents of matter, forces of nature. *Credit units: 3 ECTS Credit Units: 5. Spr (A. Erçelebi)*

PHYS 211 Waves, Optics and Thermodynamics

Mechanical waves, including sound waves, fluid mechanics, classical optics, including geometrical optics, interference, and diffraction, thermodynamics, including temperature and heat, first and second laws of thermodynamics. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: MATH 102 and PHYS 102. Aut (F. Ö. İlday)*

PHYS 212 Modern Physics

A survey of modern physics, including topics such as relativity, electromagnetic radiation behaving as particles and matter behaving waves, introduction to quantum mechanics, atomic and condensed matter physics, nuclear and particle physics and cosmology. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: MATH 102 and PHYS 102. Spr (M. Ö. Oktel)*

PHYS 218 Analytical Mechanics

Generalized coordinates, constraints, variational principles, Lagrange's equations, central force problem, motion in non-inertial frames, rigid body dynamics, Hamilton's equations, theory of small vibrations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 241. Spr (A. Erçelebi)*

PHYS 242 Advanced Calculus for Applications in Physics
Special functions of mathematical physics, hypergeometric functions, Sturm-Liouville theory, Green's functions, integral transforms, integral equations, probability. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 241. Spr (Ş. Büyükdağlı)*

PHYS 252 Introductory Astronomy
Introducing Astronomy; Planets and Moon; Stars and Stellar Evolution; Galaxies and Cosmology.
Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Baştürk)

PHYS 280 Physics for Administrators
This course intends to impart to the student, a knowledge of physics relevant to everyday life decisions. Although the course is designed for a student with a minimal background in mathematics and science, the subjects discussed will be advanced topics in Physics. Emphasis will be on understanding the basic concepts, and the ability to make "order of magnitude" computations. Subjects covered will include Energy and Power; Atoms and Heat; Gravity, Force, and Space; Nuclei and Radioactivity; Nuclear Reactors and Weapons; Electricity and Magnetism; Waves; Light; Invisible Light; Climate Change; Alternative Energy; Quantum Physics. *Credit units: 3 ECTS Credit Units: 6.*

PHYS 291 Summer Practice
The summer practice entails the students carrying out a project on a specific topic in physics or a related area. The project can be carried under the supervision of an experienced researcher at a university, a research institution or an industrial entity. The nature of the work can range anywhere from applied or engineering to pure research. The main goal is to introduce the student to real-life work environments, be it in an industrial setting or a traditional academic research environment. The main learning goals include attaining experience of working on a specific, well-defined project to its completion, including preparation of periodic and final progress reports in a professional manner, gaining experience with functioning in a team of co-workers. Minimum duration 30 work days. *Credit units: None ECTS Credit Units: 6. Aut (C. Kocabaş) Spr (C. Kocabaş)*

PHYS 315 Electromagnetic Theory I
Electrostatics; Coulomb's and Gauss' laws, the scalar potential. Solutions to the Laplace equation in rectangular, spherical and cylindrical coordinate systems with various boundary conditions. Poisson's equation; energy in the electric field; electrostatics of materials; capacitance. Magnetostatics: Biot-Savart and Ampere's laws, the field vector potential; energy in the magnetic field; magnetostatics of materials; Faraday's law; inductance. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 242 and PHYS 212 and PHYS 242. Aut (C. Bulutay)*

PHYS 316 Electromagnetic Theory II
Maxwell's equations; electromagnetic waves; reflections from boundaries; propagation in waveguides; radiation from accelerating charges; Lorentz transformations of electric and magnetic fields. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 315 or consent of the instructor. Spr (C. Bulutay)*

PHYS 325 Quantum Mechanics I
Wave packets and uncertainty; the postulates of quantum mechanics; eigenfunctions and eigenvalues; simple problems in one dimension; general structure of wave mechanics; operator methods in quantum mechanics; harmonic oscillator; path integral formulation of quantum mechanics; systems of many degrees of freedom; symmetry; rotational invariance and angular momentum; hydrogen atom. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: MATH 242 and PHYS 212 and PHYS 242. Aut (C. Yalabık)*

PHYS 326 Quantum Mechanics II
Spin; addition of angular momenta; approximation methods in quantum mechanics; atoms and molecules; scattering theory; quantum theory of electromagnetic radiation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 325. Spr (C. Yalabık)*

PHYS 334 Statistical Physics
The laws of thermodynamics; applications of thermodynamics; basic probability concepts; elementary kinetic theory; classical microcanonical, canonical and grand canonical ensembles; classical ideal gas; equipartition of energy; quantum mechanical ensembles; ideal Fermi and Bose systems; black body radiation, phonons, the electron gas; magnetism; introductory nonequilibrium statistical physics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 242 and PHYS 212 and PHYS 242. Aut (B. Hetenyi)*

PHYS 371 Numerical Methods in Physics
Solutions to linear systems of equations; roots of polynomials and other nonlinear functions; statistical applications; determinants, eigenvalues, and eigenvectors, solutions to differential equations; applications of FFT; utilization of scientific software packages. (Emphasis will be placed on physical applications.) *Credit units: 3 ECTS Credit Units: 6, Prerequisite: MATH 242 and PHYS 212 and PHYS 242. Spr (O. Gülseren)*

PHYS 374 Experimental Methods of Physics
Laboratory safety, principles of experimentation, statistical analysis of data such as error calculation, propagation of error, least squares fitting, instrumentation techniques such as vacuum physics and technology, temperature measurements, cryogenics and selected experiments in modern physics such as Franck-Hertz experiment, x-ray

diffraction, electron diffraction, superconductivity, electron spin resonance, gamma absorption. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: PHYS 212. Spr (C. Kocabaş)*

PHYS 375 Experimental Optics
Laboratory safety, Basic optical techniques and instruments, Light sources, Photodiode Spectral analysis devices, Polarization of light, Photoelectric effect, Liquid crystal cells, Single photon counting, Noise in optical detectors, Measuring wavelength of light, Measuring speed of light, Diffraction and interference, Optical excitations on solids, Optical sensors, Fiber optics. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: PHYS 212.*

PHYS 405 Theory of General Relativity
The Spacetime of Special Relativity; Lorentz Transformations; Manifolds and Coordinates; Vector and Tensor Calculus on Manifolds; Electromagnetism; The Equivalence Principle and Spacetime Curvature; The Gravitational Field Equations; The Schwarzscild Geometry; Experimental Tests of General Relativity; Schwarzschild Black Holes; The Friedman-Robertson-Walker Geometry; Cosmological Models; Linearized General Relativity; Gravitational Waves. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 102. Aut (M. Gürses)*

PHYS 420 Nanoscience and Nanotechnology I
General survey of nanoscience and nanotechnology, Atomic scale characterization and processes: Scanning probe microscopies: STM/AFM and atomic manipulation, Nanofabrication, Carbon Nanotubes, Nanowires, Transport in nanostructures, Nanoelectronics, Nanomagnetism, Spintronics. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 102. Aut (O. Gülseren)*

PHYS 438 Atomic Molecular and Optical Physics
Hydrogen-like ion, fine and hyperfine structures, multielectron atom, LS and jj couplings. Atoms in static magnetic and electric fields. Radiative transitions, selection rules, Einstein coefficients, rate equations, resonance fluorescence, Hanle effect, optical pumping. Molecules: rotational and vibrational motion, Franck-Condon principle, infrared and Raman spectra. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212 and PHYS 325.*

PHYS 445 Condensed Matter Physics I
Crystal diffraction; crystal binding; phonons and lattice vibrations; thermal, acoustic and optical properties; free electron model; energy bands, electron-phonon interactions; semiconductors; transport properties. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212. Aut (S. Çıracı)*

PHYS 446 Condensed Matter Physics II
Dielectric properties; diamagnetism and paramagnetism; ferromagnetism and anti-ferromagnetism; magnetic resonance; electron-phonon interactions; super-conductivity; optical properties. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212. Spr (S. Çıracı)*

PHYS 451 Introduction to Many Body Theory
Exchange Symmetry, Fermions and Bosons, Second Quantization Formalism, Free Bosons, Bose-Einstein Condensation, Free Fermions, Temperature Dependence, Interactions, Hartree-Fock and Random Phase approximation, BCS theory, Gross-Pitaevskii equation, Bogoluibov deGennes equation. Green's functions, diagrammatic perturbation theory. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 325. Aut (M. Ö. Oktel)*

PHYS 453 Nuclear and Particle Physics
Introduction to subatomic particles; properties of nuclei and nucleons; spin and magnetic moments; nuclear reactions; radioactivity; alpha and beta decays; nucleon interactions and nucleon scattering at low energies; nuclear models; elementary particles. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212. Spr (A. Gökalp)*

PHYS 458 Introduction to the Physics of Low- Dimensional Systems
Many-body physics in one and two dimensions, classical two-dimensional models, strategies towards exact solutions, quantum lattice models, magnetism, second quantization, symmetries in quantum physics, specifics of low-dimensional physics, exact solutions based on the Bethe ansatzs, geometric phases in physics, topology in physics, polarization and conductivity, quantum Hall effect, topological insulators. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212.*

PHYS 464 Optical Trapping and Optical Manipulation
Theoretical and experimental tools to understand optical trapping and manipulation as well as an overview of various fields where it has been applied. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212.*

PHYS 477 Ultrafast and Non Linear Optics
General introduction to the field of ultrafast optics and nonlinear optics. Nonlinear and dispersive pulse propagation, optical solutions, laser dynamics, mode-locking, ultrafast lasers, commonly used nonlinear optical processes. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212.*

PHYS 491 Senior Project I
A project on a specific topic in an area of physics to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212. Aut (Ş. Büyükdağlı, M. Gürses)*

PHYS 492 Senior Project II
A project on a specific topic in an area of physics to be carried out by the student under the supervision of a faculty member. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: PHYS 212. Spr (Ş. Büyükdağlı)*

PHYS 520 Nanoscience and Nanotechnology I
General survey of nanoscience and nanotechnology, Atomic scale characterization and processes: Scanning probe microscopies: STM/AFM and atomic manipulation, Nanofabrication, Carbon Nanotubes, Nanowires, Transport in nanostructures, Nanoelectronics, Nanomagnetism, Spintronics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (O. Gülseren)*

PHYS 522 Self-Organized and Self-Assembled Systems from Nanoscience to Biotechnology
Introduction to self-assembly and self-organization. Static/dissipative self-assembly/self-organization. Colloidal self-assembly/self-organization. Dynamics of nonlinear systems and far-from-equilibrium thermodynamic systems. Recent developments and state of the art examples ranging from nanoscience to computer science, to economy, finally to biotechnology. *Credit units: 3 ECTS Credit Units: 7.5. Spr (Staff)*

PHYS 538 Atomic molecular and optical physics
Hydrogen-like ion, fine and hyperfine structures, multielectron atom, LS and jj couplings. Atoms in static magnetic and electric fields. Radiative transitions, selection rules, Einstein coefficients, rate equations, resonance fluorescence, Hanle effect, optical pumping. Molecules: rotational and vibrational motion, Franck-Condon principle, infrared and Raman spectra. Recent topics in atomic, molecular and optical physics. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 541 Electromagnetic Theory I
Electrostatics. Magnetostatics. Boundary-value problems. Time varying fields and Maxwell's equations. Plane electromagnetic waves. Wave guides and resonant cavities. Simple radiating systems and diffraction. *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Tanatar)*

PHYS 542 Electromagnetic Theory II
Magnetohydrodnamics and plasma physics. Special theory of relativity. Relativistic particle kinematics and dynamics. Collisions. Radiation by moving charges. Bremsstrahlung. Radiative Beta-process. Multipole fields. Radiation damping. Self-fields of particles. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Tanatar)*

PHYS 543 Advanced Quantum Mechanics I
Operator formulation of quantum mechanics. Density operator and mixed ensembles. Angular momentum, spin systems. Evolution of closed quantum systems. Discrete symmetries in quantum mechanics. Introduction to quantum optics. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Gökalp)*

PHYS 544 Advanced Quantum Mechanics II
Perturbation theory. Non-relativistic scattering theory. Multipartite systems in quantum mechanics. Generalized measurements and evolution of open quantum systems. Permutation symmetry, fermions and bosons. Variational methods for many-particle systems: Hartree-Fock and Matrix Product States. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. Gökalp)*

PHYS 545 Solid State Theory I
Crystals. Group theory. One-electron approximation. Energy-band theory. Pseudopotential theory. Total energy and force calculations. Dynamics of electrons. Electron transport theory. Localization of electron states. Impurity states. Surfaces. Green's functions for defect states. *Credit units: 3 ECTS Credit Units: 7.5. Aut (S. Çıracı)*

PHYS 550 Physics of Semiconductor Devices
Review of Semiconductor Physics. Electron Theory of solids. Semiconductors under equilibrium and non-equilibrium conditions. Impurity levels, excess carriers, radiative and nonradiative recombinations. Band line-up and heterojunction energy band diagrams. P-N heterojunction. Graded heterojunctions. Electrical properties of heterojunctions. New electronic and optoelectronic devices based on semiconductor superlattices. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 552 Statistical Physics
Laws of thermodynamics, microcanonical ensemble, Liouville formalism, ergodicity, ensemble theory, phase transitions, critical phenomena, mean-field theory, scaling and renormalization, quantum statistical mechanics, Bose-Einstein condensation, superfluidity. *Credit units: 3 ECTS Credit Units: 7.5. Aut (C. Yalabık)*

PHYS 553 Methods of Mathematical Physics I
Sturm-Liouville theory. Special functions: Gamma functions; Bessel functions; Legendre polynomials; integral transforms; integral equations; calculus of variations. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 561 Special Topics in Condensed Matter Physics I
Credit units: 3 ECTS Credit Units: 7.5.

PHYS 564 Optical Trapping and Optical Manipulation
Theory of optical forces within geometrical optics and dipole approximations. Mie scattering. Elements of T-matrix, finite-difference time domain (FDTD) and discrete dipole approximation (DDA). Brownian motion. Building an optical tweezers. Calibration of an optical tweezers. Applications of optical tweezers to the fields of molecular biology, cell biology, spectroscopy, optofluidics, lab on a chip, statistical physics, nanothermodynamics, plasmonics, atom trapping, atom cooling, and quantum mesoscale physics. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 577 Ultrafast and Non Linear Optics
General introduction to the field of ultrafast optics and nonlinear optics. Nonlinear and dispersive pulse propagation, optical solutions, laser dynamics, mode-locking, ultrafast lasers, commonly used nonlinear optical processes. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 580 Experimental Methods in Applied Physics
Introduction to experimental methods. Spectroscopy of semiconductors, photoluminescence, Raman scattering. Schottky diode fabrication, current and voltage measurements. Computer based instrument control, and data acquisition. Atomic physics, dye lasers, lasers optogalvanic spectroscopy. *Credit units: 3 ECTS Credit Units: 7.5. Aut (C. Kocabaş) Spr (C. Kocabaş)*

PHYS 591 Graduate Seminar I
This is a graduate (M.S. and Ph.D.) seminar course. The instructor and students meet once a week for presentations and discussions. Topics of presentations are chosen by the mutual consent of the instructor and the students. *Credit units: None ECTS Credit Units: 1. Aut (C. Bulutay) Spr (C. Bulutay)*

PHYS 592 Graduate Seminar II
This is a graduate (M.S. and Ph.D.) seminar course. The instructor and students meet once a week for presentations and discussions. Topics of presentations are chosen by the mutual consent of the instructor and the students. *Credit units: None ECTS Credit Units: 1. Aut (C. Bulutay) Spr (C. Bulutay)*

PHYS 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (O. Gülseren) Spr (O. Gülseren)

PHYS 612 Quantum optics
Electromagnetic field quantization. Coherent and squeezed states. Quantum distributions, first- and second-order coherences. Atom-photons interactions: Rabi and Jaynes-Cummings models. Cavity quantum electrodynamics. Three-Level quantum optics. Open systems and decoherence. Recent topics in quantum optics. *Credit units: 3 ECTS Credit Units: 7.5.*

PHYS 651 Many Body Theory
Exchange Symmetry, Fermions and Bosons, Second Quantization Formalism, Free Bosons, Bose-Einstein Condensation, Free Fermions, Temperature Dependence, Interactions, Hartree-Fock and Random Phase approximation, BCS theory, Gross-Pitaevskii equation, Bogoluibov deGennes equation. Green's functions, diagrammatic perturbation theory. Second Quantization, Coherent state path integrals for Bosons and Fermions, Gell-Mann Low equation, Green's functions, diagrammatic perturbation theory, applications to weakly interacting Fermi and Bose Systems. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. Ö. Oktel)*

PHYS 699 Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (O. Gülseren) Spr (O. Gülseren)

INTERDISCIPLINARY PROGRAMS

There are three interdisciplinary graduate programs:

- Energy Economics, Policy and Security
- Materials Science and Nanotechnology
- Neuroscience

that lead to M.S. degree in the Graduate School of Economics and Social Sciences and M.S. and Ph.D. degrees in the Graduate School of Engineering and Science.

The graduate programs in Materials Science and Nanotechnology (MSN) offer a multi-disciplinary research environment, endorsing studies from different scientific disciplines. The specific areas of interest are nano and microelectronics, nanophotonics, spintronics, femtosecond lasers, nanobiotechnology and nanomedicine, supramolecular nanosystems, bioinspired and biomimetic materials, systems biology, atomic scale imaging, nanotextile, advanced materials design and manufacturing of nanofibers, nanotribology, novel nanomaterials for electrochemical energy storage, hydrogen economy and solar energy. MSN program provides students with an in-depth understanding of materials in the nanometer scale starting from quantum theory of matter, and involve the design, fabrication and application of novel nanostructures for functional materials to be used in biomedical, environmental and energy research and for enhanced sustainability. Graduates of MSN program are highly coveted in academia as well as in industry.

The graduate programs in Neuroscience provide students with a strong theoretical neuroscience background and opportunities to learn cutting edge methods and technology in the area. The mission is to provide students with the instruction, research experience, and mentoring they need to become leaders in research and education. The particular areas of interest are systems neuroscience, cellular and molecular neuroscience, developmental neuroscience, cognitive neuroscience, social neuroscience, behavioral neuroscience, neuroengineering, neuroeconomics, neuroprosthetics, neurogenomics, and optogenetics. As part of their work, students in the programs have access to advanced neuroimaging, nanotechnology, and biotechnology labs and equipment.

Non-thesis master's program on Energy Economics, Policy and Security (EEPS) is an interdisciplinary program that specifically aims to introduce and build the necessary academic infrastructure on issues of energy policy and security that strategically affect Turkey's economy and foreign policy. The program emphasizes both basic conceptual and applied policy-related aspects of global energy markets and identifies the key agents, institutions and powers involved in processes of sustainable and affordable energy and resource management, as well as Turkey's strategic policy choices for satisfaction of its growing energy needs in a potentially conflict-ridden global economy.

ACADEMIC STAFF

Michelle Marie Adams, Associate Professor
Ph.D., Neurobiology, New York University, 2001. Cognitive Neurobiology.

Engin Umut Akkaya, Professor
Ph.D., Chemistry, The Ohio State University, Columbus 1989. Molecular and Supramolecular Synthetic Chemistry and Exploration of Emerging Functions.

Hüseyin Can Aksoy, Assistant Professor
Ph.D., Law, Martin-Luther-University Halle-Wittenberg, 2013. Civil Law, Basic Concepts of Law, Law of Obligations, Introduction to Contract Law.

Selim Aksoy, Associate Professor
Ph.D., Electrical Engineering, University of Washington, 2001. Computer vision, statistical and structural pattern recognition, machine learning, data mining.

Laith Al Shawaf, Assistant Professor
Ph.D., Psychology, The University of Texas at Austin, 2014.

Abdullah Atalar, Professor
Ph.D., Electrical Engineering, Stanford University, 1978. Analog and digital integrated circuit design, micromachined sensors.

Ergin Atalar, Professor
Ph.D., Electrical and Electronics Engineering, Bilkent University, 1991. Image guided medical interventions, magnetic resonance imaging, antenna design for MRI.

Mehmet Zeyyad Baykara, Assistant Professor
Ph.D., Mechanical Engineering and Materials Science, Yale University, 2012. Atomic Force Microscopy and Spectroscopy, Scanning Tunneling Microscopy, Nanotribology, Surface Science.

Bilge Baytekin, Assistant Professor
Ph.D., Chemistry, Freie Universitat Berlin, 2008. Mechanochemistry, organic materials chemistry, electrostatics.

Hasan Tarık Baytekin, Assistant Professor
Ph.D., Chemistry, Middle East Technical University, 2002. Organic and supramolecular chemistry, plasma treatment of polymers, surface characterization methods, mechanism of static electricity generation (tribocharging) and development of charge dissipation methods on insulators.

Hüseyin Boyacı, Associate Professor
Ph.D., Physics, Bilkent University, 1999. Visual Perception, Cognitive Neuroscience.

Hasan Tolga Bölükbaşı, Assistant Professor
Ph.D., Sociology, McGill University, 2007. Political Economy, European Politics, Comparative Politics.

Murat Alper Cevher, Assistant Professor
Ph.D., Biochemistry, The City University of New York, Hunter College. Gene expression, In vitro transcription, breast cancer, large protein complex assembly.

Aaron Michael Clarke, Assistant Professor
Ph.D., Psychology, North Dakota State University, Centre for Visual Neuroscience, 2010.

Jennifer Corbett, Assistant Professor
Ph.D., Cognitive Science, The University of British Columbia, 2007. Visual perception: Perceptual averaging/ensemble encoding; Visual stability; Visual attention, working memory, and executive functions; Spatiotemporal integration; Segmentation and grouping; Multisensory interactions.

Çağlar Çekiç, Assistant Professor
Ph.D., Immunology, University of Louisville, 2009. Cancer Immunotherapy, vaccine adjuvants, adaptive immune responses and inflammation.

Salim Çıracı, Professor
Ph.D., Condensed Matter Physics, Stanford University, 1974. Surface physics, electronic structures of solids, electron systems of lower dimensionality, mesoscopic physics, scanning tunneling and atomic force microscopy, chemisorption theory, metalization, strained semiconductor superlattices.

Onur Çizmecioğlu, Assistant Professor
Ph.D., Cell Biology, German Cancer Research Center (DKFZ), University of Heidelberg, 2009. Signaling pathways in cancer, PI3K pathway, regulation of cell and centrosome cycles.

Tolga Çukur, Assistant Professor
Ph.D., Electrical Engineering, Stanford University, 2009. Biomedical imaging, magnetic resonance imaging (MRI), signal processing, computational neuroscience.

Ömer Dağ, Professor
Ph.D., Chemistry, Middle East Technical University, 1994. Synthesis, characterization and spectroscopy of solid-state materials.

Aykutlu Dana, Assistant Professor
Ph.D., Electrical Engineering, Stanford University, 2003. Force microscopy and spectroscopy; micro and nano electro-opto-mechanical system and sensors; plasmon resonance based detection; novel microscopy and spectroscopy; photovoltaic materials and devices.

John William Day, Instructor
Ph.D., Social Anthropology & Middle Eastern Studies, Harvard University, 2013.

Hilmi Volkan Demir, Professor
Ph.D., Electrical Engineering, Stanford University, 2004. Light-emitting diodes (LEDs), photovoltaics (PV), semiconductor nanocrystal optoelectronics, energy transfer driven devices and sensors, nanoparticles/nanocomposites, nanophotonics, RF sensing bioimplants and medical devices.

Katja Doerschner, Associate Professor (on leave)
Ph.D., Experimental Psychology, New York University, 2006. Perception of surface material, including color, in complex environments, perception of shape and motion.

Engin Durgun, Assistant Professor
Ph.D., Physics, Bilkent University, 2007. Computational materials design, solar fuels, cement chemistry, surface phenomena, multiferroics, hydrogen storage, nanowires/nanoclusters, magnetism/spintronics, nanotribology.

Çağlar Elbüken, Assistant Professor
Ph.D., University of Waterloo, Mechanical Engineering, 2009. Microfluidics and lab-on-a-chip devices, specifically two-phase microfluidic systems. Point-of-care diagnostic devices, blood analysis devices. Sensing technologies for portable diagnostic systems. Design and characterization of bio-manipulation and bio- characterization devices.

Ebru Erbay, Assistant Professor
Ph.D., Cell and Structural Biology, University of Illions, Urbana-Champaign, 2004. M.D., Ankara University, 1998. Signal transduction, organelle stress, metabolism, inflammation, obesity, diabetes, atherosclerosis, cardiovascular disease, metabolic syndrome.

Emine Yegan Erdem, Assistant Professor
Ph.D., Mechanical Engineering, University of California at Berkeley, 2013. Microfluidics, droplet-based systems, microreactors, nanoparticle synthesis, nanoimprinting.

Berk Esen, Assistant Professor
Ph.D., Government, Cornell University, 2015. International Political Economy, Democratization and Authoritarian Regimes, State-building, Comparative Historical Analysis, Political Economy of Development, Turkish Foreign Policy, Middle East and Latin American Politics.

Serkan İsmail Göktuna, Assistant Professor
Ph.D., Human Biology, Technical University of Munich, 2010. Cancer biology, tumor immunology, autoimmune diseases.

Ioannis N. Grigoriadis, Associate Professor (on leave)
Ph.D., Turkish Politics, University of London, 2005. Turkish Politics, European Politics.

Çiğdem Gündüz Demir, Associate Professor
Ph.D., Computer Science, Rensselaer Polytechnic Institute, 2005. Medical image analysis, computational biology, pattern recognition, machine learning, computer vision.

Ali Osmay Güre, Associate Professor
Ph.D., Tumor immunology, Cornell University, Graduate School of Medical Sciences, 1995. M.D., Ankara University, 1988. Cancer serology, cancer epigenetics, biomarkers of prognosis and chemosensitivity.

Refet Soykan Gürkaynak, Professor
Ph.D., Economics, Princeton University, 2004. Monetary economics, financial economics, international economics.

İhsan Gürsel, Professor
Ph.D., Biology, Middle East Technical University, 1995. Innate immunity, immunotherapy, primary Immunodeficiencies drug delivery, nanobiotechnology, vaccine development, biomaterials.

Mehmet Selim Hanay, Assistant Professor
Ph.D., Physics, California Institute of Technology (Caltech), 2011. Nanoelectromechanical systems, mass sensing.

Clemens Maximilian Hoffmann, Assistant Professor (on leave)
Ph.D., International Relations, University of Sussex, 2010. Historical Sociology, International Relations Theory, State Formation, Environment, African Politics, Ottoman Empire, Turkish Foreign Policy.

Fatih Ömer İlday, Associate Professor
Ph.D., Cornell University, 2003. Non-linear optics ultrafast optical phenomena.

Pınar İpek, Assistant Professor
Ph.D., International Relations, University of Pittsburgh, 2003. International Political Economy, Energy Security, Turkish Political Economy, European Union Energy.

Seymur Jahangirov, Assistant Professor
Ph.D., Material Science and Nanotechnology, Bilkent University, 2012. Computational physics, silicene, 2D materials, friction, nanowires and atomic chains.

