CIVIL ENGINEERING
AT Boğaziçi University
Boğaziçi University, located in İstanbul, Turkey, was initially established as Robert College in 1863, and the Department of Civil Engineering Department was inaugurated in 1912. Since the very beginning, the Department aimed to be a center of excellence, and currently it is one of the most prestigious institutes in its region. The curriculum is and has always been taught in English, and the University has strong ties with many international higher education institutions. Our competitive student body and our expert faculty jointly ensure top quality education and world class research. The curriculum of the Civil Engineering program comprises courses striving to establish strong theoretical foundations as well as courses that address most recent technological and managerial advances. Our aim is to educate well rounded students who are proficient in both the technical and the social aspects of the engineering profession.

At Boğaziçi University, you will also get a chance to experience and enjoy İstanbul, one of the most historical and economically vibrant cities in the world. Our picturesque campus, located on one of the hills along the Bosporus, allows our students to be fully immersed in the culture and history of this magnificent city. We sincerely thank you for your interest in the Department of Civil Engineering, and hope to welcome you to our program.

Prof. Dr. Gülay Altay, Department Chair
Civil Engineering is distinguished as being one of the first engineering disciplines. Throughout the ages it has provided creative and feasible solutions to many of the basic human needs and problems, and it still continues to take pride in being a fundamental building block of civilization. The mission of the Civil Engineering Program is to educate the students to gain an understanding of the fundamentals of science and engineering so that they can develop solutions to Civil Engineering problems and enhance their computing, communication, and research skills. It is aimed to especially emphasize teamwork, independent and innovative thinking and leadership qualities.

In particular, the Civil Engineering Program aims to:
- Train the students to have theoretical background in basic sciences and engineering and to be equipped with necessary technical skills,
- Develop students’ competency in reading, writing and oral communication,
- Provide practical experience which will enable students to utilize and enhance their engineering knowledge,
- Promote students’ self-discipline and self-assurance and the ability to learn on their own,
- Encourage team work, collaboration and development of interpersonal skills,
- Motivate the students towards contributing to the progress of science and technology,
- Teach the importance of ethical behavior in social and professional life,
- Produce graduates for the engineering and the business communities who are observant, inquisitive and open to new technologies for developing better solutions.
The Department of Civil Engineering was founded in 1912 as part of Robert College, which was established in 1863 as the first American college outside the United States. The Department bestowed only the undergraduate degree of Bachelor of Science in Civil Engineering until 1958, after which graduate study was introduced as well.

In 1971, Robert College transformed into Bogazici University and became a Turkish State University. Yet it kept its character, continuing to develop along its founding principles. The language of instruction is English and the curriculum is equivalent to those of North American universities.

Our undergraduate program has been the top rated civil engineering program in Turkey based on the results of the National University Entrance Examination. On average, the Department admits students from the first 0.3% of more than 1.5 million college-bound candidates each year.

Furthermore, the undergraduate program is evaluated by ABET as “substantially equivalent” to accredited programs in the United States. There are no nationwide statistics for graduate admissions; however, more than 80 of our graduate students originate from the top three undergraduate programs in the country.
Civil engineering is a profession that has delivered most useful services to increase the quality of life throughout history. Our graduates should realize the importance of their profession for serving civilization, and choose improving and expanding the borders of this mission as the basic goal of their study. With our lectures, quality of instructors and way of guidance, we hope to provide an atmosphere that encourages a broad outlook at real life problems, creativity, and use of interdisciplinary methods. The first two years of our undergraduate program are dedicated to the study of basic sciences and mathematics, providing the students with engineering fundamentals. The study of mechanics and materials begins in the second year. The third and fourth years involve the study and application of the principles of structural engineering, geotechnical engineering, hydraulics engineering, environmental engineering, transportation engineering, and the general systems approach to engineering problems. The students also get a basic training in construction management and economics, which are essential to every practicing engineer.