Ferdi Karadaş, Assistant Professor
Ph.D., Inorganic Chemistry, Texas A & M University, 2009. Synthesis and characterization of magnetic and parous inorganic materials.

Yiğit Karpat, Associate Professor
Ph.D., Industrial Engineering, Rutgers University, 2007. Manufacturing systems and processes, micro/nano technologies.

Talip Serkan Kasırga, Research Assistant Professor
Ph.D., Physics, University of Washington, 2013. Experimental investigation of strong electronic correlation effects at low dimensional systems and their applications in hydrogen sensing, novel logic and storage devices, new generation light emitting diodes, using vanadium oxides and layered transition metal dichalcogenides.

Mirali Khatibi Tabatabaei, Assistant Professor
Ph.D, Psychology, KU Leuven, 2014. Cognitive bias in the processing of painful facial expressions.

Coşkun Kocabaş, Assistant Professor
Ph.D., Physics, University of Illinois at Urbana-Champaign, 2007. Semiconductor nanomaterials, graphene and carbon nanotubes.

Özlen Konu, Associate Professor
Ph.D., Biology, Texas Tech University, 1999. Microarray data analysis, gene networks in nicotine's pharmacological effects, zebrafish genetics.

Hayrettin Köymen, Professor
Ph.D., Electrical Engineering, University of Birmingham, 1979. Acoustic imaging, linear and finite amplitude acoustics, medical instrumentation, processing and modeling of physiological signals.

Bülend Ortaç, Assistant Professor
Ph.D., Physics, Rouen University,2004. Fiber optic concepts; CW and pulsed laser; amplification systems; nonlinear optics; ultrafast laser physics; THz generation; application of laser systems.

Ekmel Özbay, Professor
Ph.D., Electrical Engineering, Stanford University, 1992. Nanotechnology, nanophotonics, nanoelectronics, metamaterials, GaN MOCVD growth, GaN devices, photonic crystals, physics and applications of nanostructures, photonic devices, nanosensors.

Tayfun Özçelik, Professor
M.D., Human Genetics, İstanbul University, 1986. Human molecular genetics, gene mapping, mutation analysis, identification of disease genes, X-chromosome inactivation.

İbrahim Özgür Özdamar, Assistant Professor
Ph.D., Political Science, University of Missouri-Columbia, 2006. International Relations Theory, Foreign Policy Analysis, Research Methods, American Foreign Policy, Black Sea Politics.

Emrah Özensoy, Associate Professor
Ph.D., in Physical Chemistry, Texas A&M University , 2004. Catalytic properties of surfaces and nanostructures, model catalyst design at the atomic level, spectroscopic investigation of single crystals and ultra-thin metal-oxide films.

Emine Ülkü Sarıtaş, Assistant Professor
Ph.D., Electrical Engineering, Stanford University, 2009. Biomedical imaging, magnetic resonance imaging (MRI), magnetic particle imaging (MPI), signal and image processing, safety limits of magnetic fields in medical imaging systems.

Şefik Süzer, Professor
Ph.D., Chemistry, University of California, Berkeley, 1976. Electron, ion and photon spectroscopic analyses of gases, solids and surfaces.

Özgür Şahin, Assistant Professor
Ph.D., Cell and Systems Biology, University of Heidelberg and German Cancer Research Center, 2008. Breast cancer, systems biology, signal transduction, drug resistance, metastasis, microRNAs and biomarkers.

Urartu Özgür Şafak Şeker, Assistant Professor
Ph.D., in Molecular Biology-Genetics and Biotechnology, İstanbul Technical University, 2009. Synthetic Biotechnology, Genetic Engineering, Bioinspired Materials and Bionanotechnology.

Fatma Taşkın, Associate Professor
Ph.D., Economics, Boston College, 1987. International economics, macroeconomics.

Ayşe Begüm Tekinay, Assistant Professor
Ph.D., Molecular Biology, Rockefeller University, 2006. Nanobiotechnology, regenerative medicine, stem cell differentiation, drug delivery, biosensors, human genetics, molecular characterization of novel genes, animal models.

Timothea Toulopoulou, Visiting Associate Professor
Ph.D., Neuropsychology, University of London, 2001. Abnormal Psychology, Biological Psychology, Neuropsychology, Schizophrenia, Behavioral genetics.

Dimitri Tsarouhas, Associate Professor
Ph.D., Politics, The University of Sheffield, 2005. European Integration, Political Economy, EU-Turkey Relations, Comparative European Politics.

Dönüş Tuncel, Associate Professor
Ph.D., Organic and Polymer Chemistry, University of Cambridge and Imperial College, London 1999. Synthesis, characterisation and application of functional materials, supramolecular and polymer chemistry.

Yunus Emre Türkmen, Assistant Professor
Ph.D., Organic Chemistry, The University of Chicago, 2012. Non-covalent interactions in organocatalysis, natural product total synthesis.

Tamer Uyar, Associate Professor
Ph.D., Fiber & Polymer Science, North Caroline State University, 2005. Multi-functional nanotextile materials, polymeric nanocomposites, functional polymeric and inorganic nanofibers.

Burak Ülgüt, Assistant Professor
Ph.D., Analytical and Physical Chemistry, Cornell University, 2007. Electron Transfer through molecules and assemblies.

Giovanni Volpe, Assistant Professor (on leave)
Ph.D., Physics, ICFO - The Institute of Photonics Sciences, 2008. Condensed matter of Physics, Statical physics, soft matter, optical tweezers.
Alp Erinç Yeldan, Professor
Ph.D., Economics, University of Minnesota, 1988. International economics, development macroeconomics, macroeconomic modeling.
Eda Yılmaz, Visiting Research Assistant Professor
Ph.D., Chemistry, Bilkent University, 2011. Electrochemical energy storage systems, lithium-oxygen batteries, lithium-ion batteries, surface characterization, spectroscopy, design and synthesis of nanomaterials.
Semiha Yılmazer, Assistant Professor
Ph.D., Architecture, Karadeniz Technical University, 1998. Building physics: architectural acoustics, lighting and thermal comfort.
Işık Yuluğ, Associate Professor
Ph.D., Molecular Genetics, University of London, 1996. Gene analysis in breast cancer, gene identification, gene expression in eukaryotic systems, epigenetics.

PART-TIME ACADEMIC STAFF

Hacı Hulusi Kafalıgönül, Ph.D., Electrical and Computer Engineering, University of Houston, 2007.
Necdet Pamir, B.S., Petroleum Engineering, Middle East Technical University, 1980.

GRADUATE PROGRAM IN ENERGY ECONOMICS, POLICY AND SECURITY

A. E. Yeldan (Director), H. C. Aksoy, H. T. Bölükbaşı, J. W. Day, B. Esen, I. N. Grigoriadis, R. S. Gürkaynak, C. M. Hoffmann, P. İpek, İ. Ö. Özdamar, F. Taşkın, D. Tsarouhas.

Part-time: N. Pamir.

Master of Arts in Energy Economics, Policy and Security

Non-thesis master's program on Energy Economics, Policy and Security (EEPS) is an interdisciplinary program that specifically aims to introduce and build the necessary academic infrastructure on issues of energy policy and security that strategically affect Turkey's economy and foreign policy. The program emphasizes both basic conceptual and applied policy-related aspects of global energy markets and identifies the key agents, institutions and powers involved in processes of sustainable and affordable energy and resource management, as well as Turkey's strategic policy choices for satisfaction of its growing energy needs in a potentially conflict-ridden global economy.

Admission: All applicants are required to have a bachelor's degree. Evaluation of applicants is based on their past academic records, statement of purpose, reference letters and an interview. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: Students are expected to complete six required and four elective courses equivalent to at least 30 credit units of course work. In addition to these courses, the students should also complete a one semester term project under the supervision of a faculty member in the Departments of Economics, International Relations, or Political Science and Public Administration. Expected duration to complete the EEPS study is two semesters

COURSE DESCRIPTIONS

EEPS 501 Economic Analysis of Energy Issues
This course will equip you with the necessary tools to do economic analysis relevant for energy related issues. The aim is to make you comfortable with the basic analytical tools of economics and also to illustrate their use in better understanding the economy we are living in.
Credit units: 3 ECTS Credit Units: 10. Aut (R. S. Gürkaynak)

EEPS 502 Empirical Methods in Energy Economics
Introduction to quantitative methods used to analyze problems in energy and environmental economics. Econometric modeling and methods and their application to analyze energy and environmental issues. Concepts, rationales, and instruments for policy intervention in energy markets. Development of expertise in working with data and in applying numerical simulation models as well as econometric techniques using computer software. Emphasis on regression models, demand estimation, econometric techniques for policy evaluations, and panel data methods. *Credit units: 3 ECTS Credit Units: 10, Prerequisite: EEPS 501. Spr (Staff)*

EEPS 503 Energy Policy Analysis
This course aims to introduce key themes related to energy policy analysis. Students will be provided with the essential conceptual and analytical tools required to the study of identification and satisfaction of energy needs and priorities by reference to a multiplicity of perspectives, including national, regional and global dynamics, challenges and processes and the interplay among them. In particular: how are energy policies formulated, designed and implemented at a regional and global scale, issues of energy governance and societal risks. By the end of the course, students are expected: i. to acquire a basic understanding of political and social factors that contribute to energy policy-making; ii. to advance ability for using theories and concepts in energy policy analysis; iii. to develop critical thinking and comparative skills in energy politics and energy policy analysis. *Credit units: 3 ECTS Credit Units: 10. Aut (A. E. Yeldan)*

EEPS 504 Policy Skills and Strategic Analysis
Tools to understand the multifaceted nature of the energy sectors and its applications in contemporary society. Development of analytical tools necessary for following recent trends in the global energy markets. Development of necessary knowledge and skills to conduct strategic analysis in energy related issues. Weekly guest lecture on different aspects of the course material and discussion on how policymakers could best react to contemporary challenges in the field of energy. *Credit units: 3 ECTS Credit Units: 10. Spr (B. Esen)*

EEPS 505 Energy Geopolitics and Policy
An awareness course on global and regional energy issues to include (and mostly focusing on) Turkey's energy policy while energy policies of major players (US, EU, Russia, etc.) will be tought. Conventional and non-

conventional sources, related and emerging technologies to produce them will be studied. Energy and electricity security are other major topics. Climate change and policies to avoid global warming, demand side management and scenarios will also be discussed in detail. *Credit units: 3 ECTS Credit Units: 10. Aut (N. Pamir)*

EEPS 506 Energy Security and Foreign Policy Analysis
The challenge for energy security in relation to foreign policy analysis. The continuities and changes in the global energy market that underline the emerging challenges in securing energy supplies, access to resources and the environment. Different theoretical approaches to facilitate a conceptual framework in analyzing how energy security relates to foreign policy. Selected issues and cases to analyze and discuss energy security and foreign policy in the light of the different conceptual frameworks presented. *Credit units: 3 ECTS Credit Units: 10. Spr (P. İpek)*

EEPS 508 Guided Academic Writing
Development of effective ways to communicate within professional and academic fields. Through hands-on writing exercises and workshops, and through close reading of texts reflecting conventions and discourse patterns of different fields, improvement of ability to attend to such important writing skills as clarity, concision, style, structure, and genre awareness. *Credit units: 3 ECTS Credit Units: 10. Aut (J. W. Day) Spr (J. W. Day)*

EEPS 510 Introduction to Energy Law
Basic concepts of energy law for those who have no legal background. The administrative law aspect of the issue as well as the main principles concerning energy agreements and energy regulation. (in Turkish) *Credit units: 3 ECTS Credit Units: 10. Aut (H. C. Aksoy)*

EEPS 511 Intelligence Analysis
An advanced seminar on intelligence analysis. Introduction to intelligence and its sources; models of intelligence; analytical methods (quantitative and qualitative) of analysis and predictive analytics. *Credit units: 3 ECTS Credit Units: 10. Aut (İ. Ö. Özdamar)*

EEPS 512 Settlement of Energy Disputes and Arbitration
Dispute resolution mechanisms of energy investments for students, who have no legal background. Features of energy investment with regard to state-investor disputes. Arbitration as a most accepted way of dispute settlement mechanism. Some major cases regarding energy investments before international arbitration institutions. Conflict resolution of energy disputes between investors and host states (in Turkish). *Credit units: 3 ECTS Credit Units: 10. Spr (B. Tiryakioğlu)*

EEPS 515 Environmental and Resource Economics
Essential elements of environmental abatement with the approach and policy instruments of an economist. Threats and concerns, tools of mitigation against environmental "bads", and their effectiveness. These ideas and policy tools placed into the historical/social context of global capitalism with all its institutions, markets, and dynamic patterns. Determinants of the wealth of nations and also appropriate national policies to achieve sustained and stable growth. *Credit units: 3 ECTS Credit Units: 10. Spr (F. Taşkın, A. E. Yeldan)*

GRADUATE PROGRAM IN MATERIALS SCIENCE AND NANOTECHNOLOGY

H. V. Demir (Director), M. M. Adams, E. U. Akkaya, A. Atalar, M. Z. Baykara, B. Baytekin, H. T. Baytekin, M. A. Cevher, Ç. Çekiç, S. Çıracı, O. Çizmecioğlu, Ö. Dağ, A. Dana, E. Durgun, Ç. Elbüken, E. Erbay, E. Y. Erdem, S. İ. Göktuna, A. O. Güre, İ. Gürsel, M. S. Hanay, F. Ö. İlday, S. Jahangirov, F. Karadaş, Y. Karpat, T. S. Kasırga, C. Kocabaş, Ö. Konu, H. Köymen, B. Ortaç, E. Özbay, T. Özçelik, E. Özensoy, Ş. Süzer, Ö. Şahin, U. Ö. Ş. Şeker, A. B. Tekinay, D. Tuncel, Y. E. Türkmen, T. Uyar, B. Ülgüt, G. Volpe, E. Yılmaz, S. Yılmazer, I. Yuluğ.

GRADUATE PROGRAM

The graduate program in Materials Science and Nanotechnology is an interdisciplinary study and aims to develop researchers who can pursue outstanding and creative research in the diverse fields of nanoscience and nanotechnology, such as nanobiotechnology and nanomedicine; atomic scale imaging; nano and microelectronics; nanotextile; nanophotonics; femtosecond lasers; spintronics; advanced materials design and manufacturing of nanofibers; nanotribology, hydrogen economy and solar energy, etc. The graduate program provides an in depth understanding of materials in nanometer scale and present an excellent training starting from the quantum theory of matter and quantum statistical thermodynamics. The graduate courses to be taken by the students have to focus on his/her thesis work.

Master of Science in Materials Science and Nanotechnology

Admission: All applicants are required to have a B.S. degree in materials science and nanotechnology, or in a related field of science or engineering such as; physics, mathematics, chemistry, molecular biology and genetics, electrical and electronics, mechanical, chemical, materials science, metallurgy, food, etc. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
MSN 517	Fundamentals of Nanoscience	3 / 7.5
MSN 518	Fundamentals of Nanotechnology	3 / 7.5
MSN 599	Master's Thesis	- / 56
	Core Graduate Courses (2)	6 / 15
	Gradute Electives (3)	9 / 22.5
	MSN Graduate Seminar	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Core Courses: All 5XX or higher level MSN coded courses with at least 3 credits.
Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science* and LAW 534.

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Core Courses: All 5XX or higher level MSN coded courses with at least 3 credits.

Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science* and LAW 534.

Doctor of Philosophy in Materials Science and Nanotechnology

Admission: All applicants are required to have a M.S. degree with thesis in materials science and nanotechnology, or in a related field of science or engineering such as; physics, mathematics, chemistry, molecular biology and genetics, electrical and electronics, mechanical, chemical, materials science and metallurgy, food, etc. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters. The maximum durations is 12 semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
MSN 517	Fundamentals of Nanoscience	3 / 7.5
MSN 518	Fundamentals of Nanotechnology	3 / 7.5
MSN 699	Ph.D. Thesis	- / 140
	Core Graduate Courses (3)	9 / 22.5
	Gradute Electives (2)	6 / 15
	MSN Graduate Seminar	- / 1

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Core Courses: All 5XX or higher level MSN coded courses with at least 3 credits.

Elective Courses: All 5XX or higher level courses with at least 3 credits offered by Graduate School of Engineering and Science and LAW 534.

COURSE DESCRIPTIONS

MSN 500 Concepts in Materials Science
Fundamental concepts in materials science. Atom models; atomic and crystalline structure; mechanical (stres, strain, elasticity, deformation), electrical (conductivity, mobility, band structure, semiconductors), thermal (heat capacity, expansion, thermal conductivity), magnetic (ferromagnetism, domains and hysteresis, magnetic storage), and optical (radiation, refraction, transmission, luminescence, photoconductivity) properties of materials. The correlation between materials structure and its micro- and macroscopic properties. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Durgun)*

MSN 501 Atomic Structure, Mechanical and Thermal Properties of Materials
Modern materials science and current trends; classification of materials; atomic structure; lattice; crystal; point and space groups; reciprocal lattice and k-space; x-ray diffraction; noncrystalline materials; imperfections:,

* Graduate School of Engineering and Science comprises graduate programs of the departments of Computer Engineering, Electrical and Electronics Engineering, Industrial Engineering, Mechanical Engineering, Chemistry, Mathematics, Molecular Biology and Genetics, Physics, and the interdisciplinary graduate programs Material Science and Nanotechnology, and Neuroscience.

binding and bonding; elastic and plastic properties; dynamics of atoms; dynamical matric and its symmetries; normal modes and phonons; Planck's distribution; thermal properties; free electron system; quantum size effect and confinement. *Credit units: 3 ECTS Credit Units: 7.5.*

MSN 510 Imaging Techniques in Materials Science and Nanotechnology
Introduction to advanced imaging techniques including atomic force microscopy (AFM), scanning tunneling microscopy (STM), transmission electron microscopy (TEM), scanning electron microscopy (SEM), confocal microscopy. *Credit units: 3 ECTS Credit Units: 7.5.*

MSN 512 Biomedical Materials
Types of biomedical materials and the material selection criteria. Chemical and physical properties of metals, and polymers for use in biomedical applications. Material - Biological entity interaction; biocompatibility, biodegradation. Special biomedical products, biomaterials, tissue engineering, applications and issues; heart valves, artificial bones, implants, blood vessel grafts. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. B. Tekinay)*

MSN 513 Micro and Nanostructured Sensors
Introductory and fundamental concepts in sensors and transducers. MEMS, MOEMS, and NEMS structures. Overview of fabrication technologies. Optical sensors including plasmonic sensors, fiber and waveguide based sensing. Coupling of physical and chemical effects to optical domain. Electronic sensors including thin films, semiconductor device based sensors and novel electronic sensors using nanostructures. *Credit units: 3 ECTS Credit Units: 7.5. Aut (A. Dana)*

MSN 517 Fundamentals of Nanoscience
Introduction to nanoscience and nanotechnology; societal implications of nanoscience: ethical, legal and environmental implications; nanotools: characterization methods; nanotools: fabrication methods; physical properties and phenomena: materials, structure, and the nanosurface; energy at the nanoscale; the material continuum: basic quantum mechanics and the solid state, quantum size effects; nanothermodynamics; synthesis and modification: carbon - based nanomaterials, chemical ınteractions at the nanoscale, supramolecular chemistry; chemical synthesis and modification of nanomaterials; bionanoscience: natural nanomaterials; biomolecular nanoscience: DNA, RNA and protein synthesis. *Credit units: 3 ECTS Credit Units: 7.5. Aut (T. S. Kasırga)*

MSN 518 Fundamentals of Nanotechnology
Perspectives of nanotechnology; nanometrology; standart and nanomanufacturing; nanoscale electronics; nanooptics, nanophotonics; nanomagnetism; nanomechanics; nanostructure and nanocomposite thin films, applications of thin films; nanocatalysis; nanocomposites and fibers; biological and environmental nanoengineering: nonobiotechnology, biomimetics; medical nanotechnology; environmental nanotechnology. *Credit units: 3 ECTS Credit Units: 7.5. Spr (B. Ortaç)*

MSN 519 Applications of Microfluidics and Nanofluidics
Characteristics of micro/nanofluidics. Transport phenomena, non-dimensional numbers, diffusion, settling, wetting, fluidic components (pumps, valves, choice of material, fabrication/production techniques). Lab-on-a-Chip (LOC) devices, diagnostic devices, LOC for cellular studies, high throughput studies, DNA/protein microarrays and tissue engineering. Organ-on-a-chip. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Ç. Elbüken)*

MSN 521 Biotechnology
Current developments in biotechnology. Drug discovery and development processes. Novel drugs, new platforms of drug discovery. Use of living organisms for environmental management. Bioreactors. Genetically engineered organisms to produce commercial products. Genetically modified crops. Techniques of the biotechnology industry, recombinant DNA technology, mammalian cell culture and protein purification and expression. *Credit units: 3 ECTS Credit Units: 7.5. Spr (U. Ö. Ş. Şeker)*

MSN 522 Molecular Biomimicry and Synthetic Biology
Fundamentals of molecular biomimicry, and synthetic biology. Structure of biological molecules, self-assembly in biological systems, biological nanostructures, biology inspired material systems design, control of biomolecular interactions. Fundamentals of synthetic biological device design. *Credit units: 3 ECTS Credit Units: 7.5. Aut (U. Ö. Ş. Şeker)*

MSN 526 Chemistry of Functional Surfaces and Interface Engineering
Surface chemistry in nanosciences and nanotechnology. Physical, physicochemical and chemical properties of surfaces. Surface characterization methods. Chemical surface functionalization techniques, wet chemical techniques, UV, plasma, ozonolysis, and electrochemical techniques. Self-healing, dynamically switchable and responsive surfaces and interfaces. Surface reactivity, catalysis, nanocatalysts. Surface states, work function. *Credit units: 3 ECTS Credit Units: 7.5. Spr (T. Uyar)*

MSN 533 Nanomaterials for Energy Conversion and Storage
A general overview to energy conversion and storage systems, potentials and thermodynamics of electrochemical cells, electrochemical methods, nanomaterials for electrochemical energy systems, dye sensitized solar cells, photocatalytic water splitting, proton exchange membrane fuel cells, direct methanol and solid oxide fuel cells,

microbial fuel cells, hydrogen storage, supercapacitors, concepts in battery technology, lithium-ion batteries, next generation secondary batteries. *Credit units: 3 ECTS Credit Units: 7.5. Aut (E. Yılmaz)*

MSN 534 Polymeric Materials
Characterization of polymeric materials, structural analysis, surface and surface analysis (nuclear magnetic resonance, RAMAN, infrared, X-ray photoelectron spectroscopy, X-ray diffraction, electron and optical microscopy), thermal analysis (thermogrovimetric differential scanning calorimetry), mechanical testing (tensile, dynamic mechanical analysis, rheological), molecular weight analysis (intrinsic viscosity, gel permeation chromatography). *Credit units: 3 ECTS Credit Units: 7.5. Aut (T. Uyar) Spr (T. Uyar)*

MSN 541 Nanobiotechnology
Nanobiotechnology; lessons from nature; bioinformatics; materials at nanoscale; basic imaging techniques; biosensors; targeted drug delivery methods; biofilms; toxicity of nanotechnology products; use of nanotechnology in investigating basic cell biology; polymeric nanofibers. *Credit units: 3 ECTS Credit Units: 7.5. Spr (A. B. Tekinay)*

MSN 551 Introduction to Micro and Nanofabrication
Introduction to conventional methods in macro and nanofabrication. Basics of flim deposition techniques, optical and electron beam lithography, wet and dry etching methods, implantation and diffusion. Applications of microfabrication to CMOS fabrication and micro and nanoelectromechanical systems. Some non-conventional methods of micro and nanostructure fabrication. *Credit units: 3 ECTS Credit Units: 7.5.*

MSN 555 Nanomaterials Processing by Intense Laser Beam
Fundamentals of laser materials interactions, laser ablation and thin film deposition, processing with ultrashort laser pulses, creating nanostructures with lasers, laser micro and nano machining, laboratory training and hand-on experiments *Credit units: 3 ECTS Credit Units: 7.5. Aut (B. Ortaç)*

MSN 591 Nanotechnology and Its Impacts on Socio-Economic Structures
Implications of nanotechnology on socio-economic structures; possible future scenarios; nanotechnology world economic trends; investments of various countries; nanotechnology, industry, business interactions; ethics, legal aspects; patent and intellectual property; national nanotechnology initiatives; world dynamics and decision systems, impacts on human life and society. *Credit units: 3 ECTS Credit Units: 7.5.*

MSN 598 Seminar I
Seminars on state-of-the-art developments in the field of nanotechnology. Topics spanning computational nanoscience, nanobiotechnology, nanorobotics, bioengineering, nanophotonics, nanoelectronics and nanomaterials. *Credit units: None ECTS Credit Units: 1. Aut (E. Durgun) Spr (E. Durgun, D. Tuncel)*

MSN 599 Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (H. V. Demir) Spr (H. V. Demir)

MSN 698 Seminar II
Seminars on state-of-the-art developments in the field of nanotechnology. Topics spanning computational nanoscience, nanobiotechnology, nanorobotics, bioengineering, nanophotonics, nanoelectronics and nanomaterials. *Credit units: None ECTS Credit Units: 1. Aut (E. Durgun) Spr (E. Durgun, D. Tuncel)*

MSN 699 Ph.D. Thesis
Credit units: None ECTS Credit Units: 140. Aut (H. V. Demir) Spr (H. V. Demir)

GRADUATE PROGRAM IN NEUROSCIENCE

M. M. Adams (Director), S. Aksoy, L. Al Shawaf, E. Atalar, H. Boyacı, A. M. Clarke, J. Corbett, T. Çukur, K. Doerschner, Ç. Gündüz Demir, F. Ö. İlday, M. Khatibi Tabatabaei, Ö. Konu, T. Özçelik, E. Ü. Sarıtaş, A. B. Tekinay, T. Toulopoulou, G. Volpe.

Part-time: H. H. Kafalıgönül.

GRADUATE PROGRAM

The graduate program in neuroscience is an interdisciplinary program designed to provide students with a broad background and training in the neuroscience field. Our mission is to provide students with the instruction, research experience, and mentoring they need to become leaders in research and education. Students will take a variety of courses that focus on both systems neuroscience and cellular and molecular neuroscience, as well as courses that are offered from different departments including Electrical and Electronics Engineering, Computer Engineering, Molecular Biology and Genetics, Physics and Psychology among others. Areas of research include systems neuroscience, cellular and molecular neuroscience, developmental neuroscience, cognitive neuroscience, social neuroscience, behavioral neuroscience, neuroengineering, neuroeconomics, neuroprosthetics and neurogenomics.

Master of Science in Neuroscience

Admission: All applicants are required to have a bachelor's degree in science or engineering or psychology or medicine or a related field. Evaluation of applicants is based on their ALES (Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: In addition to at least 21 credit units of course work, the M.S. degree candidate must prepare and successfully defend a thesis. Expected duration to complete the M.S. program is four semesters; the maximum duration is six semesters.

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 590	Academic Practices	- / 12
NSC 510	Sensory and Motor Systems Neuroscience	3 / 7.5
NSC 511	Cellular, Molecular and Developmental Neuroscience	3 / 7.5
NSC 599	Neuroscience Master's Thesis	- / 56
	Electives (2)	6 / 12
	Neurosciences Seminar	- / 1
	Restricted Electives (3)	9 / 18

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Elective Courses: Selected 5XX or higher level courses with at least 3 credits offered by different departments.

Restricted Elective Courses: Selected 5XX or higher level CS, EEE, IE, LAW, MBG, ME, MSN, NSC, PHYS and PSYC coded courses with at least 3 credits.

Doctor of Philosophy in Neuroscience

Admission: All applicants are required to have a bachelor's degree in science or engineering or psychology or medicine or a related field. Evaluation of applicants is based on their ALES

(Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı - Academic Personnel and Postgraduate Education Entrance Examination) scores, past academic records, reference letters and an interview. Applicants who are not Turkish citizens and Turkish citizen applicants who are residents of another country may take GRE instead of ALES. All non-native speakers of English are required to submit a proof of satisfactory knowledge of English.

Degree Requirements: 21 credit units of course work beyond the M.S. level or 42 credits of course work beyond the B.S. level is required. Ph.D. candidates must pass a qualifying exam and then must prepare a thesis work proposal. Preparing and defending a dissertation based on original research is the essence of the program. A paper based on the candidate's thesis must be accepted or published in a reputable journal before the dissertation can be defended. The expected duration to complete the Ph.D. program is eight semesters for students who enter the program after an M.S. degree, and ten semesters for those who enter after a B.S. degree. The maximum durations are 12 and 14 semesters, respectively.

Doctor of Philosophy in Neuroscience

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
NSC 510	Sensory and Motor Systems Neuroscience	3 / 7.5
NSC 511	Cellular, Molecular and Developmental Neuroscience	3 / 7.5
NSC 699	Neuroscience Ph.D. Dissertation	- / 140
	Electives (3)	9 / 18
	Neurosciences Seminar	- / 1
	Restricted Electives (2)	6 / 12

Doctor of Philosophy in Neuroscience (After a Bachelor's Degree)

CURRICULUM

Courses		Credits / ECTS Credits
GE 500	Research Methods and Academic Publication Ethics	- / 1
GE 690	Academic Practices	- / 24
NSC 510	Sensory and Motor Systems Neuroscience	3 / 7.5
NSC 511	Cellular, Molecular and Developmental Neuroscience	3 / 7.5
NSC 699	Neuroscience Ph.D. Dissertation	- / 140
	Electives (5)	15 / 30
	Neurosciences Seminars (2)	- / 2
	Restricted Electives (7)	21 / 42

The descriptions provided here for different elective course groups are only for guidance. The complete list of courses in each elective group are given in the electronic registration system.

Elective Courses: Selected 5XX or higher level courses with at least 3 credits offered by different departments.

Restricted Elective Courses: Selected 5XX or higher level CS, EEE, IE, LAW, MBG, ME, MSN, NSC, PHYS and PSYC coded courses with at least 3 credits.

COURSE DESCRIPTIONS

NSC 510 Sensory and Motor Systems Neuroscience
Neural regulation of sensory and motor systems. Functions such as vision, audition, olfaction, gustation, motor movement, reproduction, sleep and biological rhythms, emotion, learning and memory and psychopathology. *Credit units: 3 ECTS Credit Units: 7.5. Aut (H. H. Kafalıgönül)*

NSC 511 Cellular, Molecular and Developmental Neuroscience
The fundamental principles underlying neuronal biophysics; molecular, cellular and developmental processes. Cellular components of nervous tissue, membrane and action potentials, neurotransmitter regulation and in-

tracellular signaling, neural induction and pattern formation, neurogenesis, migration and synaptic regulation. *Credit units: 3 ECTS Credit Units: 7.5. Aut (M. M. Adams)*

NSC 512 Research Methods in Neuroscience
Behavioral experimental design and analysis. Computational Modeling. Neural Networks. Molecular and cellular methods in neurons. *Credit units: 3 ECTS Credit Units: 7.5. Spr (M. M. Adams)*

NSC 513 Behavioural Neuroscience
Seminar course in which students read a wide range of articles that relate to the overview of the neurological processes underlying organismic behavior. Survey on neurobiological explanations of topics such as sensation, movement, motivation, emotion, sleep, learning, neurological disorders, and recovery mechanisms. *Credit units: 3 ECTS Credit Units: 7.5. Aut (Staff)*

NSC 514 Affective Neuroscience
Biological basis of emotion. Overview of and historical basis for the field of affective neuroscience. Mapping affective experience and behavior to brain function, including cross-level integration of anatomical, chemical, and electrical data. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 515 Computational and Numerical Methods in Neuroscience
Basic mathematical techniques for analysis and modeling of neural systems. Various methods in this highly active field are discussed. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 516 Neurobiology of Aging
Biological basis of aging and neurodegenerative disease. Current cellular and brain imaging tools as they relate to understanding the aging and neurodegenerative disease process. Recent advances in research techniques related to aging and neurodegenerative disease. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 546 Computing for Neuroscience
Experimental design and control in systems neuroscience, basics of signal processing, generating images, movies and sounds, basics of optimization and curve fitting, functions for statistical testing and bootstrapping, use of Matlab programming for neural signal processing, signal detection theory, receiver operating characteristic (ROC) analysis. *Credit units: 3 ECTS Credit Units: 7.5. Spr (H. H. Kafalıgönül)*

NSC 591 Pro-thesis Seminar I
Presentations on the current and classical literature. *Credit units: None ECTS Credit Units: 1. Aut (M. M. Adams) Spr (M. M. Adams)*

NSC 599 Neuroscience Master's Thesis
Credit units: None ECTS Credit Units: 56. Aut (M. M. Adams) Spr (M. M. Adams)

NSC 612 Selected Topics in Neuroscience I
Current topics in neuroscience. Survey of the literature related to a current selected topic of interest. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 613 Selected Topics in Neuroscience II
Current topics in neuroscience. Survey of the literature related to a current selected topic of interest. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 670 Lab in Cellular, Molecular, and Developmental Neuroscience
Experimental approaches in cellular, molecular and developmental neuroscience. Experiments on cell structure and organization of the vertebrate central nervous system, and mechanisms underlying neural signaling and plasticity. Laboratory instruction in anatomical, physiological, and biochemical methods for investigating the biology of nerve cells. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 671 Lab in Sensory and Motor Systems Neuroscience
Experimental approaches in sensory and motor systems neuroscience. Laboratory instruction in neuroanatomy, sensory neurophysiology, modern neuroanatomical tracer techniques, psychophysics, and computational neuroscience. *Credit units: 3 ECTS Credit Units: 7.5.*

NSC 691 Pro-thesis Seminar II
Presentations on the current and classical literature. *Credit units: None ECTS Credit Units: 1. Aut (M. M. Adams) Spr (M. M. Adams)*

NSC 699 Neuroscience Ph.D. Dissertation
Credit units: None ECTS Credit Units: 140. Aut (M. M. Adams) Spr (M. M. Adams)

SCHOOL OF APPLIED LANGUAGES

Tanju İnal, Ph.D., Director

The school of Applied Languages offers four-year degree programs in two departments: **Banking and Finance** and **Accounting Information Systems** . Both departments offer students the opportunity to study topics important in banking, finance, and accounting information systems as well as developing advanced communication skills in English and French.

ACADEMIC STAFF

Ebru Güven, Associate Professor
Ph.D., Economics, North Carolina State University, 2001.

Orhan Güvenen, Professor
Ph.D., Economics, University of Paris, Sorbonne, 1975. Economies and strategic research.

Erin Maloney, Instructor
M.P.P., Public Policy, Vanderbilt University, 1991.

Selda Sevin, Instructor
M.A., Management, Hacettepe University, 1999.

Mehmet Nihat Solakoğlu, Associate Professor
Ph.D., Economics, North Carolina State University, 2000.

PART-TIME ACADEMIC STAFF

Uğur Akdoğan, Ph.D., Accounting and Finance, Marmara University, 2006.
Şenol Babuşcu, Ph.D., Management, Hacettepe University, 1997.
Ahmet Başpınar, M.A., Management and Finance, Boston University, USA, 2003.
Ömer Berki, B.A., Faculty of Law, Ankara University, 1972.
Nurettin Ellialtıoğlu, M.S., Financial Economics, Hacettepe University, 2015.
Sibel Sara Erdal Bulucu, M.S., Industrial Relations and Human Resource Management, London School fo Economics, 2000.
Adalet Hazar, Ph.D., Finance and Accounting, Gazi University, 2004.
Vedat Özer, B.A., Department of Banking and Insurance, Gazi University, 1983.

ACCOUNTING INFORMATION SYSTEMS

O. Güvenen (Chair), S. Sevin.

Part-time: U. Akdoğan, A. Başpınar, Ö. Berki.

UNDERGRADUATE PROGRAM

This program blends topics from accounting, international auditing and information systems to develop the knowledge, skills and abilities needed in the accounting profession. The program also seeks to develop advanced communication skills in English and French, which are appropriate for accounting and business. The first year is a foundation course in accounting, application of information technology and languages. Starting in the second year, courses begin to focus more explicitly on the application and integration of information technology into the accounting process while financial and managerial accounting principles are introduced and developed. Communication skills in English and French are further developed with a greater emphasis on business and finance related work in language study.

Accounting Information System Component

The Accounting Information System component of the program provides an understanding of computer and information technology concepts and places strong emphasis on acquiring subject-specific knowledge in international auditing, accounting, finance, and the business environment. Furthermore, the program incorporates a one-month training period in the third and fourth year of study during which students work for firms or within an accounting department of a business.

Language Component

The language courses develop general oral and written language skills as well as more specialized skills such as report writing, negotiating, interpersonal communication, analyzing and synthesizing within the wider context of business. In language work most of the practical sessions may be function-based and devoted to a given skill (oral work, writing proposals) whereas others are topic based and focus more on Business Communications involving case studies that culminate in oral presentations and business reports. Communication skills in both English and French are developed through the use of real-life cases and involve students in team-based projects.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ACC 173	Computer Applications I	3 / 6
ACC 175	Mathematics I	3 / 6
BF 161	Economics I	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
SFL 101	French I	3 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
ACC 170	Computer Applications II	3 / 6
ACC 178	Mathematics II	3 / 6
BF 162	Economics II	3 / 6
ENG 102	English and Composition II	3 / 6
SFL 102	French II	3 / 6
TURK 102	Turkish II	2 / 2
Summer Semester		Credits / ECTS Credits
SFL 103	French III	3 / 6

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ACC 253	Accounting I	3 / 6
ACC 271	Data Structures and Object Oriented Programming I	3 / 6
BF 271	Applications in Probability and Statistics I	3 / 6
GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
SFL 201	French IV	3 / 6
SFL 207	Interpersonal Communication in Business Settings	3 / 6

Spring Semester		Credits / ECTS Credits
ACC 258	Accounting II	3 / 6
ACC 272	Data Structures and Object Oriented Programming II	3 / 6
BF 276	Applications in Probability and Statistics II	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
SFL 202	French V	3 / 6
SFL 208	Written Business Communication	3 / 6

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
ACC 391	Summer Practice	- / 6
BF 383	Ethics, Responsibility and Citizenship	3 / 6
LAW 313	Business Law	3 / 4
SFL 307	English in Business Communication	3 / 6
SFL 335	French in Financial Communication I	3 / 6
	Restricted Elective	3 / 6

Spring Semester		Credits / ECTS Credits
ACC 360	Cost Accounting and Computerized Accounting Applications	3 / 6
ACC 374	Information Systems Security and Information Distortion (in French)	3 / 6
LAW 416	Introduction to Contract Law	3 / 4
SFL 308	English in Organizational Communication	3 / 6
SFL 336	French in Financial Communication II	3 / 6
SFL 490*	Common European Framework of Reference Level B1	- / 1

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
ACC 425	Commercial Law	3 / 6
ACC 463	International Financial Reporting Standards (IFRS)	3 / 6
ACC 473	Management Information Systems (in French)	3 / 6
ACC 491	Summer Practice	- / 6
SFL 405	Intercultural Business Communication	3 / 6
SFL 431	French in Corporate Communication	3 / 6

Spring Semester		Credits / ECTS Credits
ACC 454	International Auditing	3 / 6
ACC 464	Taxation and Turkish Tax Law	3 / 6
ACC 476	Graduation Project in Accounting Information Systems and Auditing	3 / 6
SFL 406	Integrated Marketing Communications (IMC)	3 / 6
SFL 432	Organizational Communication in French	3 / 6

ELECTIVES

HART 111	Introduction to Archaeology	3 / 6
HART 117	Ways of Seeing: Approaches to Art and Architectural History	3 / 6
HART 221	Great Discoveries from the Ancient World	3 / 6
HART 225	Cultural Anthropology	3 / 6
HUM 111	Cultures Civilizations and Ideas I	3 / 6
HUM 112	Cultures Civilizations and Ideas II	3 / 6

One elective course should be taken from the elective courses list offered by the Faculty of Humanities and Letters departments.

COURSE DESCRIPTIONS

ACC 170 Computer Applications II
Students learn the computer skills necessary for future courses in the Department of Accounting Information Systems, including advanced spreadsheets (functions and formulas, data analysis, objects, amortization, matrices, charts, pivot), graphic design, and software integration. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 173.*

ACC 173 Computer Applications I
Students learn the computer skills necessary for general academia, including efficient usage of operating software and application software (word processing, internet, presentation, compression, spreadsheet, and photo editing). *Credit units: 3 ECTS Credit Units: 6. Aut (E. Maloney)*

ACC 175 Mathematics I
Review of algebra, applications of calculus, equations, logarithms to financial data, functions and graphs, applications of functions in business and economics, mathematics of finance. Interest rates, compounding, annuities, present and future values, amortization of mortgage loans and sinking funds for bonds. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Güven)*

ACC 178 Mathematics II
Introduction to matrix and vector equations, limits and continuity. Application of derivatives, integrals to financial and banking data. Multivariate calculus. Maximizing profit and utility and minimizing cost. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 175. Spr (E. Güven)*

ACC 253 Accounting I
An introductory accounting course which covers the concepts and issues of financial accounting such as general accounting principles, the accounting cycle which starts with the analysis and recording of economic events and ends with the preparation of balance sheets and income statements for service and merchandize firms. Development of accounting principles and procedures related to assets, liabilities and owner's equity. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Sevin)*

ACC 258 Accounting II
Introduction to management accounting for internal reporting and decision making. Topics include cost volume profit analysis, cost behavior, activity based costing, process and job order costing, budgeting and budget variance analysis , pricing, responsibility accounting and performance evaluation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 253. Spr (S. Sevin)*

ACC 271 Data Structures and Object Oriented Programming I
Fundamental programming in a high level language and introduction to programming principals. Topics include program structure and organization, object-oriented programming (classes, objects, types), data structures (lists, stacks, queues, hash tables), basic user interfaces. Java is the principal programming language. *Credit units: 3 ECTS Credit Units: 6.*

ACC 272 Data Structures and Object Oriented Programming II
Introduction to systems development providing a foundation for systems implementation cycle, systems analysis and object oriented program design techniques and project management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 271. Aut (Staff)*

ACC 360 Cost Accounting and Computerized Accounting Applications
Advanced topics in financial and managerial accounting, with special emphasis on accounting practices applicable in Turkey. The uniform accounting plan, inventory accounts, preparation and reporting of financial statements (balance sheet, income statement, cash flow statement, and statement of shareholders' equity) and in-depth study on cost accounting, Special emphasis will be given to adjusting and closing entries with popular accounting software packages (Likom, Logo, SAP). *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 258. Spr (S. Sevin)*

ACC 374 Information Systems Security and Information Distortion (in French)
Information Systems privacy and security in the context of software, hardware, networks and databases. The very important impact of information systems security and information distortion to research, socio-economic systems with specific reference to accounting information systems, banking and finance and decision making systems. *Credit units: 3 ECTS Credit Units: 6. Spr (O. Güvenen)*

ACC 391 Summer Practice
One-month training period. (see www.bilkent.edu.tr/~sal) *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

ACC 425 Commercial Law
This course offers an introductory and basic study of Turkish commercial law (all chapters of TTK - Turkish Commercial Code Nr.6102 and connected Codes) and fundamental principles of international commercial law such as ICC-Inco terms, ITC Model Contracts, payment varieties, arbitration procedures etc. *Credit units: 3 ECTS Credit Units: 6. Aut (Ö. Berki)*

ACC 454 International Auditing
The primary objective of the course is to distinguish between accounting and auditing through familiarizing the students with the basic auditing concepts. Topics such as types of audits and auditors, audit reports for financial statements, professional ethics, evidence accumulation and verification procedures, internal control and auditing engagements are discussed. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 463. Spr (U. Akdoğan)*

ACC 463 International Financial Reporting Standards (IFRS)
This course is an introductory course on international financial reporting. It focuses on the main aspects of international account and financial reporting standards by comparing with Turkish Accounting System. Topics covered include preparation of financial statements, inventory, cash flow statements, accounting policies plant, property and equipment, revenue, investment property, intangible assets, operating segments, impairment of assets, provisions, contingent liabilities and assets, foreign exchange rates, inflation and some financial instruments. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 253 and ACC 258. Aut (U. Akdoğan)*

ACC 464 Taxation and Turkish Tax Law
This course comprises the principles of tax law, taxation process, income tax, corporation tax, value added tax, real estate tax, inheritance tax, tax penalties, conflicts of taxation and some other taxes in the Turkish system. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Başpınar)*

ACC 473 Management Information Systems (in French)
Management and information technologies and communications (ITC), knowledge-based economy and knowledge society, business plan and business model, business models for electronic markets, electronic commerce, systems development and documentation techniques, data bases, impact of ITC on public and corporate governance, information and decision-making. *Credit units: 3 ECTS Credit Units: 6. Spr (O. Güvenen)*

ACC 476 Graduation Project in Accounting Information Systems and Auditing
This project is designed to expose students to real life situations involving Accounting Information Systems and Auditing. The students will put into practice the knowledge and Skills acquired from their previous courses by creating an accounting information system and auditing project. This will be done by establishing a virtual company through which students will identify business processes and transactions, gather data elements to create the accounting information system and apply to these two components, internal controls in terms of user rights and security policies. Students will be guided throughout the project and will follow a combination of classes, workshops and seminars given by professionals. To complete this course, students will prepare and present a written project which will based on assessing the risks of the created accounting information system and auditing. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 258 and ACC 360. Aut (S. Sevin) Spr (S. Sevin)*

ACC 491 Summer Practice
One-month training period. (see www.bilkent.edu.tr/∼sal) *Credit units: None ECTS Credit Units: 6. Aut (Staff)*

BANKING AND FINANCE

M. N. Solakoğlu (Chair), E. Güven, E. Maloney.

Part-time: Ş. Babuşcu, N. Ellialtıoğlu, S. S. Erdal Bulucu, A. Hazar, V. Özer.

UNDERGRADUATE PROGRAM

This program is designed to provide a solid understanding of banking and financial studies and to develop advanced communication skills in English and French which are necessary for banking and finance. The first year is a foundation course in both banking/finance and languages. Starting in the second year, courses become more specialized, allowing in-depth study of banking and finance topics with a focus on real-world applications.

Banking/Finance Component

The banking and finance component of the program is carried out in English and French as a second foreign language. It seeks to develop competence in financial markets and organizations. This is complemented by the use of computer assisted applications related to banking and finance. Additionally, two one-month training periods are incorporated into the summer programs aiming to familiarize students with the working environment in financial institutions and other business organizations.

Language Component

The language courses develop general oral and written language skills as well as more specialized skills such as translating, report writing, negotiating, analyzing and synthesizing within the wider context of business. In the language work most of the practical sessions may be function-based and devoted to a given skill (oral work, translation into Turkish). Other language work is topic-based and focuses more on business communications involving case studies that culminate in oral presentations and business reports.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
ACC 175	Mathematics I	3 / 6
BF 161	Economics I	3 / 6
BF 173	Computer Applications I	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
SFL 101	French I	3 / 6
TURK 101	Turkish I	2 / 2
Spring Semester		Credits / ECTS Credits
ACC 178	Mathematics II	3 / 6
BF 162	Economics II	3 / 6
BF 174	Computer Applications II	3 / 6
ENG 102	English and Composition II	3 / 6
SFL 102	French II	3 / 6
TURK 102	Turkish II	2 / 2
Summer Semester		Credits / ECTS Credits
SFL 103	French III	3 / 6

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
ACC 253	Accounting I	3 / 6
BF 271	Applications in Probability and Statistics I	3 / 6

GE 250	Collegiate Activities Program I	- / 1
HIST 200	History of Turkey	4 / 8
SFL 201	French IV	3 / 6
SFL 207	Interpersonal Communication in Business Settings	3 / 6
	Restricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

ACC 258	Accounting II	3 / 6
BF 264	Elements of Money and Banking I	3 / 6
BF 276	Applications in Probability and Statistics II	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
SFL 202	French V	3 / 6
SFL 208	Written Business Communication	3 / 6

THIRD YEAR

Autumn Semester Credits / ECTS Credits

ACC 425	Commercial Law	3 / 6
BF 365	Elements of Money and Banking II	3 / 6
BF 383	Ethics, Responsibility and Citizenship	3 / 6
BF 391	Summer Practice	- / 6
SFL 307	English in Business Communication	3 / 6
SFL 335	French in Financial Communication I	3 / 6

Spring Semester Credits / ECTS Credits

BF 362	Banking Operations	3 / 6
BF 372	Computerized Financial Applications	3 / 6
BF 384	Introduction to Financial Econometrics	3 / 6
SFL 308	English in Organizational Communication	3 / 6
SFL 336	French in Financial Communication II	3 / 6
SFL 490	Common European Framework of Reference Level B1	- / 1

FOURTH YEAR

Autumn Semester Credits / ECTS Credits

BF 469	Banking Law	3 / 6
BF 473	Computerized Brokerage and Dealer Operations	3 / 6
BF 491	Summer Practice	- / 6
SFL 405	Intercultural Business Communication	3 / 6
SFL 431	French in Corporate Communication	3 / 6
	Restricted Elective	3 / 6

Spring Semester Credits / ECTS Credits

BF 422	Graduation Project in Banking and Finance	3 / 6
BF 488	Computerized Insurance Services and Operations	3 / 6
LAW 416	Introduction to Contract Law	3 / 4
SFL 406	Integrated Marketing Communications (IMC)	3 / 6
SFL 432	Organizational Communication in French	3 / 6

ELECTIVES

BF 461	Corporate Finance	3 / 6
BF 462	Investments	3 / 6
BF 464	International Finance	3 / 6
BF 467	Research in Finance	3 / 6
BF 479	Issues in Banking	3 / 6
BF 480	Applied Capital Markets	3 / 6
BF 485	Introduction to Bank Risk Analysis and Evaluation	3 / 6
COMD 207	Film History	3 / 6
FA 271	History of Art I	3 / 5
FA 272	History of Art II	3 / 5
HART 111	Introduction to Archaeology	3 / 6

HART 117	Ways of Seeing: Approaches to Art and Architectural History	3 / 6
HART 221	Great Discoveries from the Ancient World	3 / 6
HART 225	Cultural Anthropology	3 / 6
HUM 111	Cultures Civilizations and Ideas I	3 / 6
HUM 112	Cultures Civilizations and Ideas II	3 / 6
MAN 321	Corporate Finance	3 / 6
POLS 101	Introduction to Political Science I	3 / 6
THM 415	Finance	3 / 6

At least two elective courses should be taken from the elective courses list offered by BF (Banking/Finance), and MAN (Management) departments, and the Faculty of Humanities and Letters departments.