Our graduate program is based on the idea of research as a continuous process, integrated with technology, production, and marketing. The curriculum is built upon a strong fundamental education supported with computational and experimental courses. We advocate an open minded and confidence building education with a variety of electives, not only from civil engineering but also from other areas of engineering, along with natural, social and administrative sciences. Peripheral centers of excellence including the Earthquake Research Institute and the Institute of Environmental Sciences offer additional courses and opportunities for research collaboration to our graduate students.
LABORATORIES

STRUCTURAL AND EARTHQUAKE ENGINEERING LABORATORY

The Structural and Earthquake Engineering Laboratory encompasses a 500 square-meter indoor area, and encloses 15-meters of overhead space for operating a ceiling-mounted crane. The Laboratory accommodates a strong floor, a 2000 kN reaction wall, loading frames, hydraulic power units, static and dynamic loading actuators with capacities ranging from 200 kN to 1500 kN, state-of-the-art control and data acquisition systems, as well as a wide collection of displacement and load sensors; all of which are actively used for testing of large-scale structural components and systems under simulated earthquake effects. The Laboratory also hosts dynamic field testing equipment including an eccentric mass shaker, an impact generator, and accelerometers. Externally funded research projects conducted in the Laboratory aim to merge the outcomes of innovative scientific research with the latest developments in engineering practice.

SOIL MECHANICS AND GEOTECHNICAL ENGINEERING LABORATORY

The Soil Mechanics Laboratory has roots dating back to the time when Karl Terzaghi, the founder of Soil Mechanics, began conducting his studies at Robert College (later Boğaziçi University). It has a 300 square-meter closed-area comprising three large halls, a basement, a depot, and office space for the research assistants. Besides classical soil mechanics laboratory experiments, graduate students with experimental thesis stud-
ies have the opportunity to perform a wide range of specialized experiments using equipment such as residual strength torsion shear cylinder, large scale direct shear box, large size consolidation permeameter, triaxial permeameter, instructional centrifuge, cyclic triaxial test, fly-ash pellet drum.

CONSTRUCTION MATERIALS LABORATORY
The Construction Materials Laboratory accommodates all the testing equipment needed to carry out tests on fresh and hardened cement-based engineering materials. The laboratory is furnished with 2000 kN and 3000 kN compression and 100 kN flexure testing machines, 400 kN load controlled and 100 kN deformation controlled universal testing machines, freeze-thaw testing cabinet, humidity cabinet, curing room, corrosion measuring devices, nondestructive testing devices and state-of-the-art control and data acquisition systems. The subjects that are studied in the Construction Materials Laboratory include rheology of cement-based materials, strength and durability of cement-based materials, fiber-reinforcement, control of fiber dispersion features, performance based design of fiber reinforced cementious materials, crack/corrosion resistance and durability of fiber-reinforced concrete, lightweight fly ash aggregate production, strength and durability of lightweight fly ash aggregate concrete.

COASTAL ENGINEERING LABORATORY
The Coastal Engineering Laboratory is located at the Kilyos Sarıtepe Campus, along the Black Sea coast of Istanbul. The main focus of the Coastal Engineering Laboratory is to utilize the state-of-the-art equipment in field research projects and maintain strong relations with the industry to attract resources to conduct applied research. The laboratory is equipped with a research boat, topographic and bathymetric survey systems, an acoustic Doppler profiler with surface wave tracking, and a digital water quality sampler.
The main campus of Boğaziçi University is located on the hills of Bosporus Strait, just above the historic Rumeli Hisarı (Fortress of Rumeli). The University operates in six campuses:

**SOUTH CAMPUS** hosts most of the academic and administrative departments. This is the first campus which was established in 1863, and it still contains all of the original historic buildings. The offices of the Department of Civil Engineering are located in this campus.

**NORTH CAMPUS** hosts some of the academic departments, numerous laboratories and the university library. The Structural & Earthquake Engineering Laboratory, the Soil Mechanics & Geotechnical Engineering Laboratory and the Construction Materials Laboratory are all located in this campus.

**HİSAR CAMPUS** hosts various graduate institutes and an indoor, semi-olympic swimming pool.

**UÇAKSAVAR CAMPUS** hosts sport facilities and dormitories.

**KANDİLLİ CAMPUS** hosts various graduate institutes and research centers. It is also the home of the historic observatory.

**KİLYOS SANTEPE CAMPUS** hosts the language preparation school and beach facilities along the Karadeniz sea-shore. The Coastal Engineering Laboratory is located here.

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**STUDENT CLUBS**

Campus life at Boğaziçi University is a unique experience for multiple reasons. It is one of the liveliest among the Turkish Universities. It offers, encourages and fosters a wide range of activities. It is with the help of this lively campus life that we realize the an environment in which our students can fulfill their individualism and creativity while having a top-quality education.