COURSE DESCRIPTIONS

BF 161 Economics I
Supply and demand analysis, the pricing system, theory of consumer behavior, theory of production, market structures; perfect competition, monopoly, other forms of imperfect competition, distribution of income; factor mobility, factor pricing. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Güven)*

BF 162 Economics II
National income and expenditure: national income, its measurements, flow of money income between households, firms and governments. Nature of money and monetary institutions, role of money in macroeconomics, inflation. Employment and unemployment, economic growth. Public finance: budget, monetary and fiscal policy. *Credit units: 3 ECTS Credit Units: 6. Spr (E. Güven)*

BF 173 Computer Applications I
Students learn the computer skills necessary for general academia, including efficient usage of operating software and application software (word processing, internet, presentation, compression, spreadsheet, and photo editing). *Credit units: 3 ECTS Credit Units: 6. Aut (E. Maloney)*

BF 174 Computer Applications II
Learning the computer skills necessary for a degree in Banking and Finance, including advanced spreadsheeting (functions, formulas, data analysis, objects and symbols, amortization, matrices, and charts), and software integration. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 173. Spr (E. Maloney)*

BF 264 Elements of Money and Banking I
Introduction to monetary and financial institutions, central banks and monetary policy, the transmission mechanism of money, money supply process, inflation and inflation targeting, money supply and demand as related to aggregate real supply and demand for goods and services, Keynesians versus Monetarists, Monetary policy versus government budget, PSBR, budget versus inflation, monetary and fiscal policy effects under fixed versus floating exchange rate policy, putting all together: the IS-LM-FE model. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 162. Spr (Staff)*

BF 271 Applications in Probability and Statistics I
Introduction to probability, the central limit theorem, data collection, descriptive statistics of central tendency and dispersion, the normal distribution, summarizing and interpreting financial data, histograms, examining relationships between economic and financial variables using graphical techniques, simple correlation, sampling and point and interval estimates of parameters. *Credit units: 3 ECTS Credit Units: 6. Aut (M. N. Solakoğlu)*

BF 276 Applications in Probability and Statistics II
Parametric and non-parametric tests of hypothesis, ANOVA, simple and multiple regressions based on excel and other statistical package programs, index numbers, time series and panel data all applied to financial and banking data. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 271. Spr (E. Güven)*

BF 362 Banking Operations
Canons of lending, personal borrowers, other borrowers, general principles of security, review and control of accounts. Interpretation of financial statements, Interbank Nostro and Vostro accounts, remittance and receipt of funds, rates of exchange, financing international trade for exporters and importers. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 252. (Prerequisite not required when offered as elective to other departments). Spr (Ş. Babuşcu)*

BF 365 Elements of Money and Banking II
Overview financial markets and institutions, financial sector versus real economy, rates of returns: HPR, APR, EAR, risk and term structure of interest rate, bond market, pricing bonds, duration and bond price elasticity; stock market, stock market indices, pricing stocks, diversifying assets, the CAPM, the APT, the beta; portfolio with the

CAL and the SML; performance analysis based on Sharp, Treynor and Jensen's alpha. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 264. Aut (M. N. Solakoğlu)*

BF 372 Computerized Financial Applications
This course aims to develop skills of empirical work by applying financial theories to real life problems with computers. It covers tools of financial statement analysis, forecasting, risk measurement in finance, technical analysis of stock markets, Markowitz portfolio design, the Capital Asset Pricing Model (CAPM) and performance assessment of portfolios. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 271 and BF 276 and BF 365. Spr (M. N. Solakoğlu)*

BF 383 Ethics, Responsibility and Citizenship
The aim of this course is to introduce ethical issues in relation to business and corporations. Emphasis will be given to the notion of corporate citizenship and its contribution to the framing of business ethics and to concepts of corporate social responsibility (CSR). *Credit units: 3 ECTS Credit Units: 6. Aut (S. Sevin)*

BF 384 Introduction to Financial Econometrics
Introductionary level econometrics course designed to analyse financial time series and panel data with emphasis on model building and estimating parameters with the use of least squares techniques and maximum likelihood theories, testing stationarity, cointegration and volatility hypotheses for univariate and multivariate time series models. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 271 and BF 276 and BF 365. Spr (M. N. Solakoğlu)*

BF 391 Summer Practice
One-month training period. (see www.bilkent.edu.tr/∼sal) *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

BF 422 Graduation Project in Banking and Finance
This course is designed for students to apply undergraduate class work to real life situations. In the first part, students will be exposed to a number of carefully selected topics through classes, workshops and seminars. In the second part, the course will have three components: research, a written project, and a project presentation. This course will create a model of real life work, including planning, reading, analyzing, doing research, writing, interpreting, and presenting findings. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 372 and BF 384. Aut (M. N. Solakoğlu) Spr (M. N. Solakoğlu)*

BF 461 Corporate Finance
The functions of financial markets and institutions, financial tables, ratio analysis, time value of money, valuation of stocks and bonds, investment and financing decisions, risk and return, derivatives, financial planning. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 252 and BF 365. (Prerequisite not required when offered as elective to other departments).*

BF 469 Banking Law
Sources of law: relevance to the business of banking, conflict resolving, judicial and quasi-judicial processes, court system, quasi-judicial bodies, bank ombudsman, contract law: role of contract law in banking, nature and elements of a contract, banker/customer contract. Property and its use as security; real and personal property, security functions and types. A bank's rights and duties as a mortgagee. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 362. Aut (Ş. Babuşcu)*

BF 473 Computerized Brokerage and Dealer Operations
Computerized Brokerage and Dealer Operations Applications with special emphasis on stocks, foreign exchange (FX) and commodity markets. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BF 365 and BF 384. Aut (N. Ellialtıoğlu)*

BF 480 Applied Capital Markets
Structure of capital markets: stocks, bonds, mortgages etc. and capital market institutions such as capital markets board, stock exchange markets, legal and institutional requirements of the equity markets. *Credit units: 3 ECTS Credit Units: 6. Spr (A. Hazar)*

BF 485 Introduction to Bank Risk Analysis and Evaluation
This course covers the Basel 1-2 (The New Accord) topics with particular emphasis on the three pillars of Basel 2: Minimum capital requirements, supervisory review of capital adequacy and public disclosure for market discipline. Topics such as external rating, internal rating; different approaches to the measurement of credit risk and operational risk, steps for the adaptation of the new accord in Turkey are also covered. *Credit units: 3 ECTS Credit Units: 6.*

BF 488 Computerized Insurance Services and Operations
The insurance sector and its public and private institutions; principles, basics and legal aspects of insurance services and operations in Turkey and abroad; Insurance operations in practice: Computerized insurance services, use of special software currently used for insurance services and operations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ACC 258. Spr (V. Özer)*

BF 491 Summer Practice
One-month training period. (see www.bilkent.edu.tr/~sal) *Credit units: None ECTS Credit Units: 6. Aut (Staff) Spr (Staff)*

SFL 101 French I
The aim of this course is to develop basic communication skills in French for social and professional use. Students will be exposed to basic communication situations related to everyday communication through which they will learn the basic structures of French grammar and acquire essential notions of French culture. *Credit units: 3 ECTS Credit Units: 6. Aut (A. Demir)*

SFL 102 French II
This course expands on the skills acquired in SFL 101 and emphasizes language skills needed to describe and carry out typical tasks in the workplace. Special attention will be given to terminology and pronunciation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 101. Spr (A. Demir)*

SFL 103 French III
This course emphasizes language skills needed to interact socially in a professional environment and aims to further develop language awareness and accuracy in language use by engaging students with texts, both written and audio, from different contexts. Students will learn how to describe a company, follow instructions, write effectively and develop the ability to present information related to work settings cohesively and coherently both orally and in writing and to express ideas and opinions effectively. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 102.*

SFL 201 French IV
This course aims at developing the ability to listen and read complex texts for gist and detail and to apply this knowledge and understanding to speaking and writing. Emphasis will be given to texts related to banking, finance and accounting and case studies will focus on customer relationships and banking services. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 103. Aut (N. Siami)*

SFL 202 French V
This course builds on the skills acquired in SFL 201. Besides professional skills and specific terminology concerning investment opportunities and types of credit, students will also deal with the intercultural aspect of business. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 201. Spr (N. Siami)*

SFL 207 Interpersonal Communication in Business Settings
Theories and practice in verbal and nonverbal communication with a focus on interpersonal relationships. Emphasis on improving interpersonal skills and helping students increase their communication competence in business-related exchanges. *Credit units: 3 ECTS Credit Units: 6. Aut (B. Gülen)*

SFL 208 Written Business Communication
Develops understanding of communication theories and builds skills in written communication emphasizing style and audience awareness. Practical applications center on external and internal business correspondence. Letters, memos that inform persuade, grant and refuse are stressed. *Credit units: 3 ECTS Credit Units: 6. Spr (B. Gülen)*

SFL 307 English in Business Communication
This course aims to develop communicative competency in writing short reports, conducting meeting and delivering presentations through assignments designed to meet real organizational needs. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 208. Aut (B. Gülen)*

SFL 308 English in Organizational Communication
Covering a range of communication issues and practices within businesses and other organizations, emphasis is placed on effective communication through oral and written reporting, proposals, negotiations and team presentation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 307. Spr (B. Gülen)*

SFL 335 French in Financial Communication I
This course aims to improve students' ability to communicate effectively in a wide-range of accounting and financial contexts. Realistic case studies related to finance, banking operations, investments and economics will be used to develop language skills. Emphasis will be given to a variety of topic areas such as financial reporting, corporate governance, mergers and acquisitions, insurance, investment banking. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 202. Aut (V. C. E. Paternotte)*

SFL 336 French in Financial Communication II
This course aims to improve students' ability to communicate effectively in a wide-range of accounting and financial contexts. Realistic case studies related to finance, banking operations, investments and economics will be used to develop language skills. Emphasis will be given to a variety of topic areas such as financial reporting, corporate governance, mergers and acquisitions, insurance, investment banking. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 335. Spr (V. C. E. Paternotte)*

SFL 392 Common European Framework of Reference Level B2
French Language Proficiency text. All students entering the Translation and Interpretation (TRIN) programs in September 2009 are required to pass the Common European Framework of Reference test. (Level B2) in order to graduate. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

SFL 405 Intercultural Business Communication
This course focuses on business communication in intercultural environments. Cross-cultural communication theories and a cultural framework will be used to assist in the analysis, evaluation and creation of appropriate business messages addressed to specific audiences in both English and French. Practical applications center on designing a multilingual/multicultural website. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 207. Aut (S. S. Erdal Bulucu)*

SFL 406 Integrated Marketing Communications (IMC)
This course introduces students to the areas that comprise IMC: public relations, advertising, direct marketing, sales promotions, events promotions and online communication. Using these communication tools, students learn how to target an audience (in English + French), asses communication options and formulate IMC plans for organizations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 208. Spr (S. S. Erdal Bulucu)*

SFL 431 French in Corporate Communication
This course aims to develop communications competency in writing short reports, conducting meetings and delivering presentations through assignments designed to meet real organizations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 336. Aut (V. C. E. Paternotte)*

SFL 432 Organizational Communication in French
Covering a range of communication issues and practices within business and other organizations, emphasis is placed on effective communication in French through oral and written reporting, proposals, negotiations and team presentations. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: SFL 431. Spr (V. C. E. Paternotte)*

SFL 490 Common European Framework of Reference Level B1
French Language Proficiency text. All students entering the Banking and Finance (BF) and Accounting Information Systems (ACC) programs in September 2009 are required to pass the Common European Framework of Reference test. (Level B1) in order to graduate. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

SCHOOL OF APPLIED TECHNOLOGY AND MANAGEMENT

Kamer Rodoplu, Director
Erkan Uçar, Ph.D., Assoc. Director

The School of Applied Technology and Management comprises three academic departments:

- Business Information Management
- Computer Technology and Information Systems
- Tourism and Hotel Management

The Department of Business Information Management (BIM) provides an "Applied Business" education with enriched "Information Management" and "Business Communications" components. BIM courses are designed to prepare innovative, adaptable graduates who have administrative and management skills and a solid grounding in the primary functions of business; who have the ability to use information effectively and to manage information resources and systems strategically; and who have sound teamwork and interpersonal communication abilities and can apply these skills equally to internal and external audiences. A very valuable part of the curriculum is the Industrial Training placement. This gives the student a "real life" business experience and adds a practical perspective to the theoretical studies. Students can specialize in the desired area of the study program through a wide variety of elective courses.

The Computer Technology and Information Systems Department (CTIS) aims to provide a first rate education in the field of computers and information technologies for college and high school graduates who are willing to apply themselves diligently to a computer education and who wish to prepare themselves for the broad range of exciting career opportunities, in this dynamic and rapidly expanding field. The CTIS curriculum is designed to meet the popular and expanding IT industry requirements like mobile application development, networks and web technologies, software engineering, data warehousing, and information storage and management where technical background is not sufficient and needs to be supported by social skills. To accomplish this, CTIS technical courses are complemented by a range of business studies. These include both management and social/communication courses. Main goal is to graduate students who are technically both competent and confident, who are innovative, adaptable, and who have sound teamwork and interpersonal communication skills.

The Department of Tourism and Hotel Management (THM) aims to prepare students for managerial and supervisory positions in hotel, restaurant and travel establishments, encouraging them to establish their own firms in hospitality and travel industries. Hotel and restaurant business, culinary arts and travel industry studies emphasized with management courses are taught theoretically. On-premise training facilities including the Practice Restaurant; fully equipped demonstration kitchen, the small quantity food laboratory, practice kitchen are the practical side of the curriculum. The THM Department also conducts industrial training programs, so that students may complete internships and externships providing real life experience with well known leading international hotel and restaurant chains and multinational travel and tour operators offering a healthy blend of theoretical and applied learning of the 21st century. Bilkent Hotel and Conference Center - Ankara is a significant part of the Departments' training programs.

ACADEMIC STAFF

Mustafa Akgül, Associate Professor
Ph.D., Combinatorics and Optimization, University of Waterloo, 1981. Combinatorial optimization, mathematical programming, linear programming, theoretical computer science, nonsmooth optimization.

Beyhan Akporay, Instructor
M.S., Technology Management, University of Maryland University Collage, 2007. Software engineering, distributed systems, project management.

Duygu Albayrak, Instructor
Ph.D., Computer Education and Instructional Technology, Middle East Technical University, 2012. Discrete mathematics, information technologies. E-learning, distance learning, effectiveness of educational strategies, learning management systems, software engineering education.

Seyid Amjad Ali, Assistant Professor
Ph.D., Electrical and Electronic Engineering, Eastern Mediterranean University, 2007. Algorithms, distributed programming, telecommunications, image processing, wireless sensor networking.

Ayşegül Altaban, Instructor
Ph.D., Industrial Engineering, Middle East Technical University, 2013. Management information systems, introductory mathematics, calculus for business studies, business computer applications.

Oğuz Benice, Instructor
Diplôme, Etudes Supérieures en Hôtellerie et Restauration, Ecole Hôtellière de Lausanne, Switzerland, 1992. Food and Beverage Management, Introduction to Business, Semester Internship, Concept and Design for Food and Beverage Outlets.

Jamel Ben Chafra, Lecturer
MBA, Bilkent University, 1996. Rooms Division Management, Service Operations Management, Finance.

Ayşe Baş Collins, Associate Professor
Ph.D., Educational Sciences, Middle East Technical University, 1999. Human Resources Management, Social Psychology, Senior Project, Research Techniques.

Gülgün Demirel, Instructor
MBA, Gazi University, 1977. Keyboarding.

Elif Denizci, Instructor
M.S., Tourism Management Education, Gazi University, 2011. International Cuisine, Semester Internship.

Fatma Güliz Esen, Instructor
B.A., Foreign Language Education, Middle East Technical University, 1991. Database management systems, business computer applications.

Anthony Burnett Evans, Instructor
B.A., Economics, Sir George Williams University, Canada, 1968. Financial statement analysis, corporate finance, strategic management, managerial accounting.

Serkan Genç, Instructor
Ph.D., Computer Engineering, Middle East Technical University, 2010. Computer graphics, operating systems, website design and implementation.

Eda Gürel, Assistant Professor
Ph.D., Business Administration, Hacettepe University, 2006. Principles of Marketing, Senior Project, Principles of Economics.

Arzu Sibel İkinci, Instructor
B.A., Economics, Hacettepe University, 1987. Business computer applications, web based application development.

Ebru İnanç, Instructor
M.A., European Union, Atılım University, 2007. Introduction to psychology, small group and team communication, business communications.

Güneş Karamullaoğlu, Instructor
MBA, Social Sciences, Gazi University, 2000. Co-op Management Applications, Tourism Policies and Sustainability, Event Management, Dynamics of Tourism, Summer Internship.

Burcu Liman, Instructor
M.S., Computer Engineering, Atılım University, 2006. JAVA programming, e-learning, learning management systems.

Ayşe Nuriye Örer, Instructor
Ph.D., Dietetics and Nutrition, Hacettepe University, 1995. Nutrition and Sanitation, Health Studies , Nutritional Anthropolgy, Nutrition and General Health, Senior Project, Seminars on Tourism Industry.

Elif Sibel Özdilek, Instructor
Ph.D., International Relations, Middle East Technical University, 2009. Business communications, managerial communications, public relations management, strategic brand management.

Nazende Özkaramete Coşkun, Instructor
Ph.D., Economics, Yeditepe University, 2007. Principles of Economics I, Principle of Economics II, Statistics.

Aykut Pekcan, Assistant Professor
Ph.D., Management, Ankara University, 1997. Organizational Behavior, Human Resources Management, Senior Project, Principles of Management.

Kamer Rodoplu, Instructor
Diplôme d'Ingénieur en Génie Electrique, Institut National des Sciences Appliquées de Lyon, 1982. Hardware design and interfacing, signal processing, telecommunications and networking, calculus.

Nur Sağlam, Instructor
MBA, Gazi University, 1998. Hospitality industry computerization, business computer applications.

Okyay Say, Instructor
B.S., Computer Science and Engineering, Hacettepe University 1989. Object oriented programming, data structures.

Nimet Ceren Serim, Instructor
M.S., Computer Engineering, Atılım University, 2009. Object oriented programming, Linux OS.

Cüneyt Sevgi, Instructor
Ph.D., Information Systems, Middle East Technical University, 2009. Software engineering, and software management, computer networks, wireless sensor networks.

Mustafa Siyahhan, Instructor
M.S.J., Ohio University, 1974. Senior Project, Principles of Economics I, Principles of Marketing, Tourism Economics, Stratecic Marketing for the Hospitality Industry, Tourism Attractions of Turkey.

Neşe Şahin Özçelik, Instructor
M.S., Computer Engineering, Atılım University, 2004. Object oriented programming, JAVA, web programming, mechatronics.

Esin Şenol, Instructor
MBA, Atılım University, 2008. Purchasing and cost analysis, micros fidelio materials control-cheftec, introduction to business.

Serpil Tın, Instructor
M.S., Electrical and Electronics Engineering, Middle East Technical University, 1991. Computer networks, data communications, software engineering, algorithms and programming languages, management information systems.

Satılmış Topçu, Assistant Professor
Ph.D., Electrical and Electronics Engineering, Bilkent University, 1994. Discrete mathematics, management of frequency spectrum, RF propagation simulation, frequency planning, geographic information systems (GIS) - spatial data manipulation, VLSI and circuit simulation.

Erkan Uçar, Instructor
Ph.D., Information Systems, Middle East Technical University, 2012. Software engineering, programming languages, IT outsourcing, business process reengineering, artificial intelligence.

Ali Ünal, Instructor
M.A., Başkent University, 2003. Restaurant Service, Behavior and Etiquette.

Hacer Üstündağ, Instructor
B.A., Business Administration, Hacettepe University, 1984. Tourism Management Applications, Hospitality Management Accounting , Semester Internship, Principles of Accounting.

Rabia Üşenmez, Instructor
M.S., Management Information Systems, Gazi University, 2015. Website design, business computer applications, management information systems.

Hamdi Murat Yıldırım, Instructor
Ph.D., Mathematics, Middle East Technical University, 2007. Algorithms, operating systems, cryptography.

Füsun Yürüten, Instructor
M.S., Computer Engineering, Middle East Technical University, 1993. Database management systems, object oriented system analysis and design, systems development, programming languages.

VOCATIONAL SPECIALISTS

Yusuf Evren Aykaç
M.S., Health Informatics, Hacettepe University, 2013.

Leyla Sezer
M.S., Computer Engineering, Atılım University, 2009

Efecan Yılmaz
B.S., Computer Technology and Information Systems, Bilkent University, 2015.

Hatice Zehra Yılmaz
A.S., Computer Technology and Programming, Bilkent University, 1994.

PART-TIME ACADEMIC STAFF

Adil Cem Ağın, MBA., Başkent University University, 2010. Contemporary Practices in Human Resources Management.
Barış Ak, B.S., Tourism and Hotel Management, Bilkent University, 2011. Culinary Arts, Johnson & Wales University, 2012.
Onur Aytar, M.S., Computer Science, Northeastearn University, Boston, M.A. USA, 2003.
Çavlan Başarır, B.S., Graphic Design, Bilkent University, 1997.
Serdar Bilecen, B.S., Electrical and Electronic Engineering, Middle East Technical University, 1987.
Çağla Gizem Göğüş, Ph.D. Business Administration, Gebze Institute of Technology.
Dilek Lüle, B.S., Business Administration, Middle East Technical University, 1988. International Business.
Enver Öncü, MBA, Labor Economy and Industrial Relationship, Ankara University, 1997.

BUSINESS INFORMATION MANAGEMENT

N. Sağlam (Chair), A. Altaban, G. Demirel, F. G. Esen, A. B. Evans, A. S. İkinci, E. İnanç, E. S. Özdilek, R. Üşenmez.

Part-time: A. C. Ağın, O. Aytar, Ç. Başarır, S. Bilecen, D. Lüle.

All major organizations place a high value on graduates who combine general business knowledge with solid computer and information management training, plus strong communication and interpersonal skills. The BIM study program is designed to prepare its students for this challenge. Specifically the curriculum has three main focuses:

Business Administration: Business Administration courses constitute almost 40% of the curriculum. To provide a foundation in basic administrative and management skills, students are given a wide range of business studies. In addition to specialized courses like accounting, finance, statistics and law, students also gain a clear perspective of the human, organizational and social factors related to successful business operations, through a range of supporting business studies which provide a foundation in basic administrative and management skills.

Information Management: The courses on information management area address goals such as active information finding, quantitative reasoning, analytical thinking and problem solving. Starting with extensive hands-on experience and business- oriented applications, students then learn to evaluate, select, implement and manage information systems. By the time they graduate, Business Information Management graduates will have experienced all phases of project development through a web based project, which introduces 'creative elements', graphics design, plus new challenges in Information Systems Analysis and Information Architecture.

Business Communications: Business Information Management aims to graduate students who have strong teamwork and interpersonal communication abilities, developed through courses that focus on writing, speaking, presenting, debating and negotiating in English. The students also strengthen their verbal and written communication skills through an experience in various communication techniques such as; drama, presentation techniques, team discussions and the use of audio visual aids.

Internship: The curriculum includes both a 30 day summer training program and a full-semester corporate internship. These training programs are a significant part of the BIM curriculum and an important component of the students' development. Students experience first hand, the challenges, opportunities and frustrations of business life. They learn how to interact with people from a variety of backgrounds and to serve as contributing team members. They also gain the perspective and self-confidence they will need when selecting a career upon graduation. In fact, our students frequently receive offers for later full-time employment during their internship periods.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
BIM 100	Introductory Mathematics	2 / 4
BIM 103	Keyboarding	3 / 6
ECON 105	Principles of Economics I	3 / 5
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
SOC 101	Introduction to Sociology	3 / 6
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
BIM 107	Calculus for Business Studies	3 / 5
BIM 121	Business Computer Applications I	3 / 6
ECON 106	Principles of Economics II	3 / 5
ENG 102	English and Composition II	3 / 6
PSYC 100	Introduction to Psychology	3 / 6
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
BIM 122	Business Computer Applications II	3 / 6
BIM 201	Problem Solving and Programming	4 / 7
BIM 205	Principles of Accounting	3 / 5
BIM 223	Business Communications	3 / 6
BIM 418	Management Information Systems	3 / 5
GE 250	Collegiate Activities Program I	- / 1
	Unrestricted I- Elective	3 / 5
Spring Semester		Credits / ECTS Credits
BIM 215	Database Management Systems	4 / 7
BIM 224	Managerial Communications	3 / 6
BIM 260	Financial Statement Analysis	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
	Unrestricted I- Elective	3 / 5

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
BIM 108	Business Statistics	3 / 5
BIM 206	Managerial Accounting	3 / 6
BIM 242	Web Site Design	3 / 6
BIM 390	Summer Internship	- / 9
LAW 313	Business Law	3 / 4
	Restricted Elective	3 / 6
Spring Semester		Credits / ECTS Credits
BIM 310	Semester Internship	6 / 22

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
BIM 261	Corporate Finance	3 / 6
BIM 341	Web Based Application Development	4 / 7
BIM 375	Public Relations Management	3 / 6
	Restricted Electives (2)	6 / 12
Spring Semester		Credits / ECTS Credits
BIM 316	Information Systems Analysis	3 / 7
BIM 417	Senior Seminars in Business Information Management	3 / 5
BIM 492	Strategic Management	3 / 6
	Restricted Electives (2)	6 / 12

RESTRICTED ELECTIVES

The courses in the elective list can be followed under STARS Academic Units page.

COURSE DESCRIPTIONS

BIM 100 Introductory Mathematics
Basics of algebra, operations with fractions and ratio/proportions, operations with algebraic expressions, factoring polynomials, details of linear equations, linear and absolute value inequalities, interpreting verbal questions with sets, systems of equations (algebraic/graphical solutions) and verbal (non-business) applications, basics of statistics, introduction to break-even logic on graphs, exponential and radical expressions and logical statements and truth tables, graph theory and related visual reasoning. *Credit units: 2 ECTS Credit Units: 4. Aut (A. Altaban) Spr (A. Altaban)*

BIM 103 Keyboarding
Designed to learn touch type writing system on a personal computer keyboard using correct techniques as well as the development of speed and accuracy. Touch typing without visual assistance on a standard keyboard. *Credit units: 3 ECTS Credit Units: 6. Aut (G. Demirel) Spr (G. Demirel)*

BIM 107 Calculus for Business Studies
Functions. The graph of a function. Lines and linear functions. Functional models. Limits. One-sided limits and continuity. The derivative. Techniques of differentiation. Higher-order derivatives. The chain rule. Marginal analysis and approximation by increments. Implicit differentiation and related rates. Increasing and decreasing functions. Relative extrema. Concavity and points of inflection. Curve sketching. Optimization. Elasticity of demand. Exponential functions. Logarithmic functions. Differentiation of exponential and logarithmic functions. Exponential models. The indefinite integral. The general antiderivative of a function. Rules for integrating common functions. Algebraic rules of indefinite integration. Applied initial value problems. The definite integral and the fundamental theorem of calculus. Net change. Area justification of the fundamental theorem of calculus. Area between curves and average value. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: BIM 100. Aut (A. Altaban) Spr (A. Altaban)*

BIM 108 Business Statistics
Statistics and its role in managerial decision making, discrete and continuous numerical data, level of measurement for numerical data, graphical description of data, descriptive measures, basic counting rules, probability concepts, discrete probability distributions, continuous probability distributions; standard, normal, t, chi square and f distribution, sampling and statistical inference, hypothesis testing, bivariate data, regression, correlation. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: BIM 107 or THM 164. Aut (N. Özkaramete Coşkun) Spr (N. Özkaramete Coşkun)*

BIM 121 Business Computer Applications I
Learning about and understanding computers and technology to make informed technological choices. Fundamental concepts of information technology, managing and organizing computers and file structures, detailed instruction in use of word processor and presentation programs. Beyond the theoretical topics in written and visual communication, laboratory sessions employing widely accepted software programs. *Credit units: 3 ECTS Credit Units: 6. Aut (A. S. İkinci) Spr (A. S. İkinci)*

BIM 122 Business Computer Applications II
Advanced and in-depth coverage of spreadsheets. Starting from the very basics - spreadsheet anatomy, data types, data entry, editing and formatting -and progressing to advanced use of a spreadsheet, through case studies that employ a range of mathematical, statistical, financial, logical and lookup functions. Use of macros plus graphical data representations. Data sorting and filtering techniques Creating a spreadsheet model that may be safely and easily used by others. *Credit units: 3 ECTS Credit Units: 6. Aut (F. G. Esen) Spr (N. Sağlam)*

BIM 191 Business Computer Applications
Review of the hardware and software components of the computer, ZIP Files, data organization and storage methods. In-depth study of word processing, spreadsheet and presentation packages. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Altaban, A. S. İkinci) Spr (A. S. İkinci)*

BIM 201 Problem Solving and Programming
Analysis and approach to problem solving with a programming point of view. Syntax and semantics of programming languages, programming style, program debugging and testing, data representation, simple arithmetic expressions, decision and control statements, arrays, structured and modular programming techniques covered using C language. *Credit units: 4 ECTS Credit Units: 7. Aut (N. Fenmen) Spr (R. Üşenmez)*

BIM 205 Principles of Accounting
Introduction to the business environment, basic mechanics of record keeping and reporting of financial statement information. The generally accepted accounting principles, the accounting cycle, assets, liabilities, shareholders? equity, preparation and reporting of financial statements; income statement, balance sheet and statement of shareholders? equity. A widely used accounting software and a spreadsheet application for recording transactions and preparation of financial statements. *Credit units: 3 ECTS Credit Units: 5. Aut (Staff) Spr (Staff)*

BIM 206 Managerial Accounting
Principles, techniques, and uses of accounting in the planning and control of business organizations from a management perspective. Evaluation of business and financial data for decision making at different levels of management, in service, merchandising and manufacturing businesses. Responsibility accounting, reporting centers, cost volume profit analysis, cost behavior, costing systems, pricing methods, budgetary process and operations budget, preparation and analysis of the statement of cash flows. Spreadsheets and fundamental business mathematics among the methods used during the course. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BIM 205. Aut (A. B. Evans) Spr (A. B. Evans)*