There are many festivals organized by student clubs each year at the University. ICAMES, organized by the Engineering Club and attended also by students from abroad, Taşoda Concerts hosted by the Music Club, Dance Festival by organized by the Dance Club, and Art Festival organized by various art clubs are the main attractions in our campus during the year. Some the most active student clubs include:

- Arts Club
- Aviation Club
- Bridge Club
- Cave Expedition Club
- Chess Club
- Computer Engineering Club
- Construction Club
- Dance Club
- Electro-Technology Club
- Engineering Society
- Film Club
- Literature Club
- Mountaineering Club
- Music Club
- Photography Club
- Radio Club
- Scuba Diving Club
- Speleology Club
- Theatre Company Club
CONSTRUCTION CLUB

Founded in 1987, the Construction Club is organized by the civil engineering students. The Club is active in organization of seminars, technical trips to construction and cultural heritage sites, and career days. They maintain contacts with the construction industry through their activities and seminars given by the prominent figures of the industry. The Club is well known for its Design & Construct Competition: The competition, which takes place in spring every year and has participants both from within and outside of Turkey, consists of designing and building a small scale bridge which is tested under heavy loads.

SPORTS

A wide-range of sports opportunities can be found at Bogazici University. Soccer, basketball, volleyball, tennis, and rowing are among the most popular sports activities. A selection of athletics, gymnastics, table tennis, water polo, American football, aikido, judo, karate, taekwondo, swimming and sailing are also offered. One of the most traditional activities of the University is the Sports Festival. Each year at spring, university students from all over the world come together in a manner true to the spirit of sports to compete and to establish friendships. Under the observation and support of the relevant federations, there are competitions in 14 different branches.

ALBERT LONG HALL CONCERTS

Started in 1996 by the renowned music critic Evin İlyasoğlu and continued by the traditional support of the Rector, 10 classical music concerts take place at the Albert Long Hall in each semester. Concerts, taking place on Wednesdays, have made a name for themselves on the cultural map of Istanbul.

TAŞODA CONCERTS

Taşoda is a room that belongs to the Music Club; equipped with electronic music equipment and various music instruments, it acts like a stage for the music groups at the University. These groups work their rehearsals in this room as well. The concerts that take place in Taşoda are sought after by students from different universities throughout the year.

MİTHAT ALAM FILM CENTER

Mithat Alam, an alumnus, donated the funds used to establish the Mithat Alam Film Center, with the goal of supporting students who are interested in the art of film, and providing for everyone at the University an easy access to an archive comprising 2000 films. The Center hosts screenings of selected films, interviews with influential figures from the film world, and conferences.

LIBRARY

Established in 1863 and currently housing a collection of close to 600,000 items, Bogazici University Library is an academic library of 10,000 square-meters located at the North Campus. The Rare Books Collection, the Near-Eastern Collection and the US Historical Archives are the Library’s prized collections of great historical importance. The Library’s seating capacity is 1450 and it is organized as an open-shelf system. Users can access the internet through wireless connections.
ATİLLA AKKOYUNLU  akkoyun@boun.edu.tr
Environmental Engineering, PhD from İstanbul Technical University
Dr. Akkoyunlu is an expert in lake pollution, eutrophication processes, and watershed management. His current research involves studies of watersheds in terms of their current pollution by point and nonpoint (diffuse) sources, focusing on the present pollution level, determination of the future pollution level by mathematical models, and suggestions for watershed management. He has led and contributed to various projects prepared for the Ministry of Environment and Forestry of Turkey.

GÜLAY ALTAY  askarg@boun.edu.tr
Structural Engineering, PhD from İstanbul Technical University
Dr. Altay’s research interests include structural earthquake engineering, repair and strengthening of buildings, passive and active control, behavior and design of steel structures, thin walled members, structural stability, structural connections, plates, intelligent structural materials and systems, dynamical behavior, and coupled fields. She actively participated in projects COST-CI “Structural connections” and COST-C26 “Urban habitat under catastrophic events”, and she was a partner country leader for the FP-7 project entitled “Protection of historical structures with reversible mixed technologies”.

CEM AVCI  avci@boun.edu.tr
Groundwater Hydrology, PhD from Purdue University
Dr. Avci is an expert in groundwater hydrology. His recent research includes pumping test assessments, numerical modeling for flow and solute transport using radial basis functions, risk based assessment of preventative measures for soil and ground water contamination, quantification of environmental impact assessment evaluation of landfills, and energy efficiency in buildings.