BIM 215 Database Management Systems
Explanation of the techniques and methodologies of Database Management Systems, in particular with the Entity Relationship approach to data modeling and the relational model of DBMS. File systems and the relational database in the concepts part. Entity relationship (E-R) modeling, normalization of database tables and Structured Query Language (SQL) in the design phase. Labwork projects during which students analyze, design, create and manipulate databases. Contributions of DBMS to an organization's operations, control and planning activities. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: BIM 201. Aut (F. G. Esen) Spr (F. G. Esen)*

BIM 223 Business Communications
How group behavior affects organizational effectiveness, decision making, conflict resolution, and strategies for efficient group and task management. Application of what students have learned to real-life situations by focusing on basic group communication concepts, effective group interaction skills, group communication strategies and skills that facilitate the achievement of group goals, essential group discussion strategies and skills, principles and practices of ethical communication in a variety of group contexts. *Credit units: 3 ECTS Credit Units: 6. Aut (E. İnanç) Spr (E. İnanç)*

BIM 224 Managerial Communications
All aspects of human behavior at work, how leaders use power and influence to achieve organizational commitment and effectiveness. Introduction to organizational structure, coping with 21st century challenges, the human factor, interpersonal communication, organizational communication, power, politics and status, being part of groups and teams, influencing others, employment practices and career success. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BIM 223. Aut (E. S. Özdilek) Spr (E. S. Özdilek)*

BIM 242 Web Site Design
Web Site Development basics which include: Internet and Web Terminology, creating web pages with XHTML and contrasting with HTML-5, configuring text, color, and page layout with CSS, web development process using media and interactivity on Web pages and embedding JavaScript. Analysis, design and publishing of web sites using popular web authoring tools and image editing tools. Working in teams to prepare a Web site as a project, which will be demonstrated to other project groups and a jury at the end of the semester. *Credit units: 3 ECTS Credit Units: 6. Aut (R. Üşenmez) Spr (R. Üşenmez)*

BIM 260 Financial Statement Analysis
Content of financial statements, Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS), accrual accounting, cash flow, earnings quality, ratio analysis, capital structure. Trend analyses and common size statements. Managing operating, investing and financing activities. *Credit units: 3 ECTS Credit Units: 6. Aut (A. B. Evans)*

BIM 261 Corporate Finance
Raising, allocating and managing capital resources to maximize company free cash flows, stock value and thus shareholder wealth. Interest, capital market dynamics, time value of money (TVM), capital budgeting, working capital management, short versus long term funding, dividend policy, plus financial forecasting and planning. *Credit units: 3 ECTS Credit Units: 6. Aut (A. B. Evans) Spr (A. B. Evans)*

BIM 282 Hospitality Industry Computerization
Introduction to introduce students to the principles of MIS (Management Information Systems). Exploration of the role of Information in operational and management decision making in the hotel industry. Using a simulated hotel and a live property management system. Experiencing the day-to-day activities performed at each stage of the "guest-cycle", from reservations, room assignment and check-in to check-out, payment and departure. Designed to meet both the front-office and back-office requirements of any size hotel or hotel chain. Hands-on experience in the many facets of hotel management. *Credit units: 3 ECTS Credit Units: 5. Aut (N. Sağlam) Spr (N. Sağlam)*

BIM 306 Decision Analysis
Application of analytical methods to help make better decisions. Quantitative techniques applied to managerial decision making: Decision Analysis, Forecasting, Queuing Theory, Project Management, Linear Programming and Applications. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BIM 106 or BIM 108. Aut (S. Kadayıfçılar) Spr (A. Durukal)*

BIM 310 Semester Internship
One semester work in industry. Opportunity to apply present knowledge in a real-life environment, and to observe, document and evaluate the operations of a department. Requirement to present an analysis of experience, identifying the factors contributing to the success and/or problems of the department. Contributions to the department during internship evaluated by the organization. *Credit units: 6 ECTS Credit Units: 22, Prerequisite: BIM 390. Aut (G. Demirel, E. S. Özdilek) Spr (G. Demirel)*

BIM 316 Information Systems Analysis
Information Technology Infrastructure Library (ITIL) in terms of IT service lifecycle. IT Service strategy forming, project justification, cost/benefit analysis, service development, transition and operation. Use cases, entity-relationship models and decision making patterns as concepts and as in class studies. Knowledge on how to determine and transform business needs into IT services and deciding which business needs are justified. *Credit units: 3 ECTS Credit Units: 7, Prerequisite: BIM 215. Aut (O. Aytar) Spr (O. Aytar)*

BIM 341 Web Based Application Development
Development of an interactive and comprehensive web-based application using the PHP scripting language.Coding of a database-driven website where visitors can register, log into the system, review products or services using selected categories, place on-line orders or requests using shopping carts, and follow-up orders in the capacity of either a customer or a system administrator. Term projects in teams to fully apply what learned in the course. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: BIM 201 and BIM 215 and BIM 242. Aut (A. S. İkinci) Spr (A. S. İkinci)*

BIM 375 Public Relations Management
Basic concepts of effective public relations (PR) and preparation for the ethical practice of public relations in today's fast-changing, competitive world. Evolution and history of PR, the PR process, communication concepts in PR, evaluation and measurement of PR programs, public opinion, conflict management and crisis communication, internet and social media role in PR, print media, electronic media, PR in government, and PR in non-profit organizations. Scientific research and a project with a selected firm from industry to apply learning in an actual business situation. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BIM 224. Aut (E. S. Özdilek) Spr (E. S. Özdilek)*

BIM 381 Food and Beverage Computer Applications
The aim of this course is to introduce students to the computerization of in the hospitality industry. Through a widely-used computer application package, students will gain the ability to create the necessary database system for food and beveragemanagement. They will learn the relationship between the food and beverage department and suppliers; how to make issues between the hotel stores, restaurants and suppliers, how to create sales items order procedures and purchasing, cost management of the sales outlets. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: THM 245. Aut (E. Şenol) Spr (E. Şenol)*

BIM 390 Summer Internship
Exposure to the workplace, in a supervised setting. Summer Training assignments scheduled and monitored through the school's Industrial Training Office. Obtaining practical real-life experience of the working environment. A minimum of thirty (30) working days, undertaken during the summer break following completion of the second academic year. *Credit units: None ECTS Credit Units: 9.*

BIM 405 Organizational Behaviour
The foundation for the study and application of organizational behavior by focusing on the perspective, historical background, methodology and theoretical framework for human behavior, together with the dominant perspectives in the field, various types of behavior modification theories and techniques, analysis of different concepts related with decision-making, change management, managing stress, conflict and communication, perception, personality and attitudes, motivation, and learning, group dynamics, conflict, stress, power and politics, and leadership, and organizational culture. *Credit units: 3 ECTS Credit Units: 6. Spr (E. S. Özdilek)*

BIM 406 International Business
Insight to the drivers of globalization and the challenges and opportunities faced by multinational enterprises. The process from both the environment perspective and adapting marketing mix to international markets. Different approaches to globalization, such as exporting or setting up production and marketing facilities in foreign countries. Visionary leadership, organizational culture and structure, functions and processes, human resources management and finance. Application and interpretation of business rules in an international environment, coping with changing social and technological environments and positioning goods and services in them. *Credit units: 3 ECTS Credit Units: 6. Spr (D. Lüle)*

BIM 416 Negotiation Skills
Negotiation is a life skill. Every day we negotiate with colleagues, suppliers or customers. Negotiation skills can have a serious impact on profits, project deadlines, your reputation with your colleagues and your ability to implement change successfully. This course will help students to: Recognise the strengths and weaknesses of their negotiation style; Plan and prepare effectively for a negotiation; Cope with difficult negotiations; Know how to trade concessions conditionally, and; Adapt their style in differing situations. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Bilecen)*

BIM 417 Senior Seminars in Business Information Management
A seminar course designed to help plan and launch a career in labor, employment relations, human resources, IT Management and alike by hosting professionals and experts from business world. Introduction to several useful career development resources, development of a personal profile of the students? career-related strengths

and interests, exploration of career options, creation of a career development plan, and guidance for securing prospective internships and other relevant experiences. *Credit units: 3 ECTS Credit Units: 5. Aut (R. Üşenmez) Spr (R. Üşenmez)*

BIM 418 Management Information Systems
Using and managing information technologies to design business processes, improving business decision making and to achieving operational excellence. Internet technologies that provide a platform for business collaboration processes among all stakeholders in today's networked enterprises and global markets. Five major areas of information: Foundation Concepts; Information Technologies; Business Applications; Development Processes and Management Challenges. Given with a managerial perspective and heavy emphasis on business scenario analyses. Leading information technology professionals hosted as guest speakers. *Credit units: 3 ECTS Credit Units: 5. Aut (R. Üşenmez) Spr (A. Altaban)*

BIM 419 Strategic Brand Management
Brand management strategy as a platform that drives all other marketing functions within an organization, including product development, distribution, pricing strategies and marketing communications strategies by reviewing the history of brands and branding, their importance, and the role of brand equity in a firm. Demonstration in the real world of how to analyze brand management strategies, manage brand equity, create a brand identity and positioning; establish a competitive advantage; and capitalize on consumer insight by referring to product pricing, distribution strategy and measuring brand equity. *Credit units: 3 ECTS Credit Units: 6. Aut (E. S. Özdilek) Spr (E. S. Özdilek)*

BIM 423 Advertising Management
Introduction to the theory and practice of advertising. Important insights into how advertising is conducted. The origins of advertising and where it fits in today's market. Social issues, ethics, regulation, and responsibility. Print, broadcast, and interactive online media. Discussion and direct application of the creative process. The knowledge needed to manage a basic advertising campaign from the client side. *Credit units: 3 ECTS Credit Units: 6. Aut (Ç. Başarır)*

BIM 425 Contemporary Practices in Human Resources Management
Strategic implications of "people" issues within organizations. Contemporary Human Resources Management (HRM) practices to assist the organization in meeting its business objectives, through the effective performance and job satisfaction of its employees. Developing and delivering HR programs, to ensure that HRM adds value to the organization. Basic knowledge and practice in job analysis, personnel planning, recruitment, selection, hiring, orientation, performance management, motivation, compensation, training, leadership, change management and business ethics. Analyzing case studies, identifying problems and their causes, and proposing solutions. *Credit units: 3 ECTS Credit Units: 6. Spr (A. C. Ağın)*

BIM 426 Small Group and Team Communication
A practical course to transfer theoretical knowledge to real-life situations by focusing on identifying and applying basic group communication concepts, demonstrating effective group interaction skills, identifying and applying group communication strategies and skills that facilitate the achievement of group goals, identifying and demonstrating essential group discussion strategies and skills, and applying the principles and practices of ethical communication in a variety of group contexts. *Credit units: 3 ECTS Credit Units: 6. Aut (E. İnanç) Spr (E. İnanç)*

BIM 441 UFO: Undefined Fields in creating Opinion
Rational or irrational decisions in business and non-business life. Irrational decisions and even unethical ones often made by human beings. Why human beings act in such a way and what may be done to understand this behavior. Integrating psychology and business decision making plus the iterative use of the question "why" as an analytical tool and problem resolution technique. *Credit units: 3 ECTS Credit Units: 6. Spr (S. Bilecen)*

BIM 450 Multimedia Techniques
Multimedia tools and techniques that help develop story-telling ability. Production of a short film, employment of various digital media, such as graphics, video, animation, sound, etc. Script writing, screenplay and movie making techniques. Special multimedia editing software to understand the basics of animation and interactivity. *Credit units: 3 ECTS Credit Units: 6. Spr (Ç. Başarır)*

BIM 490 Project Management
Introduction to the project management discipline and the project management life cycle. A comprehensive view of the project management processes: initiating, planning, executing, monitoring and controlling, and closing and PMI's (Project Management Institute) project management methodology including nine knowledge areas: Scope Management, Integration Management, Time Management, Cost Management, Quality Management, Risk Management, Procurement Management, Human Resource Management and Communication Management. *Credit units: 3 ECTS Credit Units: 6.*

BIM 492 Strategic Management
Capstone course integrating knowledge from other BIM courses: Marketing, Finance, Decision Analysis, and Human Resource Management. Strengths, Weaknesses, Opportunities, Threats (SWOT) and Political, Economic, Social, Technological (PEST) analyses. Porters Generic Strategies. Blue Ocean Strategy. Application of these using a dynamic Business Simulator. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: BIM 310. Aut (A. B. Evans) Spr (A. B. Evans)*

BIM 497 Business Transformation with ERP Systems
Principles of ERP systems and usage of ERP systems to perform fundamental business processes. Basic ERP terminology and navigating through an ERP system. Interaction of major business processes with ERP in the functional areas such as Sales and Distribution, Production Planning, Financial Accounting, and Human Capital Management. *Credit units: 3 ECTS Credit Units: 6.*

COMPUTER TECHNOLOGY AND INFORMATION SYSTEMS

E. Uçar (Chair), M. Akgül, B. Akporay, D. Albayrak, S. A. Ali, S. Genç, B. Liman, O. Say, N. C. Serim, C. Sevgi, N. Şahin Özçelik, S. Tın, S. Topçu, H. M. Yıldırım, F. Yürüten.

Vocational Specialists: Y. E. Aykaç, L. Sezer, E. Yılmaz, H. Z. Yılmaz.

Department of Computer Technology and Information Systems offers a four-year B.S. degree in information technology (IT) and information systems (IS) with a curriculum concentrated in software development and designed to meet the popular and expanding IT industry requirements. A semester-long industrial training opportunity - in their 3rd year -enables our students to practically apply their background on topics like database, data communications and networking, Internet and web applications, software engineering, programming and even get solid job offers from contemporary software companies.

There are various technical elective courses - most being supported by our academic alliances formed with global IT leaders - enabling senior students to specialize in parallel to their interests.

Technical courses are complemented by a range of business studies. These include both management and social/communication courses. Our aim is to graduate students who are technically both competent and confident, who are innovative, adaptable, and who have sound teamwork and interpersonal communication skills.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
CTIS 151	Introduction to Programming	5 / 8
CTIS 163	Discrete Mathematics	4 / 7
CTIS 165	Fundamentals of Information Systems	3 / 6
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
TURK 101	Turkish I	2 / 2

Spring Semester		Credits / ECTS Credits
CTIS 152	Algorithms and Data Structures	5 / 8
CTIS 164	Technical Mathematics with Programming	4 / 7
CTIS 166	Information Technologies	3 / 6
ENG 102	English and Composition II	3 / 6
THM 105	Introduction to Business	3 / 5
TURK 102	Turkish II	2 / 2

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
CTIS 251	Object Oriented Programming I	5 / 8
CTIS 255	Web Technologies I	3 / 6
CTIS 259	Database Management Systems and Applications	5 / 8
CTIS 261	Computer Networks I	4 / 7
ECON 103	Principles of Economics	3 / 6
GE 250	Collegiate Activities Program I	- / 1

Spring Semester		Credits / ECTS Credits
CTIS 252	Object Oriented Programming II	5 / 8
CTIS 256	Web Technologies II	3 / 6
CTIS 262	Computer Networks II	4 / 7
CTIS 264	Computer Algorithms	3 / 6
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
	Non Technical Elective	3 / 5

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
CTIS 290	Summer Internship	- / 6
CTIS 359	Principles of Software Engineering	3 / 6
CTIS 363	Ethical and Social Issues in Information Systems	3 / 6
CTIS 487	Mobile Application Development	4 / 7
ELS 301	Advanced Communication Skills	3 / 4
	Management Elective	3 / 5
Spring Semester		Credits / ECTS Credits
CTIS 310	Semester Internship	6 / 22

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
CTIS 411	Senior Project I	2 / 3
CTIS 415	Advanced Software Engineering	2 / 3
CTIS 496	Computer and Network Security	3 / 6
	Restricted Electives (2)	6 / 12
	Unrestricted Elective	3 / 5
Spring Semester		Credits / ECTS Credits
CTIS 456	Senior Project II	4 / 7
CTIS 458	Seminars in Information Systems	2 / 3
	Restricted Electives (2)	6 / 12
	Unrestricted Elective	3 / 5

MANAGEMENT ELECTIVES

BIM 223	Business Communications	3 / 6
BIM 224	Managerial Communications	3 / 6
BIM 260	Financial Statement Analysis	3 / 6
BIM 261	Corporate Finance	3 / 6
BIM 306	Decision Analysis	3 / 6
BIM 375	Public Relations Management	3 / 6
BIM 416	Negotiation Skills	3 / 6
BIM 419	Strategic Brand Management	3 / 6
BIM 425	Contemporary Practices in Human Resources Management	3 / 6
BIM 426	Small Group and Team Communication	3 / 6
BIM 441	UFO: Undefined Fields in creating Opinion	3 / 6
BIM 492	Strategic Management	3 / 6
MAN 216	Elements of Finance	3 / 6
MAN 333	Marketing Principles	3 / 6
THM 202	Principles of Management	3 / 5
THM 301	Human Resources Management	3 / 5
THM 309	Principles of Marketing	3 / 5
THM 327	Event Management	3 / 5
THM 391	Business Forecasting	3 / 5
THM 403	Organizational Behavior	3 / 5
THM 415	Finance	3 / 6
THM 477	Planning for Profit	3 / 5

RESTRICTED ELECTIVES

CTIS 480	iOS Application Development	4 / 6
CTIS 483	Database Administration	4 / 7
CTIS 484	Advanced Topics in Programming	4 / 7
CTIS 485	Information Storage and Management	4 / 6
CTIS 486	Linux System Administration	3 / 6
CTIS 488	Data Analysis	3 / 6

CTIS 489	Interactive Computer Graphics Programming	3 / 6
CTIS 491	Software Validation Verification and Testing	3 / 6
CTIS 492	Information Systems Outsourcing	3 / 6
CTIS 493	Information Systems Project Management	3 / 6
CTIS 497	Scaling Networks	4 / 6
CTIS 498	Wide Area Networks	4 / 6

COURSE DESCRIPTIONS

CTIS 151 Introduction to Programming
An introduction to programming from both design and programming standpoints. Syntax and semantics of programming languages, programming style, program debugging and testing, data representation, simple arithmetic expressions, decision and control statements, using arrays, introduction to standard libraries, structured and modular programming techniques will be covered using C language. *Credit units: 5 ECTS Credit Units: 8. Aut (B. Liman, S. Tın) Spr (B. Liman)*

CTIS 152 Algorithms and Data Structures
Implementation of abstract data types and structures. Dynamic data structures. Strings, stacks, queues, linked lists, doubly linked lists. Multidimensional structures. Recursion. Implementation of basic searching and sorting methods. File I/O. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: CTIS 151. Aut (B. Liman) Spr (S. Tın)*

CTIS 163 Discrete Mathematics
An introductory course in discrete mathematics. The course covers logic and proof, elements of logic, mathematical induction and operations relations and functions and counting methods. Boolean algebra, abstract data types, graph theory, theory of trees, combinational circuits, automata theory, grammars and languages. *Credit units: 4 ECTS Credit Units: 7. Aut (D. Albayrak, S. Topçu) Spr (S. Topçu)*

CTIS 164 Technical Mathematics with Programming
The fundamental concepts in technical mathematics and calculus using programming. Functions and graphs, linear equations, quadratic equations, trigonometry, inequalities, exponential and logarithms, matrices and determinants, plane analytic geometry, differentiation and integration. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 151. Aut (O. Say) Spr (S. Genç, O. Say)*

CTIS 165 Fundamentals of Information Systems
The fundamental concepts of information systems with historical and evolutionary perspectives. Systems, organizational and strategic role and added value of information systems, decision support systems, data mining, Management information systems (MIS), information systems planning, data management, computer networking, internet, analysis, design, development, and maintenance of information systems, competitive edge of information systems. *Credit units: 3 ECTS Credit Units: 6. Aut (E. Uçar) Spr (E. Uçar)*

CTIS 166 Information Technologies
The basic operating system concepts by using Linux operating system. Linux GUI, kernel, CUI, shells, basic shell programming, Linux file system architecture, file security, Linux tools for software developments, networking and internetworking concepts. *Credit units: 3 ECTS Credit Units: 6. Aut (N. C. Serim) Spr (N. C. Serim)*

CTIS 251 Object Oriented Programming I
Object oriented programming paradigm by focusing on the principal concepts such as objects, classes, encapsulation, modular design and hierarchy between classes, inheritance, polymorphism and abstract classes using Java language. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: CTIS 152. Aut (O. Say) Spr (B. Liman)*

CTIS 252 Object Oriented Programming II
Advanced subjects of object oriented programming in Java. JApplet, multi-Frame, JDialog, Java I/O, file operators, object serialization, Generics, Collections, Threaded and multi-threaded programming, Thread Synchronization, JDBC, overview of SQL Language, overview of JDBC and its drivers, JDBC API: connections, statements, result sets, using JDBC: updates, queries, basic networking, overview of networking, networking concepts, identifying the computer's IP address, using the Inet Address Class, Sockets, implementing the Client Side of a Socket, implementing the Server Side of a Socket, Developing a multi-threaded Server, Datagram Socket, Servlet, Java Server Pages, personalizing the Site, displaying Dynamic Contents, Remote Method Invocation (RMI), Java Beans, J2EE, Model View Controller (MVC). *Credit units: 5 ECTS Credit Units: 8, Prerequisite: CTIS 251. Aut (N. Şahin Özçelik) Spr (N. Şahin Özçelik)*

CTIS 255 Web Technologies I
The necessary background information and the technologies to develop and maintain a professional web site. The design and implementation of interactive web pages by using web technologies like HTML, DHTML, CSS, JavaScript and Flash. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 151. Aut (S. Genç)*

CTIS 256 Web Technologies II
Developing information systems using web as the main interface between users and the system. Design techniques and concepts using PHP, my SQL, ASP, JSP e-commerce concepts and XML. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 255. Aut (S. Genç) Spr (S. Genç)*

CTIS 259 Database Management Systems and Applications
Fundamentals of SQL, Views, Constraints, Triggers, Transaction Processing, Entity-Relationship (E-R) Data Model, Relational Data Model, Relational Schema, Functional Dependency and Normalization, Logical Database Design, Relational Algebra, Concurrency Control by using Oracle Database Management System. *Credit units: 5 ECTS Credit Units: 8, Prerequisite: CTIS 152. Aut (F. Yürüten) Spr (F. Yürüten)*

CTIS 261 Computer Networks I
CCNA Exploration-1: Introduction to computer networks. LANs, WANs and Internetworks. Protocols and Layered models. The Open System Interconnection (OSI) model. TCP/IP model. Application Layer Protocols and services: DNS, www, e-mail, FTP, DHCP, P2P, Telnet. OSI Transport Layer: TCP and UDP protocols. OSI Network Layer: IPv4 protocol and addressing: Special addresses, subnetting. Routing. Data-Link Layer: Media access control techniques. MAC addressing and framing. Ethernet protocol concepts and types. OSI Physical Layer: Signalling and encoding. Physical media. Planning and cabling networks. Basic network configuration and testing. *Credit units: 4 ECTS Credit Units: 7. Aut (C. Sevgi, H. M. Yıldırım) Spr (S. A. Ali, H. M. Yıldırım)*

CTIS 262 Computer Networks II
CCNA Exploration-2: Introduction to Routing and Packet forwarding: The router components and configuration using the Cisco IOS. Building the routing table. Path determination and switching functions of a router. Static routing. Introduction and classification of Dynamic Routing Protocols: Metrics and administrative distances. Distance Vector Routing Protocols: RIPv1 and RIPv2. Variable Length Subnet Masking and CIDR. EIGRP operation and configuration. Link-State Routing Protocols: OSPFv2 operation and configuration. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 261. Aut (S. A. Ali) Spr (C. Sevgi)*

CTIS 264 Computer Algorithms
The analysis of algorithms and problem solving techniques. Major concepts including; sorting, searching, divide and conquer algorithms, dynamic programming, greedy algorithms, graph algorithms, cryptographic algorithms and string matching algorithms. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 152 and CTIS 163. Aut (D. Albayrak) Spr (H. M. Yıldırım)*

CTIS 290 Summer Internship
First exposure to the workplace, in a supervised setting. Assignments scheduled and monitored through CTIS Internship Coordinator. Observation of an organization via provided IS/IT solutions and obtaining practical real-life experience. A minimum of twenty (20) working days, undertaken during the summer months following the completion of the second academic year. An internship report to be submitted upon completion of the program. *Credit units: None ECTS Credit Units: 6. Aut (F. Yürüten)*

CTIS 310 Semester Internship
One semester work in industry the student with an opportunity to apply present knowledge in a real-life environment and to observe, document and evaluate the operations of a computing department. Presentation of an analysis of experience, identifying the factors contributing to the success and/or problems of the department. *Credit units: 6 ECTS Credit Units: 22, Prerequisite: CTIS 290. Aut (B. Akporay, D. Albayrak, B. Liman, O. Say, N. C. Serim, N. Şahin Özçelik, S. Tın, E. Uçar, H. M. Yıldırım, F. Yürüten) Spr (S. A. Ali, B. Liman, O. Say, N. C. Serim, C. Sevgi, N. Şahin Özçelik, S. Tın, E. Uçar, F. Yürüten)*

CTIS 359 Principles of Software Engineering
Software processes; requirements analysis and specification, design, development and testing methodologies, and software lifecycle. Importance of planning and managing the software processes. Software modeling, review of Unified Modeling Language and CASE technology. Software development, planning, management and engineering standards such as ISO/IEC 12207 and EIA/IEEE J-STD-016-1995. An in-depth introduction to the concepts and techniques for software development. Experience team-oriented software engineering through conventional software life cycle models via small-scale software project. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 251. Aut (C. Sevgi) Spr (C. Sevgi)*

CTIS 363 Ethical and Social Issues in Information Systems
Basic understanding of IT history, awareness of current issues, and familiarity with ethics. An overview of ethical theories and related problems with privacy, networking, security and reliability. Issues related to social networking, government surveillance, privacy, security, and intellectual property to allow students to become responsible and ethical professionals. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 165. Aut (R. Ayfer) Spr (R. Ayfer)*

CTIS 411 Senior Project I
A capstone course and the first part of a yearlong senior team project. Teamwork on assigned projects to complete the initial phases of the software development lifecycle which are initial project plan, requirements

specification, and software design. Development of a product prototype and its presentation before continuing to second part of this course which is "CTIS456 Senior Project II". *Credit units: 2 ECTS Credit Units: 3, Prerequisite: CTIS 310 and CTIS 359. Aut (B. Akporay) Spr (B. Akporay)*

CTIS 415 Advanced Software Engineering
In-depth coverage of concepts taught in "CTIS359 Principles of Software Engineering". Introduction to contemporary and advanced software engineering systems and techniques. Development of software systems by using several examples. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: CTIS 310 and CTIS 359. Aut (B. Akporay) Spr (B. Akporay)*

CTIS 456 Senior Project II
A capstone course and the second part of a yearlong senior team project. Llater phases of the software development lifecycle which are project implementation and testing. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 411. Spr (D. Albayrak, S. A. Ali, S. Genç, B. Liman, O. Say, N. C. Serim, C. Sevgi, N. Şahin Özçelik, H. M. Yıldırım, F. Yürüten)*

CTIS 458 Seminars in Information Systems
During this final semester course, managerial level guest speakers from the IT industry, provide weekly seminars. Each team of 3-4 students gets prepared for the topics for two weeks before the seminar date. At the end of each seminar, Q-A sessions and panel discussions are held. Main aim of the course is to enable senior level students to get familiar with latest technologies and hot topics as well as to get acquainted with the corporates and organizations in the IT and Software Industry. *Credit units: 2 ECTS Credit Units: 3, Prerequisite: CTIS 310. Spr (E. Uçar)*

CTIS 480 iOS Application Development
A programming course for iOS enabled devices. Overview of iOS, App store, creating developer account, using Xcode, understanding iOS frameworks, understanding model-view-controller, learning Objective-C, learning Swift, using Storyboard, using Playground, using different view controllers, view controller lifecycle, understanding views outlets and actions, writing basic applications and testing them, alerts, timers, gestures, graphics and multimedia programming, persistence, documents and core data, file handling, database storage, accessing built-in applications, push notifications, web services, displaying maps, sensor programming, iCloud programming, Bonjour programming, Bluetooth programming. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CTIS 310 and CTIS 487. Aut (S. A. Ali)*

CTIS 483 Database Administration
Installing Oracle Software, Oracle Grid Infrastructure installation for a standalone server, Creating Database Using DBCA, Oracle Database Server Architecture, Managing Database Instance, Database Configurations, Memory Structures, Process Structures, Managing ASM Instance, Network Environment, Database Storage Architecture, Transactions, Administering User Security, Concurrency Control Mechanisms, Crash Recovery Components, Managing Undo-Redo Data, Database Auditing and Database Maintenance, Performance Management, Backup and Recovery Concepts, Moving Data, Database Restart. Whole content will be explained in Oracle environment and students will have rights to take Oracle Database 11g: Administration I 1Z0-052 exam as part of the Oracle Academy membership, and be able to take Oracle Database 11g Administrator Certified Associate (OCA). *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 259 and CTIS 310. Aut (F. Yürüten) Spr (F. Yürüten)*

CTIS 484 Advanced Topics in Programming
Object oriented programming concepts using C++ programming language. Developing applications for processors with parallel computing resources. Fundamental concepts and in-depth knowledge about parallel, distributed, grid and cloud computing programming principles, programming GPUs (CUDA), communication models, memory utilization and limitations of these processors. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 251 and CTIS 310. Spr (O. Say)*

CTIS 485 Information Storage and Management
Introduction to information storage systems, data protection using RAID, intelligent storage systems, storage networking and virtualization technologies, business continuity, local and remote replication techniques, cloud computing, storage security, monitoring and reporting. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CTIS 310. Spr (S. A. Ali)*

CTIS 486 Linux System Administration
Practical issues in Linux system administration. Installation, software management, and user management issues. Linux shell utilities, file system management, core system daemon, kernel and compilation concepts. Networking: TCP/IP and network configuration, local and network security with applications of Internet protocols like HTTP, SMTP, and DNS. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 166 and CTIS 310.*

CTIS 487 Mobile Application Development
Technical and business related challenges posed by current mobile devices and wireless communications. Comparison and selection of software tools and APIs to develop mobile applications while considering their

popularity, scope and limitations. Development and testing of realistic applications for mobile devices. *Credit units: 4 ECTS Credit Units: 7, Prerequisite: CTIS 251. Aut (N. Şahin Özçelik) Spr (N. Şahin Özçelik)*

CTIS 488 Data Analysis
The concepts and applications in statistics. Frequency distribution, central tendency, probability of samples, variability, hypothesis testing, ANOVA, correlation and regression analysis. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 310.*

CTIS 489 Interactive Computer Graphics Programming
2D and 3D programming concepts to create interactive graphics applications such as simulators, computer games, real-time visualization applications using OpenGL API. Video hardware architecture, 2D/3D mathematics, GLUT library, 2D primitive drawing, 2D transformations, 2D animation, 3D object modeling and drawing, 3D transformations, perspective projection, orthogonal projection, hidden surface removal, I/O handling, texture mapping, lighting, alpha blending, special effects such as fogging and particles. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 310. Aut (S. Genç)*

CTIS 491 Software Validation Verification and Testing
Software inspections and reviews, requirements tracing, and system and component testing. Test planning, test case design, defect reporting and tracking, and control of testing process on sample software projects. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 310. Aut (S. Tın)*

CTIS 492 Information Systems Outsourcing
Fundamental concepts of information systems. Management information in organizations, decision support systems, enterprise resource planning, information systems is planning, organizing for information system projects, IS project lifecycle models, IS development and maintenance principles, organization, management and control IS, information technology (IT) and IT-enabled services outsourcing, voluntary and involuntary outsourcing for both consumers and producers of IT and IT-enabled service, variables that impact outsourcing and the impacts of outsourcing from business as well as social perspectives. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 310.*

CTIS 493 Information Systems Project Management
The project management discipline and the project management life cycle. The management of project teams and project communications, project selection, scheduling, and control tools and techniques such as Net Present Value (NPV), Return on Investment (ROI), Work Breakdown Structures (WBS), Critical Path Method (CPM), and Earned Value (EV) management Project risk, quality, and procurement management. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 310. Aut (B. Akporay) Spr (B. Akporay)*

CTIS 496 Computer and Network Security
Theory and practice of computer security, focuing in particular on the security aspects of computing systems. Survey of classical cryptography and cryptographic tools used to provide secuirty, such as shared key encryption, cryptographic hash functions, public key encryption, key exchange, and digital signature. Review of how these tools are utilized in Public Key Infrastructure (PKI), Transport-Level Security, Wireless Network Security, Electronic Mail Security. Introduction to "Network Access Control", "System Secuirty", and "Secure Programming". *Credit units: 3 ECTS Credit Units: 6, Prerequisite: CTIS 290. Aut (H. M. Yıldırım) Spr (H. M. Yıldırım)*

CTIS 497 Scaling Networks
CCNA Routing and Switching -3: Introduction to scaling networks, LAN redundancy, link aggregation, wireless LANs, operation and configuring OSPF for IPv4 and IPv6, operation and configuring EIGRP for IPv4 and IPv6, troubleshooting networks. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CTIS 262 and CTIS 310. Aut (S. A. Ali)*

CTIS 498 Wide Area Networks
CCNA Exploration-4 : Introduction to Wide Area Networks: Circuit-switching vs Packet-switching. HDLC, PPP, Frame Relay protocol concepts and configuration. Introduction to Network Security. Using Access Control Lists to secure networks. Standard and extended ACL configuration. Teleworker Services: Broadband services: Cable, DSL and Wireless. Virtual Private Networks (VPNs). IP Addressing Services : DHCP, NAT, IPv6. Network troubleshooting. *Credit units: 4 ECTS Credit Units: 6, Prerequisite: CTIS 262 and CTIS 310.*

TOURISM AND HOTEL MANAGEMENT

A. Pekcan (Acting Chair), O. Benice, J. B. Chafra, A. B. Collins, E. Denizci, E. Gürel, G. Karamullaoğlu, A. N. Örer, N. Özkaramete Coşkun, K. Rodoplu, M. Siyahhan, E. Şenol, A. Ünal, H. Üstündağ.

Part-time: B. Ak, Ç. G. Göğüş, E. Öncü.

Tourism is the fastest growing sector not only in our country, but also in the world. Since the world became a global market, the multi-national corporations are entering into this leading sector to a large extent. Thus students who select Tourism and Hotel Management as their area of specialization will have a chance to follow a curriculum that prepares them for a career both domestically and world-wide.

The practical and theoretical courses have a wide spectrum extending from department specific travel, hotel and food and beverage operations courses to managerial skill development, accounting, finance courses supported with English as teaching medium, second foreign languages, internships and project courses.

CURRICULUM

FIRST YEAR

Autumn Semester		Credits / ECTS Credits
BIM 100	Introductory Mathematics	2 / 4
BIM 191	Business Computer Applications	3 / 5
ENG 101	English and Composition I	3 / 6
GE 100	Orientation	1 / 1
THM 105	Introduction to Business	3 / 5
THM 163	Dynamics of Tourism	3 / 5
TURK 101	Turkish I	2 / 2
	Second Foreign Language-(I)	3 / 6

Spring Semester		Credits / ECTS Credits
BIM 107	Calculus for Business Studies	3 / 5
BIM 205	Principles of Accounting	3 / 5
ECON 105	Principles of Economics I	3 / 5
ENG 102	English and Composition II	3 / 6
THM 166	Health Studies	1 / 1
TURK 102	Turkish II	2 / 2
	Second Foreign Language-(II)	3 / 6

SECOND YEAR

Autumn Semester		Credits / ECTS Credits
BIM 282	Hospitality Industry Computerization	3 / 5
ECON 106	Principles of Economics II	3 / 5
GE 250	Collegiate Activities Program I	- / 1
THM 168	Nutrition and Sanitation	3 / 5
THM 202	Principles of Management	3 / 5
THM 243	Rooms Division Management	3 / 5
THM 245	Purchasing and Cost Analysis	3 / 5

Spring Semester		Credits / ECTS Credits
BIM 108	Business Statistics	3 / 5
BIM 381	Food and Beverage Computer Applications	3 / 5
GE 251	Collegiate Activities Program II	1 / 1
HIST 200	History of Turkey	4 / 8
THM 244	Food Production Techniques	3 / 3
THM 246	Restaurant Service	4 / 4
THM 247	Food and Beverage Management	3 / 5

THIRD YEAR

Autumn Semester		Credits / ECTS Credits
THM 300	Summer Internship	- / 15
THM 301	Human Resources Management	3 / 5
THM 309	Principles of Marketing	3 / 5
THM 313	Hospitality Management Accounting	3 / 5
THM 323	International Cuisines	4 / 4
	Art and Humanities Elective	3 / 5
	Restricted Elective	3 / 5

Spring Semester		Credits / ECTS Credits
THM 310	Semester Internship	6 / 22

FOURTH YEAR

Autumn Semester		Credits / ECTS Credits
THM 326	Tourism Policies and Sustainability	3 / 5
THM 348	Service Operations Management	3 / 5
THM 403	Organizational Behavior	3 / 5
THM 409	Tourism Law	3 / 5
THM 415	Finance	3 / 6
	Restricted Elective	3 / 5
	Unrestricted Elective	3 / 5

Spring Semester		Credits / ECTS Credits
THM 418	Senior Project	3 / 4
THM 419	Tourism Management Applications	3 / 5
THM 420	Seminars on Tourism Industry	2 / 2
THM 423	Tourism Economics	3 / 5
	Art and Humanities Elective	3 / 5
	Unrestricted Elective	3 / 5

SECOND FOREIGN LANGUAGE-(I)

FRE 111	Basic French I	3 / 6
FRL 111	Basic Hebrew I	3 / 6
FRL 131	Basic Arabic I	3 / 6
FRL 141	Basic Persian I	3 / 6
FRL 155	Basic Chinese I	3 / 6
FRL 175	Basic Kurdish I	3 / 6
GER 111	Basic German I	3 / 6
ITA 111	Basic Italian I	3 / 6
JAP 111	Basic Japanese I	3 / 6
RUS 111	Basic Russian I	3 / 6
SPA 111	Basic Spanish I	3 / 6

SECOND FOREIGN LANGUAGE-(II)

FRE 112	Basic French II	3 / 6
FRL 112	Basic Hebrew II	3 / 6
FRL 132	Basic Arabic II	3 / 6
FRL 142	Basic Persian II	3 / 6
FRL 156	Basic Chinese II	3 / 6
FRL 176	Basic Kurdish II	3 / 6
GER 112	Basic German II	3 / 6
ITA 112	Basic Italian II	3 / 6
JAP 112	Basic Japanese II	3 / 6
RUS 112	Basic Russian II	3 / 6
SPA 112	Basic Spanish II	3 / 6

RESTRICTED ELECTIVES

THM 252	Tourist Attractions of Turkey	3 / 5
THM 327	Event Management	3 / 5
THM 391	Business Forecasting	3 / 5
THM 392	Nutrition and General Health	3 / 5
THM 396	Case Studies for Tourism	3 / 5
THM 453	Total Quality Management	3 / 5
THM 475	Strategic Marketing for the Hospitality Industry	3 / 5
THM 476	Research Techniques	3 / 5
THM 477	Planning for Profit	3 / 5
THM 478	Hotel Investment Decision	3 / 5
THM 487	Concept and Design for Food and Beverage Outlets	3 / 5
THM 493	Nutritional Anthropology	3 / 5

ART AND HUMANITIES ELECTIVES

All 3 credits undergraduate courses starting with the following course codes are included: ADA, AMER, COMD, ELIT, FA, FRE, FRL, GER, GRA, HART, IAED, ITA, JAP, LAUD, PHIL, RUS, and SPA.

UNRESTRICTED ELECTIVE ELECTIVES

All 3 credits undergraduate courses starting with the following course codes are included: CTE, HCIV, IR, LAW, MAN, MSC, POLS, PSYC, TE, and THR.

MINOR PROGRAM

Food and Beverage Management Minor is intended to invite the ones who are interested in the Food and Beverage field. It will cover almost all the related information in the field starting with the fundamentals of nutrition and sanitation. The Minor will give the students both the theoretical and mostly practical knowledge in the Food and Beverage operations so that the students will accumulate food preparation and service knowledge that will be enlarged and enhanced by the cost analysis and management courses.

Health Tests: For THM 244, THM 246 and THM 323 courses each student has to have certain health tests at the start of the semester, and the results must be appropriate for food and beverage operations. Those with health discrepancies can not continue. Students attending the minor program need to pay for health test expenses.

Duration, Attendance and Timing: THM 246 and THM 323 Courses start at 08:30 in the morning and lasts 6 hours. THM 244 course is organized either in the morning time or afternoon and lasts 4 hours. For operational courses THM 244, THM 246 and THM 323 attendance and timely arrival of students are extremely important. Students need to follow the special rules set by the instructors. Those rules are given to students at the first lecture of the semester. The first week of these courses are for orientation, operation starts with the second week. Absenteeism allowances of these courses are also very low and followed strictly, to be announced by instructors. This is due to the fact that "Le Piment Rouge" accepts guests, like a commercial restaurant.

Uniforms: For THM 244, THM 246 and THM 323 courses: each student has to purchase special uniforms, on their own expenses. Those uniforms are ordered at the start of each semester, and with second week onwards students are required to attend with these uniforms on. This is due to hygiene requirements. Uniforms purchased for THM 244 course are used also for THM 323 course. THM 246 course requires another set of uniforms. Students are provided a changing room and lockers.

Kitchen Facilities: THM 244 and THM 323 courses are practiced in kitchens. Due to operational limitations, each section can accommodate maximum 26 students for THM 244 course and 12 students for THM 323 course. For THM 246 course the enrollment limit is 12 students.

Prerequisite Courses: None

CURRICULUM

Courses		Credits / ECTS Credits
THM 168	Nutrition and Sanitation	3 / 5
THM 244	Food Production Techniques	3 / 3
THM 245	Purchasing and Cost Analysis	3 / 5
THM 246	Restaurant Service	4 / 4
THM 247	Food and Beverage Management	3 / 5
THM 323	International Cuisines	4 / 4

COURSE DESCRIPTIONS

THM 105 Introduction to Business
An overall view to all the relevant functions of a business. Aspects of the entire business organization and functional area knowledge. The nature of businesses and the necessary orientation to the areas that will require functional specialization later on. *Credit units: 3 ECTS Credit Units: 5. Aut (O. Benice, M. Siyahhan, E. Şenol) Spr (O. Benice, G. Karamullaoğlu)*

THM 163 Dynamics of Tourism
The position of tourism as the world's largest industry which has led to the widespread acknowledgment of the decisive role it plays in shaping the world. A global overview of the industry; trends, its socio-cultural and economic impact, motivators, hospitality related services, transportation, intermediaries and attractions. *Credit units: 3 ECTS Credit Units: 5. Aut (G. Karamullaoğlu) Spr (G. Karamullaoğlu)*

THM 166 Health Studies
The knowledge and skills necessary to help people whose first-aid problems have to be addressed promptly and properly. Conducted by the professionals of the Ministry of Health in its facilities and a required passing grade for completion. *Credit units: 1 ECTS Credit Units: 1. Aut (A. N. Örer) Spr (A. N. Örer)*

THM 167 Behavior and Etiquette
Basic sociological variations amongst different cultures as well as their reactions and attitudes. Globalization, differences in understanding religious, gender and age behavior, collectivism versus individualism, dining habits and body language misunderstandings in different cultures. *Credit units: 1 ECTS Credit Units: 1.*

THM 168 Nutrition and Sanitation
Conducted by the professionals of Ministry of Health in its facilities, provides knowledge and necessary skills to help domestic and international tourists whose first-aid problems have to be addressed promptly and properly. Cardiopulmonary resuscitation (CPR), artificial breathing and how to stop external bleeding. *Credit units: 3 ECTS Credit Units: 5. Aut (A. N. Örer) Spr (A. N. Örer)*

THM 172 World Travel Destinations
Familiarization of students with popular tourist destinations and their attractions in order to understand and determine the needs, interests and expectations of tourists. Major land forms, time zones, international travel flows, and world's top tourism destinations as well as related major attractions. *Credit units: 3 ECTS Credit Units: 5.*

THM 202 Principles of Management
Insights into the basic managerial functions, primarily planning, organizing, leading and controlling. History of management with the basic premise to relate the past to the present and encourage the students to investigate and learn unified, universal, valid principles and theories applicable in the field. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Pekcan) Spr (A. Pekcan)*

THM 242 Social Psychology
Includes some of the fundamental components of the study of tourism from a social-psychological standpoint. The course will study tourism along two dimensions: by an understanding of the social, organizational and the community contexts of tourism. *Credit units: 3 ECTS Credit Units: 5.*

THM 243 Rooms Division Management
Basic skills necessary for the operations in housekeeping and front office. Concepts and techniques of rooms sales forecasting, revenue budgeting, analysis of rooms sales and profit, break-even analysis, rooms pricing and yield management. *Credit units: 3 ECTS Credit Units: 5. Aut (J. B. Chafra) Spr (J. B. Chafra)*

THM 244 Food Production Techniques
Most common tools and equipment and basic methods used in the preparation of foods. Various products used with common basic preparation methods; use and interpretation of recipes, as well as planning menus considering the traditional organization of medium to large kitchen operations. *Credit units: 3 ECTS Credit Units: 3. Aut (B. Ak) Spr (Staff)*

THM 245 Purchasing and Cost Analysis
Skills and knowledge for effective management of purchasing and cost analysis in a hotel. Determination of standards, development of operating budget, cost-volume-profit analysis, as well as basic operating activities, such as menu planning, purchasing, receiving, storing, issuing, production and serving. Knowledge required to prepare food and beverage reconciliation reports. *Credit units: 3 ECTS Credit Units: 5. Aut (E. Şenol) Spr (E. Şenol)*

THM 246 Restaurant Service
Knowledge for effective management of food and beverage services. Conducted in two sessions. First, theoretical knowledge before the service starts, then experience by working in a fine dining room. (LePiment Rouge Restaurant.) *Credit units: 4 ECTS Credit Units: 4. Aut (A. Ünal) Spr (A. Ünal)*

THM 247 Food and Beverage Management
Basic service principles and knowledge for budgeting and effective management of food service operations. Restaurant marketing, menu analysis, menu pricing strategies and guest relations. *Credit units: 3 ECTS Credit Units: 5. Aut (O. Benice) Spr (O. Benice)*

THM 252 Tourist Attractions of Turkey
Regional distribution of touristic activities with an emphasis on the natural, historical and archaeological attractions along with their characteristics as tourism products in Turkey. The field trip to selected destinations being an integral part the course. *Credit units: 3 ECTS Credit Units: 5. Aut (M. Siyahhan)*

THM 269 Co-Op Management Application
Short internship practice integrating theoretical knowledge and field experience. Completion of 40 work hours in a 5-star hotel required. *Credit units: None ECTS Credit Units: 1. Aut (G. Karamullaoğlu)*

THM 300 Summer Internship
An intensive exposure to the tourism workplace and hands-on-experience in tourism related fields. *Credit units: None ECTS Credit Units: 15. Aut (G. Karamullaoğlu) Spr (G. Karamullaoğlu)*

THM 301 Human Resources Management
Basic knowledge in human resources field. Equal employee opportunities and law, job analysis and job design, personal planning and recruiting, employee testing and selection, interviewing candidates, training and developing employees, evaluating employee performance, and pay for performance and financial incentives. *Credit units: 3 ECTS Credit Units: 5. Aut (G. Karamullaoğlu) Spr (A. B. Collins)*

THM 309 Principles of Marketing
Basic marketing concepts and principles considering the major trends and forces impacting marketing in today's high-tech era of customer value and relationships. Strategic marketing planning, segmentation, target marketing and positioning, understanding consumer behavior, new product development and product life cycle strategies and developing the marketing mix. A practical marketing-management approach and a number of real-life examples and stories that show how those basic concepts and principles are put into action in today's modern marketing world with the help of the case studies covered. *Credit units: 3 ECTS Credit Units: 5. Aut (M. Siyahhan) Spr (E. Gürel)*

THM 310 Semester Internship
One semester work in the industry. An opportunity to apply acquired theoretical knowledge to a real-life environment as well as to observe, document and evaluate the operations in tourism and hotel related entities. *Credit units: 6 ECTS Credit Units: 22, Prerequisite: THM 300. Aut (O. Benice, G. Karamullaoğlu, H. Üstündağ) Spr (H. Üstündağ)*

THM 313 Hospitality Management Accounting
Main issues in management accounting. Hotel revenue accounting: revenue accounts, operational and non-operational revenues, Internal control of revenues, Hotel revenue accounting (industry practice), VAT applications, journal entry of front office transactions, journal entry of rebates, journal entry of food and beverage sales, daily general cashier report, journal entry of cash transactions, hotel expense accounting, financial information system, classification of expenses and payroll-related expenses, hotel departmental statements / schedules, hotel income statement, Property and equipment accounting, other non-current assets accounting, hotel balance sheet, statement of cash flows, operational budget, ratio analysis, and inventory accounting. *Credit units: 3 ECTS Credit Units: 5, Prerequisite: BIM 205 or THM 106. Aut (H. Üstündağ) Spr (H. Üstündağ)*

THM 323 International Cuisines
Work (as small groups) in a luxurious restaurant's kitchen. The opportunity to prepare different menus from a variety of well-known international cuisines. *Credit units: 4 ECTS Credit Units: 4, Prerequisite: THM 244 or THS 221. Aut (E. Denizci) Spr (B. Ak)*

THM 326 Tourism Policies and Sustainability
Mass tourism development in Turkey during the early 1980's along with a debate on whether such type of tourism is sustainable or not. Analysis of various coastal and cultural tourism destinations in Turkey in regard to sustainability and its contribution to local economy. From an international perspective, conceptual and theoretical knowledge in regard to sustainable tourism. *Credit units: 3 ECTS Credit Units: 5. Aut (G. Karamullaoğlu) Spr (G. Karamullaoğlu)*

THM 327 Event Management
Historic development and importance of meetings and conventions, together with the terminology and classification. Prominent event destinations in the world and their attributes. Costing details and operation process of small to medium size events. *Credit units: 3 ECTS Credit Units: 5.*

THM 348 Service Operations Management
The dimensions of successful service firms and enlightened management as well as creative entrepreneurial opportunities. The role of service in an economy, the nature of services, service strategy, new service development, service quality, process improvement, the service encounter, managing capacity and demand, and growth and globalization of services. *Credit units: 3 ECTS Credit Units: 5. Aut (J. B. Chafra) Spr (J. B. Chafra)*

THM 392 Nutrition and General Health
Fascination of the science of nutrition and the fun and excitement of nutrition. Understanding how the scientific facts apply to people's health in daily life. *Credit units: 3 ECTS Credit Units: 5. Aut (A. N. Örer) Spr (A. N. Örer)*

THM 403 Organizational Behavior
The analytical approach to studying organizational behavior. Introduction to organizational behavior discipline, diversity in organizations, emotions and moods, perception and individual decision making, motivation concepts, foundations of group behavior, communication, leadership, power and politics, conflict and negotiation, foundation of organization structure, organizational culture, and human resource policies and practices. *Credit units: 3 ECTS Credit Units: 5. Aut (A. Pekcan) Spr (A. Pekcan)*

THM 409 Tourism Law
Laws and regulations affecting our lives and specifically those that govern the operations in tourism industry. General legal system, concepts and applications, commercial law, consumer protection regulations as well as tourism regulations, travel agency regulations and legal background governing the operation of tourist guides. *Credit units: 3 ECTS Credit Units: 5. Aut (E. Öncü) Spr (E. Öncü)*

THM 415 Finance
Basic techniques and concepts necessary to effectively manage the limited financial resources while evaluating various investment opportunities. Introduction to financial management, understanding financial statements, taxes and cash flows, time value of money (basics, annuities and other topics), risk and return, debt valuation and interest rates, stock valuation, investment decision criteria, and analyzing project cash flows. *Credit units: 3 ECTS Credit Units: 6. Aut (J. B. Chafra) Spr (J. B. Chafra)*

THM 418 Senior Project
A project on a given subject matter, enrich theoretical and practical refinement, and new trends in tourism industry. *Credit units: 3 ECTS Credit Units: 4. Aut (A. N. Örer, N. Özkaramete Coşkun, M. Siyahhan) Spr (A. B. Collins, A. Pekcan, H. Üstündağ)*

THM 419 Tourism Management Applications
Management challenges in the hospitality industry as well as practical applications of general management theories to tourism and hospitality industry. Introduction to worldwide tourism industry's management approaches, strategic management, franchise and management systems, tourism industry life cycle, human systems, yield (revenue) management, hotels' property operations, feasibility study and vanguard management. *Credit units: 3 ECTS Credit Units: 5. Aut (H. Üstündağ) Spr (H. Üstündağ)*

THM 420 Seminars on Tourism Industry
Weekly seminars by guest speakers from various tourism related industries. *Credit units: 2 ECTS Credit Units: 2. Aut (A. N. Örer) Spr (A. N. Örer)*

THM 423 Tourism Economics
In addition to theoretical aspects of tourism economy, Turkey's domestic, inbound and outbound tourism as well contribution of tourism industry to Turkey's national economy. Economic and accounting costs, firm's costs in the short and long run, economies of scale, firms' types of growth, market structures and tourism, price discrimination and tourism, externality and tourism, government intervention in the market, public goods and tourism, Turkey's tourism industry profile, inbound tourism expenditures, foreign inbound accommodation category, foreign inbound purpose of visit, outbound tourism expenditures, outbound purpose of visit, domestic tourism expenditure category, Tourism Satellite Accounts (TSA), analysis of Canadian Tourism Satellite Accounts, Turkey's Gross Domestic Products, Turkey's balance of payment, and Turkey's employment statistics. *Credit*

units: 3 ECTS Credit Units: 5, Prerequisite: (THM 107 and THM 205) or (ECON 105 and ECON 106). Aut (M. Siyahhan) Spr (M. Siyahhan)

THM 453 Total Quality Management
The ways to set standards in hotels, restaurants, airlines and other hospitality companies to provide harmonious work and monitoring, evaluating and redesigning the quality requirements in tourism industry. *Credit units: 3 ECTS Credit Units: 5. Spr (A. B. Collins)*

THM 475 Strategic Marketing for the Hospitality Industry
The strategies of management of the marketing function, the preparation of internal and external analyses, objectives strategies, action plans, and controls to develop and maintain a strategic fit between the organization's goals and capabilities/resources and its changing marketing opportunities. Guidance to the development and preparation of strategic planning of any hospitality operation. *Credit units: 3 ECTS Credit Units: 5. Spr (M. Siyahhan)*

THM 476 Research Techniques
Main fundamentals of science, fundamentals of research, kinds of research and steps in the research process. Determination of methodology, selection of data collection techniques, analysis techniques and reporting phase. *Credit units: 3 ECTS Credit Units: 5. Spr (A. B. Collins)*

THM 487 Concept and Design for Food and Beverage Outlets
Basic knowledge for developing concepts for fine dining restaurants, cafes, fast food units and cafeterias. Choosing a good location, designing the interior and exterior of the restaurant, equipping the kitchen and the dining room and managing the pre-opening and opening phases of the restaurants. *Credit units: 3 ECTS Credit Units: 5. Aut (O. Benice)*

THM 493 Nutritional Anthropology
Culture and food relations in human population, inform eating habits and kitchen culture through history. Assigned readings, case studies and presentations as centerpieces on the complex dynamics of culinary arts and culture of different societies in the history. *Credit units: 3 ECTS Credit Units: 5. Aut (A. N. Örer) Spr (A. N. Örer)*

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Hande Işıl Mengü, Ph.D., Assoc. Director

Bilkent University School of English Language (BUSEL) has two programs: the English Language Preparatory Program, and the Faculty Academic English program. The former program prepares students to meet the English language requirements for study in the different faculties and schools of Bilkent University. The latter program provides credit bearing courses in English for Academic Purposes to the students in the faculties and schools once they have met the English language requirements for study in their chosen fields.