GÖKHAN BAYKAL  baykal@boun.edu.tr
Geotechnical Engineering, PhD from Louisiana State University
Dr. Baykal’s areas of research include micromorphology, microstructure and micromechanics of geomaterials. His particular interest focuses on the interface behavior of soil and assessment of the interface and improvement of the interface properties. Recent research topics include waste utilization (especially fly ash, slag, sludge and waste tires), environmental geotechnics (mainly composite clay liners and hydrocarbon contamination), soil improvement techniques (mainly chemical stabilization and inclusions), offshore geotechnics, pelletization of fine granular material, production of artificial calibration sand, and crushing behavior of granular material.

OSMAN BÖREKÇİ  borekci@boun.edu.tr
Coastal Engineering, PhD from University of Delaware
Dr. Börekçi’s expertise lies in coastal engineering, and his current research interest is in numerical modeling using meshless methods. Ongoing studies are concerned with the application of the radial basis function collocation method in modeling coastal hydrodynamics (waves, currents, etc.), coastal pollution transport and sloshing in tanks subjected to earthquake forcing.
ÖZER ÇİNİÇİOĞLU ozer.cinicioglu@boun.edu.tr
Geotechnical Engineering, PhD from University of Colorado
Dr. Çinciçioğlu specializes in the areas of soil mechanics and foundation engineering. His research interests include soil behavior, soil dynamics, constitutive relationships, in-situ testing systems, centrifuge and physical modeling, ground improvement technologies, and terramechanics problems. He is particularly interested in anchored shoring systems, piled foundations and suction anchors. His current research focuses on the effects of lateral deformations on the excavation walls in over-consolidated soils.

SEMRA ÇOMU semra.comu@boun.edu.tr
Construction Management, PhD from Virginia Tech
Dr. Çomu works in the area of construction engineering and management. Her areas of research include project management, global project networks, virtual collaboration, risk management, occupational health and safety management, information technology in construction and energy efficient buildings. Her recent research mainly focuses on the application of building information modeling (BIM) in two main areas: safety management and energy efficient building designs. Current projects include use of virtual environments for developing a safety training tool, and understanding user behavior for mitigating the gap between predicted and actual building energy performance for BIM implementations.

ILGIN GÖKAŞAR ilgin.gokasar@boun.edu.tr
Transportation Engineering, PhD from Rutgers University
Dr. Yaşar specializes in the areas of intelligent transportation systems and traffic engineering. Her research focus includes real-time traffic control, freeway ramp metering, large scale simulation models, incident management and traffic safety, congestion pricing, and economic evaluation of intelligent transportation systems. Ongoing projects include macroscopic and microscopic modeling and evaluation of incident detection algorithms for Istanbul freeways, PARAMICS modeling and evaluation of other ITS implementations in Istanbul.

EROL GÜLER eguler@boun.edu.tr
Geotechnical Engineering, PhD from Istanbul Technical University
Dr. Güler’s expertise include foundation design, slope stabilization and soil improvement. He has also conducted research and professional projects in the field of environmental geotechnics. Successfully implemented his research studies to practical problems, Dr. Güler is particularly well known within the geotechnical engineering community for his geosynthetic applications. In the last 15 years his main research focus was geosynthetic reinforced soil walls, a technology that he introduced to Turkey. He is the convener of the technical committee on geosynthetics for International Standards Organization. He is also an international member of the Geosynthetics Committee of the Transportation Research Board of USA.

SAMİ AND KILIÇ skilic@boun.edu.tr
Structural Engineering, PhD from Stanford University
Dr. Kılıç specializes in structural engineering. His research interests are focused on non-linear response of reinforced concrete and steel structures, finite element modeling and simulation of complex engineering structures using multi-disciplinary approaches, mesh generation techniques, earthquake engineering, fluid-structure interaction, response of structures to short-duration loadings such as impact and blast.
HİLMİ LUŞ hilmilus@boun.edu.tr  
**Structural Mechanics, PhD from Columbia University**  
Dr. Luş’s main expertise lies in the areas of structural dynamics and earthquake engineering. His current research interests include system identification, structural health monitoring, and reliability analysis. His recent projects and publications focus on the inverse vibration problem and its applications for damage detection. He is the co-author of two textbooks in Turkish, one on structural dynamics and the other on strength of materials, both of which have received awards from the Turkish Academy of Science.