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B.A., Psychology, Laurentian University, 2002. D.E.L.T.A., 2015.
Gökçen Uyaroğlu, Instructor
M.A., Management in Education, Bilkent University, 2013. D.E.L.T.A., 2012.
Ayça Üner, Instructor
M.A., Management in Education, Bilkent University, 2010. D.E.L.T.A., 2006.
Suphi Burak Üskent, Instructor
M.A., Management in Education, Bilkent University, 2011.

Nicole Elizabeth Walker, Instructor
M.A., Teaching English to Speakers of other Languages, Monterey Institute of International Studies, 2014.
Robert James Weekly, Instructor
M.A., Applied Linguistics, University of Southampton, 2007.
Cory Adelaide Wheeler, Instructor
B.A., English, Haverfard College, 2010.
Page Blair Wheeler, Instructor
B.A., English, Haverfard College, 2010.
Efe Burak Yakar, Instructor
M.A., Management in Education, Bilkent University, 2014. D.E.L.T.A., 2013.
Clare Yalçın, Instructor
M.Ed., Teacher of English to Speakers of Other Languages, The University of Edinburgh, 2004.
Bilge Işıl Yazıcı, Instructor
M.A., Management in Education, Bilkent University, 2012. D.E.L.T.A., 2011.
Yeşim Yeloğlu, Instructor
M.A., English Language Teaching, Middle East Technical University, 2005.
Nilüfer Yeşil, Instructor
M.A., Translation and Interpreting, Boğaziçi University, 1997. M.A. Turkish Literature, Bilkent University, 2009.
Nurdan Yeşil, Instructor
M.A., Teaching English as a Foreign Language, Bilkent University, 2004.
Lorna Yeşilkaya, Instructor
M.A., Applied Linguistics, University of Sussex, 2011. D.E.L.T.A., 2012.
Pelin Yetkin, Instructor
M.A., Management in Education, Bilkent University, 2010. D.E.L.T.A., 2009.
Fatma Gül Yıldırım, Instructor
M.A., Management in Education, Bilkent University, 2011. D.E.L.T.A., 2010.
Serap Yıldırım Varol, Instructor
M.A., English Language and Literature, Ankara University, 2006. M.A., Management in Education, Bilkent University, 2014. D.E.L.T.A. 2013.
Halime Yıldız, Instructor
M.A. Management in Education, Bilkent University, 2014. D.E.L.T.A., 2013.
Zeliha Yılmaz, Instructor
M.A. Management in Education, Bilkent University, 2014. D.E.L.T.A., 2013.
Ayşegül Utku Yurdakul, Instructor
M.A., English Language Teaching, Middle East Technical University, 2015.
Bengü Yurtseven, Instructor
M.S., English Language Teaching, Middle East Technical University, 2004.
Pelin Yücel, Instructor
B.A., English Language and Literature, Bilkent University, 2006.
Ayşe Deniz Yüzbir Gürgen, Instructor
M.A., Management in Education, Bilkent University, 2012. D.E.L.T.A., 2011.
Emine Zafer Nizam, Instructor
M.A., Management in Education, Bilkent University, 2014. D.E.L.T.A., 2013.
Özlem Zengin, Instructor
M.A., Educational Sciences Curriculum and Instruction Program, Middle East Technical University, 2015.

ENGLISH LANGUAGE PREPARATORY PROGRAM

Elif Kantarcıoğlu, Ph.D., Director

The medium of instruction at Bilkent University is English. The BUSEL English Language Preparatory Program aims to equip students with the necessary language and study skills for successful entry to and study in their chosen faculties and schools. There is an emphasis on English for Academic Purposes (EAP) in the program as a whole, which recognizes that students need more than linguistic input in order to be successful in their studies. During their stay in the program, students are required to develop the ability to analyze texts and information sources, as well as critical thinking skills and awareness of their own learning styles and preferences. The program is demanding and requires a full-time commitment on the part of the students.

Newly arriving students are required to take the Certificate of Proficiency in English Examination (COPE)* in September. Students who meet the required standards will pass directly into their freshman year. Students whose English does not meet the required standards will be placed in the Preparatory Program courses at different levels based on their results in the COPE exam.

The Preparatory Program consists of six levels (Beginner, Elementary, Pre-Intermediate, Intermediate, Upper Intermediate, Pre-Faculty) which build on one another. Each level includes the production of a complete learning portfolio (vocabulary journal, written and spoken outcomes, quizzes and homework assignments). The courses are explained below but it is important to realize that, in addition to class work, students are expected to make use of computerized learning facilities, do regular independent study, and produce assignments. Students will be evaluated continuously through achievement tests, learning portfolio assessment and assignments. Those students who have successfully completed the exit level may sit the proficiency test and, if successful, be eligible to enter their freshman year.

Beginner Course

This course provides students who enter Bilkent University with little or no background in the English language with a basic foundation. Throughout the course students are introduced to basic texts related to their everyday contexts and needs which help them to develop and consolidate the foundations of the language. The texts used are ones that expose the students to new language through an emphasis on fairly accurate grammar and lexis.

By the end of the level students will be able to read and understand simple, very short descriptive texts with visual support; will be able to listen to simple, very short texts and identify speakers, context and relationships. They will be able to produce very short texts in writing and in speaking by linking words or groups of words in short sentences.

Elementary Course

This course provides grounding in the English language and equips students with the necessary basic skills essential for work at higher levels. At this level, the development of learners' reading and listening skills goes hand in hand with the development of their language: in other words, the focus is on developing reading skills through an emphasis on fairly accurate grammar and lexis, through texts, short monologues and dialogues related to the everyday contexts and needs of the students. In the development of learners' writing skills the focus is on developing writing skills at sentence level through emphasis on accurate grammar and lexis. Writing sentences and short texts comprised of simple connected sentences will enable learners to consolidate the language they are being introduced to. As their language develops they will be able to write gradually longer detailed texts, which are of a descriptive and/or narrative nature, on concrete topics relevant to their immediate environment and interests. In speaking, the focus is on producing simple, short utterances which

* 4-year Department Students- (i) A score of at least 6.5 in IELTS (academic exam), with a minimum of 5.5 scored in every section, or (ii) a score of 87 on TOEFL iBT allows students the right to enter directly into the departments.

will enable learners to consolidate the language they are being introduced to, as well as to notice new language. There is also an emphasis on fairly accurate grammar, lexis and pronunciation. As their language develops they will be able to produce gradually longer and more detailed utterances about themselves, everyday contexts and needs.

By the end of the level, learners should be able to understand short, simple texts containing high-frequency vocabulary, and identify gist and specific information. They will have developed the basic language to be able to start reading and listening to more detailed texts, narratives, and descriptions at the subsequent level. In writing, learners need to have developed the basic language to be able to start writing longer, simple narratives and descriptions that have more detail. This will prepare learners to write more detailed narratives and descriptions at the subsequent level. In speaking, learners need to have developed the basic language to take part in simple communicative tasks and express basic everyday needs and wants. This will prepare them for the short conversations/exchanges of information they will have to deal with at the subsequent level.

Pre-Intermediate Course

At Pre-intermediate, the development of learners' reading skills is still closely linked to the development of their language. Learners will be introduced to texts in the form of narratives and descriptions in everyday contexts that have more detail than at the previous level. In listening learners will be able to listen to short texts to consolidate the language they are being introduced to, as well as to notice new language. At this level, the development of learners' writing skills is still closely linked to the development of their language. Writing short texts will enable learners to continue consolidating the language they are being introduced to. As their language develops they will be able to write longer and more detailed texts on concrete topics relevant to their immediate environment and interests. The development of learners' speaking skills is also closely linked to the development of their language. They are expected to already have the basic language to be able to carry out simple spoken tasks at the beginning of this level. As their language develops, they will be able to produce gradually longer and more detailed utterances.

By the end of the level, learners should be able to process and construct overall meaning from longer and more detailed descriptions and narratives. They will have developed the language and basic reading skills to be able to start reading more formal, well-structured and informative texts at the subsequent level. For listening they will be ready to start listening to short well-structured informative talks at the subsequent level. In writing, the learners need to have developed the language to be able to write longer, more detailed narratives and descriptions. It is expected that by producing well constructed stand-alone texts, learners will be prepared for the multi-paragraph format that they will have to deal with at the subsequent level. In speaking, learners should be able to take part in short conversations where they can have a simple exchange of information and also give brief descriptions on familiar topics. This will prepare them for the short oral presentations/talks they will need to give at the subsequent level.

Intermediate Course

At this level, learners start to explicitly develop the skills and sub-skills of reading and listening. They are expected to have already built up their language levels and the skill of careful reading and listening to be able to start reading and listening to longer texts that are more academic-like. They will learn how to become better readers through the application of the relevant sub-skills and understanding of text organization, while still continuing to develop/consolidate their language. At this level learners will learn how to become better listeners through the application of the relevant sub-skills and understanding of text organization, while still continuing to develop and consolidate their language. At Intermediate, the learners are expected to have built up their language skills to be able to start producing simple, structured essays with an introduction, development and conclusion. In speaking, learners start to explicitly develop the skills and sub-skills of speaking. They are expected to have already built up their language levels and speaking skills to be able to

communicate in simple everyday contexts. At this level learners will learn how to become better speakers through the application of the relevant sub-skills and understanding of how to initiate and maintain conversation. It is also expected that they start becoming more fluent when speaking, and that they develop tolerance for their own errors which do not hinder communication or task achievement.

By the end of the level, learners should be able to construct meaning from informative as well as narrative and descriptive texts. It is expected that exposure to such informative texts will prepare learners for the more academic style of language that they will have to deal with at the subsequent level. In writing learners need to have developed the basic language to be able to write longer narratives, descriptions and informative texts in a simple essay format that are supported with some detail and examples. Learners should be able construct meaning through simple talks, presentations and conversations. This will prepare them for more academic presentations they need to give at the subsequent level.

Upper Intermediate Course

At this level, learners will further develop the skills and sub-skills of reading and listening. Learners will be expected to already have the language, the reading and listening skills, and knowledge of text structure and organization to help them start dealing with more complex academic-like texts. Students will be expected to construct meaning from texts in which arguments are put forward and defended or supported through ideas, as well as through details and examples. At Upper Intermediate, learners are expected to have the language and writing skills, including how to write a good paragraph to put forward and support an argument in a well-structured essay. Learners will have the general English language skills to express themselves confidently but they will need to develop their academic language. At this level learners will learn how to become more confident, intelligible and natural-sounding speakers through the application of the relevant sub-skills and development of meta-cognitive awareness of their own speaking abilities. Learners will be expected to develop an argument and defend or support it through ideas (as well as through details and examples), and structure their presentations using relevant discourse markers, fillers, back-chaining and signposting.

By the end of the level, learners should be able to construct meaning from discursive as well as narrative, descriptive and informative texts, even when they are less-structured. Learners need to have developed the language to be able to write discursive essays that are well-supported. It is expected that by producing such essays, learners will be prepared for the more detailed, complex style of argumentations they will have to deal with at the subsequent level. Learners should be able to enter discussions and conversations on familiar topics with less preparation, and give well-structured oral presentations. This will prepare them for the formal presentations, discussions and debates they will deal with at the subsequent level.

Pre-Faculty Course

At Pre-Faculty, learners further refine the skills and sub-skills of reading and listening. Learners will be expected to already have the necessary language, reading and listening skills, and knowledge of text structure and argumentation. At this level they will be expected to construct meaning from texts with different rhetorical purposes in which different relationships have been utilized (i.e. advantage/disadvantage, compare/contrast, problem/solution, cause/effect, reason/result, etc.). At this level, learners are expected to have developed a good working knowledge of topic sentences, thesis statements, paragraphs and the essay structure. Learners will further refine their academic language and writing skills to write a more propositionally complex essay. Learners further develop the skills and sub-skills of speaking. They will be expected to give longer, better-prepared, structured and supported oral presentations which show an awareness of audience. It is expected that learners will continue to develop their academic language and there will also be a focus on non-verbal communication. They are also expected to be able to take part in debates, extended discussions and

conversations in a clearly participatory fashion, where they will be expected to develop an argument and defend or support it by taking a stance, clearly expressing their ideas and expanding them logically with examples and justification.

By the end of Pre-Faculty, learners should be able to construct meaning from discursive as well as narrative, descriptive and informative texts, even when they are less-structured with different rhetorical purposes and modes. It is expected that exposure to discursive texts will prepare learners for the academic style of argumentation that they will have to deal with in their faculties and departments. The listening texts used will prepare them for the variety of presentations/lectures/talks/discussions that they will be exposed to in their faculties and departments. Learners should be able to write well-structured, propositionally complex discursive essays that are well-supported. It is expected that by producing such essays, learners will be prepared for the types of academic writing required in their faculties and departments. In speaking learners should be able to take active part in formal/informal discussions, give longer and more structured oral presentations, and engage in debates using appropriate language, register and pronunciation which is intelligible and does not cause undue strain on the listener. This will prepare learners for the more academic style of speaking required in their faculties and departments as well as preparing them to interact naturally with foreign instructors and students.

Tutorials

In addition to normal teaching hours, students are also given instruction individually or in small groups of 3-5 to further meet their needs when deemed necessary.

FACULTY ACADEMIC ENGLISH PROGRAM

T. Akşit (Director), S. Akbaş, A. Akçam Hendry, F. T. Arıkan, N. Avcıbaşıoğlu, H. Başol Çetin, E. Bekişoğlu, T. P. Benell, I. Board, A. Bonar, D. C. Butcher, T. A. Cankatan, J. L. Cardwell, E. Çotuksöken, H. Dabir, J. W. Day, P. Demir, J. M. Doonan, M. D. Elwell, M. Ergün Türkkan, A. Ertan, T. Esmer, S. Evliyagil, Ö. Ezici Çetin, D. C. Glover, J. Goggin, H. Güven, K. E. Herndon, S. Hussain, A. Kadıoğlu, İ. Kaya Yıldırım, S. Keşkekci, C. Kızılduman Yazıcı, R. Koç, A. P. Lahey, M. H. J. Langbroek, R. M. Loomis, N. Mavi, Y. T. Overfield Shaw, P. E. Önkol, Z. Özek Vural, E. H. Özer, W. L. Phillips, P. Poole, S. Sert, V. M. Sherwood, E. Soylu, P. P. Stephan, S. M. Stevens Hassell, Ü. G. Ternisien, M. Tunca, R. H. M. Turner, G. Uğuz, B. F. Unsworth, R. J. Weekly, N. Yeşil, L. Yeşilkaya, B. Yurtseven.

COURSE DESCRIPTIONS

ENG 101 English and Composition I
The central basis of ENG 101 is to introduce students to an academic approach to thinking, reading, speaking and writing in an integrated, meaningful manner such that they are able to apply the skills learnt to their departmental studies. In addition, the ENG 101 course aims to further develop the students' linguistic accuracy and range in English. *Credit units: 3 ECTS Credit Units: 6. Aut (S. Akbaş, F. T. Arıkan, H. Başol Çetin, T. P. Benell, I. Board, A. Bonar, Ç. Büyükaşık Şener, J. L. Cardwell, E. Çotuksöken, J. W. Day, P. Demir, M. Ergün Türkkan, A. Ertan, T. Esmer, D. C. Glover, J. Goggin, H. Güven, K. E. Herndon, S. Hussain, A. Kadıoğlu, S. Keşkekci, C. Kızılduman Yazıcı, A. P. Lahey, M. H. J. Langbroek, R. M. Loomis, N. Mavi, E. H. Özer, W. L. Phillips, V. M. Sherwood, E. Soylu, S. M. Stevens Hassell, Ü. G. Ternisien, R. H. M. Turner, R. J. Weekly, L. Yeşilkaya, B. Yurtseven) Spr (T. P. Benell, J. L. Cardwell, E. Çotuksöken, P. Demir, M. Ergün Türkkan, S. Evliyagil, D. C. Glover, H. Güven, S. Hussain, A. P. Lahey, W. L. Phillips, S. M. Stevens Hassell, R. J. Weekly, L. Yeşilkaya, B. Yurtseven)*

ENG 102 English and Composition II
The central basis of ENG 102 is to consolidate students' academic approach to thinking, reading, speaking and writing and language usage, as initiated in ENG 101. In addition, the ENG 102 course aims to develop the students' abilities to synthesise and evaluate information and conduct basic, independent research. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ELS 101 or ENG 101 or ENG 103. Aut (A. Akçam Hendry, N. Avcıbaşıoğlu, E. Bekişoğlu, D. C. Butcher, T. A. Cankatan, H. Dabir, J. M. Doonan, M. D. Elwell, S. Evliyagil, Ö. Ezici Çetin, İ. Kaya Yıldırım, R. Koç, Y. T. Overfield Shaw, P. E. Önkol, Z. Özek Vural, P. Poole, S. Sert, P. P. Stephan, M. Tunca, G. Uğuz, N. Yeşil) Spr (S. Akbaş, A. Akçam Hendry, F. T. Arıkan, N. Avcıbaşıoğlu, H. Başol Çetin, E. Bekişoğlu, I. Board, A. Bonar, D. C. Butcher, T. A. Cankatan, H. Dabir, J. W. Day, J. M. Doonan, A. Ertan, T. Esmer, Ö. Ezici Çetin, A. Kadıoğlu, İ. Kaya Yıldırım, S. Keşkekci, C. Kızılduman Yazıcı, R. Koç, M. H. J. Langbroek, R. M. Loomis, N. Mavi, Y. T. Overfield Shaw, P. E. Önkol, Z. Özek Vural, E. H. Özer, P. Poole, S. Sert, V. M. Sherwood, E. Soylu, P. P. Stephan, Ü. G. Ternisien, M. Tunca, R. H. M. Turner, G. Uğuz, B. F. Unsworth, N. Yeşil)*

ENG 117 Advanced English Grammar I
This course is designed specifically to help students to further develop competency in grammar, vocabulary and modes of written expression under timed conditions. In order to improve their self-editing skills, students will keep a portfolio of their written work. *Credit units: 3 ECTS Credit Units: 4. Aut (N. Avcıbaşıoğlu, M. H. J. Langbroek, R. M. Loomis, N. Yeşil)*

ENG 118 Advanced English Grammar II
This course is designed to build on the skills developed in ENG 117, specifically by helping literature students to improve their competency in grammar, vocabulary and modes of written expression under timed conditions. In order to improve their self-editing skills, students will keep a portfolio of their written work. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: ENG 117. Spr (N. Avcıbaşıoğlu, M. H. J. Langbroek, R. M. Loomis, N. Yeşil)*

ENG 206 Business Communications
The objective of this course is to develop professional communication skills necessary for Business Administration majors as they enter the business world. Coursework includes writing proposals, memos, persuasive letters, and business reports as well as conducting business meetings and presentations through adopting documents to particular needs and audiences via authentic business communication cases. *Credit units: 2 ECTS Credit Units: 5, Prerequisite: ENG 102. Aut (T. A. Cankatan, Z. Özek Vural) Spr (H. Başol Çetin, T. A. Cankatan, Z. Özek Vural)*

ENG 312 Introduction to Creative Writing
Based on students' accumulated knowledge of elements and technical underpinnings of literary genres, this course aims to help students gain a deeper practical and theoretical understanding of their own values and aspirations as writers of English. Students are expected to improve their written expression in terms of style,

language, vocabulary and creativity with specific focus on metaphorical and figurative aspects of language. Taught in a workshop-based environment the course emphasizes how the process of pre-writing, writing and revision can lead to fiction, poetry and creative non-fiction. Assignments will encourage the creation and revision of drafts, and will give students the opportunity to experiment, practice, edit/improve their work, and discuss one another's work in the course forums. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: ENG 102 or ENG 118. Spr (K. E. Herndon)*

ENG 401 Technical Report Writing and Presentation

The object of this course is to assist engineering students in effectively presenting various types of information in both the written and oral modes. Students will be expected to become competent in writing and organizing technical reports and in effectively presenting academic and technical papers. The tasks performed as part of the course will mirror the tasks students will be expected to do in their prospective professional lives and in their faculty classes. *Credit units: 2 ECTS Credit Units: 4, Prerequisite: ENG 102 or ENG 104. Aut (E. Bekişoğlu, T. Esmer, S. Evliyagil, J. Goggin, S. Keşkekci, R. Koç, P. Poole, S. Sert) Spr (E. Bekişoğlu, M. D. Elwell, J. Goggin, S. Keşkekci, R. Koç, P. E. Önkol, W. L. Phillips, P. Poole, S. Sert)*

ELS 301 Advanced Communication Skills

ELS 301 aims to introduce and practice effective thinking and business communication skills both in writing and orally with a focus on presentation skills and business report writing involving secondary research. *Credit units: 3 ECTS Credit Units: 4, Prerequisite: ELS 102 or ENG 102. Aut (V. M. Sherwood) Spr (V. M. Sherwood)*

PHYSICAL EDUCATION UNIT

Ahsen Bilen, B.S., Director

The mission of the Physical Education and Sports Center is to provide the environment and programs through which the students of Bilkent University can participate and attain a healthy lifestyle. By participating in quality health, physical education and sports programs the students enrich their campus lives and develop to their fullest individual capacity.

The Physical Education and Sports Center does not offer any degree in physical education. However, the students may take up to three courses for credit over and above their departmental requirements. In addition, grades will appear on transcripts and will affect their GPA and CGPA. Students may choose from a rich selection of physical education and sports courses offered every semester.

ACADEMIC STAFF

Ahsen Bilen, Instructor
B.S., Sports Sciences and Technology, Hacettepe University, 2000.

Kağan Eynak, Instructor
B.S., Physical Education and Sports, Gazi University, 1984.

Hayri Özkan, Instructor
Ed.,D., Health and Physical Education, Vanderbilt University, 1983.

PART-TIME ACADEMIC STAFF

Sarp Baturalp, B.S., Scholl of Sports Sciences and Technology, Hacettepe University, 2000.
Tayfun Evyapan, B.S., Faculty of Language History and Geography, Ankara University, 2008.
Seda Günaltay, B.S., Medical University, Ankara University, 2008.
Halil Karakaya, B.S., Physical Education and Sports, Middle East Technical University, 1999.
Arda Özçelik, M.S., Physical Education and Sports, Başkent University , 2014.
Seda Özsoy, B.A., Accounting and Taxation, Bilkent University, 2001.
Onur Sanrı, B.S., Banking and Finance, Bilkent University, 2004.

COURSE DESCRIPTIONS

PE 110 Tennis
This course involves analyzing and teaching basic techniques (serve, forehand, backhand, volley), rules and strategies of the game. *Credit units: 1 ECTS Credit Units: 2. Spr (H. Karakaya, A. Özçelik)*

PE 115 Squash
The purpose of this courses is to teach the proper techniques such as forehand , backhand, serve , movements in the court, rules and strategies of the game of squash. The students will also learn the important principles in order to play squash safely. *Credit units: 1 ECTS Credit Units: 2. Aut (O. Sanrı) Spr (H. Özkan, O. Sanrı)*

PE 116 Intermediate Squash
Improvement of techniques such as forehand, backhand, serve and development of advanced shots such as boast, drop, lob, etc. Development of strategies, long rallies and effective movements necessary in a competitive game situation. Learning the rules and regulations in order to play the game at a competitive level. *Credit units: 1 ECTS Credit Units: 2, Prerequisite: PE 115.*

PE 125 Table Tennis
The purpose of this course is to teach basic techniques such as serve, forehand, backhand and footwork, rules and strategies of the game. *Credit units: 1 ECTS Credit Units: 2.*

PE 130 Basketball
Students learn basic techniques (receiving, passing, dribbling, shooting), rules and strategies of the game. *Credit units: 1 ECTS Credit Units: 2. Spr (K. Eynak)*

PE 135 Volleyball
This course is aimed at teaching the basic techniques (receiving, passing, serving, smash, block), rules and strategies of the game. *Credit units: 1 ECTS Credit Units: 2. Aut (S. Baturalp) Spr (S. Baturalp)*

PE 160 Strength Training
Students learn basic concept and principles, and benefits of strength training. Major muscle groups, how strength gain occurs, techniques and methods of training will be covered. *Credit units: 1 ECTS Credit Units: 2. Spr (A. Bilen)*

PE 176 Beginning Yoga
The purpose of this courses is to enhance the students overall wellbeing, concentration and performance by improving their breath capacity and postural awareness. The students will be able to learn how to improve their life / health, strength, flexibility-balance not only on the mat but also during daily activities, (when there is so much expectation, pressure and studying during the semester) only by practicing basic yoga postures, simple breathing techniques and meditation. *Credit units: 1 ECTS Credit Units: 2. Aut (S. Günaltay) Spr (S. Günaltay)*

PE 177 Intermediate Yoga
The purpose of this courses is to enhance the students overall wellbeing, concentration and performance by improving their breath capacity and postural awareness. The students will be able to learn how to improve their life/ health, strength, flexibility-balance not only on the mat but also during daily activities, by practicing intermediate yoga postures, the mind will be channeled to improve concentration, proprioceptive and introspective aspects of their physical and emotional self, by using digital pranayama techniques and mindfulness meditation techniques. *Credit units: 1 ECTS Credit Units: 2. Aut (S. Günaltay) Spr (S. Günaltay)*

PE 178 Beginning Pilates
This course is based on the Pilates principles of strengthening and flexibility. The class will focus on developing core strength but involves a complete mindful whole body workout. The students will be able to learn how to improve their life/health, strength, flexibility-balance not only on the mat but also during daily activities. *Credit units: 1 ECTS Credit Units: 2. Aut (S. Özsoy) Spr (A. Bilen, S. Özsoy)*

PE 179 Yoga Integrity
A course in a workshop format which includes lecture, demonstrations and practice. 2 hour class with first part as a practice session that leads to theory by teaching yoga postures (asanas) and second part that analyzes various anatomic structures in order to be able to create flexibility and strength. 8 limbs of yoga as a guide to learning the basic philosophy of yoga and its application during class hours. A key tool to use effectively in daily life if/when needed. Recognition of the body holistically during the practice of asanas, prayanamas and relaxation techniques so as to achieve stress management. Using energy effectively and eliminating unnecessary thoughts and efforts to avoid injuries and to achieve well-balanced and well-grounded personality. *Credit units: 1 ECTS Credit Units: 2. Aut (S. Özsoy) Spr (S. Özsoy)*

PE 180 Football (Soccer)
Students learn basic aspects of football such as; passing, dribbling, shooting, fainting techniques, rules and strategies of the game. *Credit units: 1 ECTS Credit Units: 2. Spr (H. Özkan)*

PE 192 Aikido
The purpose of this courses is to teach the basic principles, techniques and movements of Aikido. By participating in this self defense course, the students will improve their strength and flexibility, gain self confidence, respect for self and others and develop an appreciation of the sport. *Credit units: 1 ECTS Credit Units: 2. Aut (T. Evyapan) Spr (T. Evyapan)*

PE 195 Taekwondo
Students learn basic principles, techniques and movements of self defense. Fitness, strength and flexibility are improved. They will gain self confidence, respect for self and others and develop an appreciation of the sport. *Credit units: 1 ECTS Credit Units: 2. Spr (Staff)*

PE 205 Orienteering
Student will develop the knowledge and competencies needed to be successful at the orienteering. Student will develop cognitive skills needed to navigate with map and compass. They will also know and practice safety measures needed to participate in this course. *Credit units: 1 ECTS Credit Units: 2. Aut (N. Fenmen) Spr (N. Fenmen)*

GENERAL EDUCATION COURSES

The following courses are not department-specific and are offered across departments and in some cases, across faculties. "GE 100 - Orientation", GE 250 and GE 251 are required for all undergraduate students, while GE 500 is required for all graduate students.

GE 100 Orientation
Introduction to university's academic and social environment by series of activities. Talks by university administrators and guest speakers, workshops, concerts and tours of departments. Sports centers, computing facilities and library also part of orientation program. Complete set of activities and required minimum in orientation book. Mandatory for first-year students. *Credit units: 1 ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

GE 250 Collegiate Activities Program I
Ground for students to engage in diversity, creativity and commitment outside coursework. Participation in various activities provided mainly by student clubs. Student activity in designing and shaping course as well as monitoring and grading performance. Grading based on points accumulated by participation to activities. Mandatory for four-year students and to be taken in third semester. Prerequisite of GE 251, non-credit, pass/fail course. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

GE 251 Collegiate Activities Program II
Second part of GE 250/251 sequence. Total points accumulated during GE 250 and GE 251 converted to letter grade. *Credit units: 1 ECTS Credit Units: 1, Prerequisite: GE 250. Aut (Staff) Spr (Staff)*

GE 301 Science Technology and Society
Introduction to science technology and society. History of technology. Technology and politics. Engineering, ethics and responsibility. Social studies and philosophical perspectives. Environmental issues. Health, medicine and technology. Technological controversies. Technology and democracy. Intellectual property and emerging developments. Technology, innovation and responsibility. Special topics. *Credit units: 2 ECTS Credit Units: 3. Aut (R. A. Downey, E. Öncüler Yayalar) Spr (F. H. J. Deibel, R. A. Downey, E. Öncüler Yayalar)*

GE 304 Technology Society and Professional Development Seminar
Seminar course featuring guest speakers from industry, business, government, or non-governmental organizations, as well as academicians. The seminars either contribute to students' professional or career development or perspectives; discuss current issues, trends, or challenges in technology; or are related to the social, political, cultural, ethical, legal, economic, environment and sustainability, health and safety, reliability or similar dimensions of technology and engineering. *Credit units: 1 ECTS Credit Units: 1, Prerequisite: EEE 211. Spr (H. Özaktaş)*

GE 401 Innovative Product Design and Development I
The first one of a sequence of two courses - namely GE 401 and GE 402. Fundamentals of design - from the conception of an idea to a marketable end product within the framework of a simulated start-up company. Inception of a start-up company. Business plan preparation; fundamentals of project management; product design stages; incorporation of standards, quality directives, social and environmental factors. Seminars by experts in the field. Concept demonstration of the end-product. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: (EEE 212 and EEE 313 and EEE 321) or (CS 202 and CS 319) or (IE 271 and IE 375) or MAN 321 or ECON 301 or GRA 301 or COMD 305. Aut (J. Akşiyote Görür, H. A. Güvenir, Y. Karpat, M. A. Kutay)*

GE 402 Innovative Product Design and Development II
The second one of a sequence of two courses - namely GE 401 and GE 402. Presentation of the simulated companies to potential investors of a virtual stock market at a "Traders' Conference". The simulated start-up companies listed in a virtual stock market immediately after the "Traders' Conference". Simulation of marketing of products; simulation of investor relations and company publicity to investors; modification and finalization of initial business plans; simulation of quality certification processes. Completion and presentation of working prototypes of the end products. Planning and design of the associated production plant. Seminars from experts related to start-up company management issues. *Credit units: 3 ECTS Credit Units: 6, Prerequisite: GE 401. Spr (M. A. Kutay)*

GE 440 Transdisciplinary Senior Project on Globalization
This is a one-semester course offered to senior students in Departments of Economics, International Relations and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE440 is "Globalization". Globalization involves the intermeshing of various aspects of peoples' lives regardless of their geographic location. In the globalizing world, people, capital, cultures, ideas are travelling in an unprecedented level. So are crime, global warming, and diseases. Globalization with advantages and disadvantages shapes

and transforms us and the world we live in. In this course, teams study and explore different dimensions of these complex transformations and resistances in a transdisciplinary manner. *Credit units: 6 ECTS Credit Units: 12. Aut (T. Fougner, S. Sert, Z. Tandoğan)*

GE 441 Transdisciplinary Senior Project on European Union

This is a one-semester course offered to senior students in Departments of Economics, International Relations and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE441 is "European Union". The course is designed to introduce students to the political and economic aspects of the EU. It starts with an overview of the political and economics frameworks regarding the European integration, followed by a discussion of several policy areas relevant to the EU including but not limited to the single market, EMU, CAP, regional policy, and foreign and external relations. These topics allow the students to study each in an interdisciplinary framework. *Credit units: 6 ECTS Credit Units: 12.*

GE 443 Transdisciplinary Senior Project on Social Challenges in Turkey

This is a one-semester course offered to senior students in Departments of Economics, International Relations and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE 443 is "Social Challenges in Turkey". Resolving national challenges and designing policies to overcome such challenges requires mobilizing the common expertise of various areas of knowledge of economics, international relations and political science. In this course students will explore Turkey's challenges and propose solutions to these challenges within an interdisciplinary framework. *Credit units: 6 ECTS Credit Units: 12. Aut (F. T. Erman, B. Esen, E. Soylu) Spr (G. Biltekin, A. Çınar, S. Sert)*

GE 444 Transdisciplinary Senior Project on Human Mobility and Development

This is a one-semester course offered to senior students in Departments of Economics, International Relations and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE 444 is "Human Mobility and Development". This course aims to address the increased human mobility and its effects on development. Global migration has presented profound challenges and opportunities for the economic, political, and social structures in both developing and developed countries. At the nexus of development, economics, and global politics, understanding Human Mobility and Development present an interesting transdisciplinary puzzle and its effects require mobilising the expertise of various areas of knowledge including economics, international relations and political science. *Credit units: 6 ECTS Credit Units: 12.*

GE 445 Transdisciplinary Senior Project on Power and Development

This is a one-semester course offered to senior students in Departments of Economics, International Relations and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE 445 is "Power and Development". In the 21th century, individuals and social groups have developed new consciousness, formed new alliances, and improvised new methods of resistance to life-determining structures and processes of global politics and economy, which restrict individual rights and freedoms. Importantly, the protest movement has a trans-border character affecting global political and economic relations. The course is designed to study power relations in contemporary politics and economy and the resistance that has emerged globally and locally. *Credit units: 6 ECTS Credit Units: 12. Aut (T. M. Kara, E. Öncüler Yayalar, E. Soylu) Spr (T. M. Kara, Ö. Sefer, E. Soylu)*

GE 446 Transdisciplinary Senior Project on Development: Critical Perspectives and New Directions

This is a one-semester course offered to senior students in Departments of Economics, International Relations, and Political Science and Public Administration. It is designed to enhance students' transferable skills in learning beyond their disciplinary boundaries and applying theoretical material to real life issues. Students form teams and prepare a senior project working with supervisors from different fields. The chosen theme for GE 446 is "Development". We will approach the issue of development from a critical perspective that includes both the prospects and challenges of development. We will also discuss new possibilities in our understanding of development, from "sustainability" to "de-growth". Topics may include the relationship between development and other social phenomena such as environmental issues, gender policies, urbanization, nationalism, citizenship, democracy and social movements among others. *Credit units: 6 ECTS Credit Units: 12. Spr (T. Bayar, E. Soylu, A. E. Yeldan)*

GE 471 Business and Legal Considerations for Technology Startups
General knowledge on organizational and legal aspects of innovation-based technological ventures (IBTVs), formation and financing mechanisms of start-up ventures, selection, design and R & D of IBTVs product or business model, legal aspects of patent and IBTV. *Credit units: 3 ECTS Credit Units: 4.*

GE 500 Research Methods and Academic Publication Ethics
Preparation of graduate students for their careers. Regular discussion of term project, thesis, or dissertation with academic advisor. Attendance in various research seminars or scholarly talks offered regularly at the departments. Participation in a series of independent modules including workshops, short courses, and seminars in the Fall and Spring semesters on "Academic Integrity", "Effective Teaching", and other topics such as doing literature searches and publishing. *Credit units: None ECTS Credit Units: 1. Aut (Staff) Spr (Staff)*

GE 510 Fundamentals of Social Research Design
Introduction to the notion of research design to help students develop an understanding of the advantages and disadvantages of different approaches to doing social science research. *Credit units: 3 ECTS Credit Units: 8. Aut (Ç. E. Çuhadar)*

GE 511 Philosophy of Social Inquiry
Philosophical dimensions of research and knowledge production in the social sciences, with the primary aim of helping future social science researchers to develop their critical and reflective thinking abilities. Questions to be addressed: how do we know about the world; can we trust our knowledge about the world; what is science; are the social sciences really sciences; and what are theories, how do they change, and what is the relationship between theory and the key philosophical issues of ontology, epistemology and methodology. *Credit units: 3 ECTS Credit Units: 8. Spr (T. Fougner)*

GE 512 Quantitative Data Analysis
Professional statistical training while working with actual research data sets. Working with real life data to calculate descriptive statistics and perform inferential statistical tests. Practical training in the use of statistical software to analyze data sets. Sets of skills that enable to work with research data in professional settings. Specific tests conducted appropriate for a) relevant research questions, and b) structure of data (e.g., interval/ratio vs. nominal data). Tests possibly including, but not necessarily limited to, t-tests (single-sample, repeated-measures, and between-subjects), ANOVA (one-way, factorial, within-subjects, between-subjects, mixed models, and ANCOVA), correlation (zero-order bivariate, part, and partial), regression (e.g., simple linear regression, multiple regression, and logistic regression), as well as non-parametric tests (e.g., chi-square analyses, Mann-Whitney U test, and Kruskal-Wallis' H). *Credit units: 3 ECTS Credit Units: 8. Aut (A. M. Clarke)*

GE 513 Qualitative Research Methods
Comprehensive overview of qualitative data collection and analysis methods in social sciences. Necessary skills for undertaking empirical inquiry for graduate level research pursuits. Recent debates and innovations in social science methodology and basic principles underlying each method. *Credit units: 3 ECTS Credit Units: 8. Spr (F. T. Erman)*

GE 590 Academic Practices
Preparation of graduate students for academic studies and research. Practical classroom teaching, practical lab assistance and teaching, practice in conducting exams and grading assignments. *Credit units: None ECTS Credit Units: 12. Aut (Staff) Spr (Staff)*

GE 690 Academic Practices
Preparation of doctoral students for academic studies and research. Practical classroom teaching, practical lab assistance and teaching, practice in conducting exams and grading assignments. *Credit units: None ECTS Credit Units: 24. Aut (Staff) Spr (Staff)*

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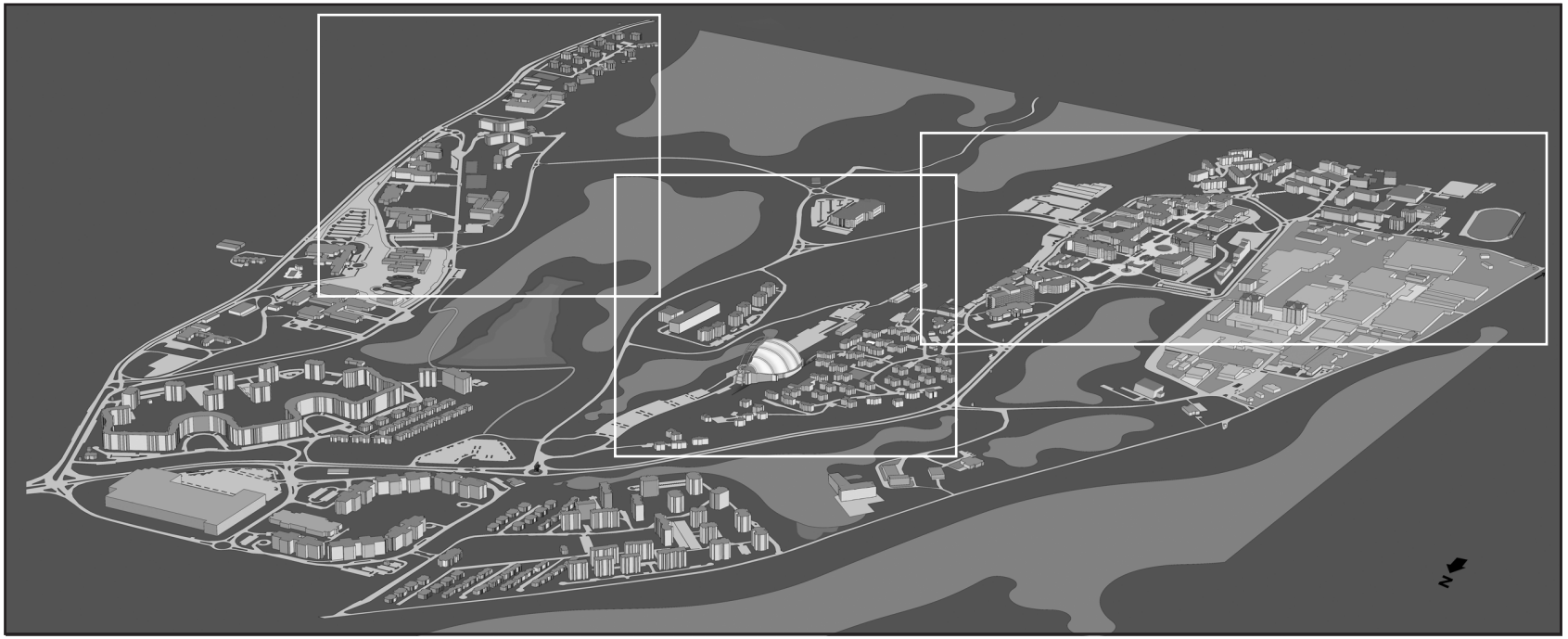
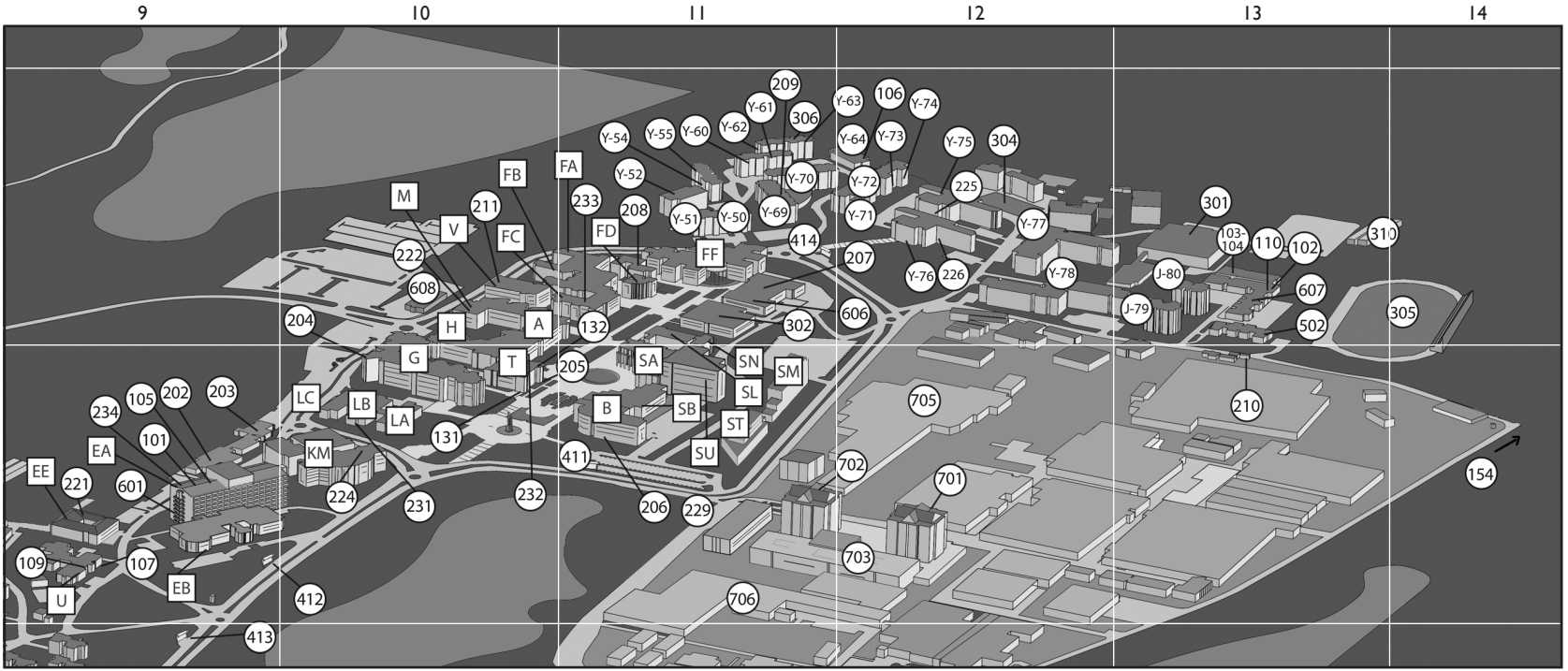


Bilkent University Campus Plan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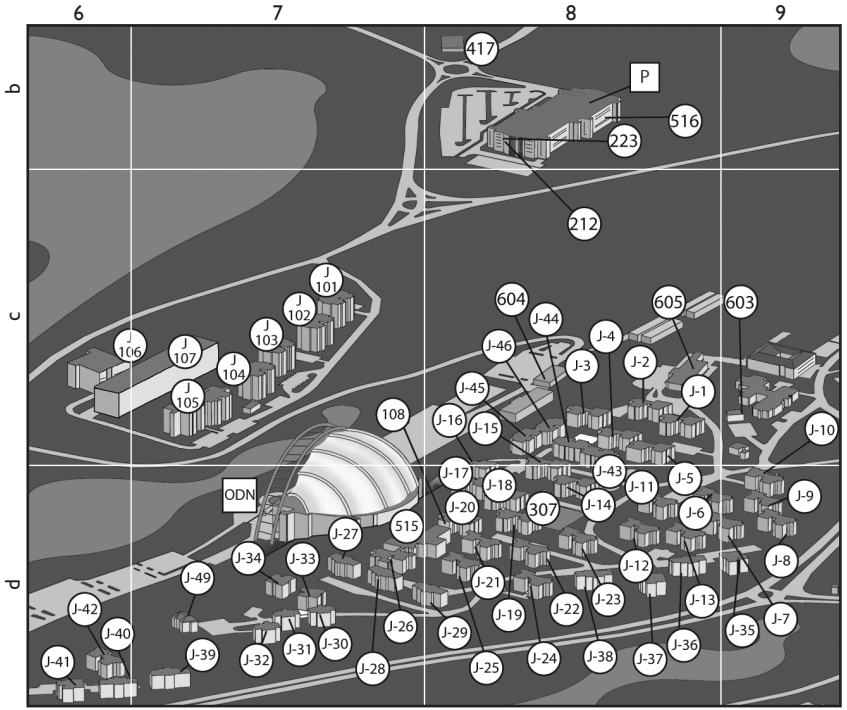
Main Campus



Middle Campus and Faculty Housing

East Campus

Main Campus

A Faculty of Economics, Administrative, and Social Sciences (10b)
B Faculty of Law (11c)
Computer Center (11c)
EA Faculty of Engineering (9c)
EB Mithat Çoruh Auditorium and Classrooms (9c)
EE Electrical and Electronics Engineering (9c)
F Faculty of Art, Design, and Architecture (Blocks A-B-C-D-F) (11b)
G Vocational School of Computer Technology and Office Management (10c)
Faculty of Education (10c)
H Faculty of Humanities and Letters (10c)
KM Library (10c)
L School of Applied Languages (Blocks A-B-C) (10c)
M Faculty of Business Administration (10b)
S Faculty of Science (Blocks A-B) (11c)
SL Advanced Research Laboratory (11c)
SM Nanotechnology Research Center (11c)
SN Nanotechnology Research Center (11c)
SU Inst. of Materials Science and Nanotechnology (11c)
ST AB-MicroNano Tech. Ind. and Trade Inc. (11c)
U Dean of Students' Office (9c)
V Lecture Halls (10b)

101 Rector's Office (9c)
102 Administrative Units (13b)
103 Registrar's Office (13b)
104 Office of Int. Students and Exchange Prog. (13b)
105 International Center (9c)
106 Dormitories Management (12b)
107 Student Activities Center (9c)
109 Career Center (9c)
110 Security and Civil Defence Office (13b)

131 Health Center (Building T) (10c)
132 Pharmacy (10c)

154 Main Campus Entrance (14c)

202 Table d'Hôte Cafeteria and A la Carte Restaurant (9c)
203 Cafe In (9c)
204 Express Cafe (10c)
205 Coffee Break (10c)
206 Mozart Cafe (11c)
207 Food Court (Speed-Kıraç) (11b)
208 Express Cafe (11b)
209 Sofa Cafe and Restaurant (11b)
210 Sözeri Kebab (13c)
211 Coffee Break (10b)
221 Mozart Cafe (9c)

222 Starbucks Coffee (10b)
224 Coffee Break (10c)
225 75th Dorm Canteen (12b)
226 76th Dorm Canteen (12b)
229 Bus Stop Kiosk (11c)
231 Coffee Break (10c)
232 Fiero Cafe (10c)
233 Starbucks Coffee (11b)
234 Fameo Cafe (9c)

301 Student Dormitories Sports Center (13b)
302 Sports Center (11b)
304 Sports Fields (12b)
305 Football Field (14b)
306 Indoor Tennis Court (11b)
310 Indoor Tennis Court (13b)

411-414 Bus Stop (11c, 9c, 9d, 11b)

502 Bilkent Pre-School (13b)

Y-50–52 Student Dormitories (11b)
Y-54–55 Student Dormitories (11b)
Y-60–64 Student Dormitories (11b-12b)
Y-69-70 Student Dormitories (11b)
Y-71-78 Student Dormitories (12b)

J-79-80 Faculty Housing (13b)

601 Yapı Kredi Bank (9c)
606 Meteksan Bookstore (11b)
607 PTT (Post Office) (13b)
608 Mescit (10b)

701-703 Cyberpark (Blocks A-B-C) (11c, 12c)
705 Tepe Group (12c)
706 Meteksan Group (11d)

Middle Campus and Faculty Housing

P Faculty of Music and Per. Arts (8b)
Bilkent Concert Hall (8b)
ODN Bilkent ODEON (7d)

108 Psyc. Counseling and Dev. Center (8d)

212 Mozart Cafe (8b)
223 FMPA Table d'hôte Cafeteria (8b)

307 Outdoor Tennis Courts (8d)

417 Taxi (8b)

515 Music and Ballet Primary School (7d)
516 Music and Perf. Arts High School (8b)

J-1–38 Faculty Housing (7d, 8c, 8d, 9d)
J-39–42 Faculty Housing (6d, 7d)
J-43–46 Faculty Housing (8c, 8d)
J-101–107 Faculty Housing (6c, 7c)
J-49 Faculty Housing (7d)

603 UNICEF National Committee (9c)
604 Greenhouse Nursery (8c)

605 Meteksan Market (8c)

East Campus

C School of English Language (4b)
D School of English Language (4b)
N School of Eng. Language (Blocks A-B-C) (4b)
Library (KE) (4b)
R Vocational School of Tourism and Hotel Services (Blocks A-B-C-D-E) (4c)
School of Applied Technology and Management (Blocks A-B-C-D-E) (4c)

133 Health Center (Building C) (4b)

155-156 East Campus Entrance (4c, 4b)

214 Le Piment Rouge Restaurant (4c)
215 Mozart Cafe (4b)
216 Mozart Cafe (4b)
217 Bilintur Catering Centre (4b)
218 Coffee Break (4c)
219 Mozart Cafe (4b)
220 90th Dorm Cafeteria (5b)
230 East Campus Housing Kiosk (6a)
303 Sports Center (4b)
308 Sports Fields (5b)
309 Outdoor Tennis Courts (5b)

415-416 Bus Stop (4b)

503 İDF Bilkent Primary and Middle School (5b)
504 İDF Bilkent High School (4b)
505-510 Bilkent Lab. and International School (BLIS) (5a, 6a)

Y-90–93 Student Dormitories (5b)

J-A–L Faculty Housing (5a, 6a)
609 Mescit (4b)
804 Bilkent Hotel (3c)

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