BELİZ ÖZORHON ORAKÇAL beliz.ozorhon@boun.edu.tr  
**Construction Management, PhD from Middle East Technical University**  
Dr. Özorhon’s areas of research include organizational learning, knowledge management, project management, strategic decision making, international construction, joint ventures, performance management, and innovation management. Her recent project focuses on the analysis and measurement of innovation in construction adopting a project life-cycle approach. This is a part of a large project at the University of Salford that investigates the innovative processes in the wider built environment.

KUTAY ORAKÇAL kutay.orakcal@boun.edu.tr  
**Structural & Earthquake Engineering, PhD from UC Los Angeles**  
Dr. Orakçal’s research interests lie in the areas of structural and earthquake engineering, with an emphasis on the seismic performance of reinforced concrete structures. His current research topics include behavior assessment for reinforced concrete columns with deficient anchorage conditions, frames with detailing deficiencies, and structural walls with shear-dominated responses; related studies involve conceptual modeling, numerical simulation, and laboratory testing. Dr. Orakçal’s recent focus is to provide design engineers improved analytical capabilities to model the earthquake behavior of structures, which is important in the development of performance-based seismic design provisions.

EMRE OTAY otay@boun.edu.tr  
**Coastal Engineering, PhD from University of Florida**  
Dr. Otay specializes in coastal and ocean engineering with particular emphasis on wave mechanics, coastal hydrodynamics, transport of sediments and pollutants in coastal waters. For his research, he employs both experimental and theoretical methods including field measurements and numerical modeling with a special focus on stochastic analysis and modeling. Application areas of his research include beach nourishment, offshore dredging, and stochastic modeling of maritime.

TURAN ÖZTURAN ozturan@boun.edu.tr  
**Construction Materials, PhD from İstanbul Technical University**  
Dr. Özturan is an expert on the mechanical properties and durability of cement based composites and concretes. He is especially interested in the use of cement replacement materials for improving the strength and durability of concrete, and he has experimentally studied durability of concrete covering the freeze-thaw resistance, sulphate resistance, salt scaling, chloride ion permeability and corrosion of reinforcement in concrete. Inclusion of steel, glass and polymeric fibers are also considered in his research work. Dr. Özturan’s recent work focuses on the properties of lightweight fly ash aggregates produced by cold bonding and sintering the pellets of fly ash binder mixtures.
NILUFER OZYURT nilufer.ozyurt@boun.edu.tr

Construction Materials, PhD from Istanbul Technical University

Dr. Ozyurt’s current research interests focus on cementitious materials. She mainly works on fresh state properties (rheology) of cement-based materials, effects of material rheology and mould/sample variables on flow characteristics, fiber dispersion features and consequently resulting mechanical performance of tailor-made materials. Another subject she is studying is optimization of cement-based mixtures for control and prevention of static and dynamic segregation of fibers. Main objective of the research she does is to contribute to the performance based design studies of fiber-reinforced cement-based materials.

SERDAR SELAMET serdar.selamet@boun.edu.tr

Steel Structures, PhD from Princeton University

Dr. Selamet specializes in the areas of steel design, earthquake and structural fire engineering, multi-hazard assessment of structures and computational mechanics. His research involves earthquake resistant design, finite element modeling of steel connections, theoretical and experimental investigation of structural behavior against fire hazard, material constitutive behavior at elevated temperatures, and reliability analysis of high-rise buildings in the event of fire. Dr. Selamet has recently received the prestigious Marie Curie Fellowship from the European Commission.

SERDAR SOYÖZ serdar.soyoz@boun.edu.tr

Structural Mechanics, PhD from UC Irvine

Dr. Soyöz’s research interests cover structural health monitoring, structural reliability assessment, earthquake engineering and structural dynamics. He is experienced in the development and experimental verification of vibration-based damage detection methodologies; development and implementation of hardware and software systems for structural health monitoring applications; structural reliability estimation methodologies based on system identification results; modeling and implementation of adaptive base isolation technologies; reliability-based code development of offshore wind turbines; assessment and health monitoring of offshore platforms; regional and facility-based seismic risk assessment; soil-structure interaction analysis.

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Reinforced Concrete & Experimental Methods, PhD from University of Ottawa

Dr. Yalçın has worked extensively in the area of experimental studies on reinforced concrete structures with particular emphasis on seismic retrofitting using post-tensioning and composites. He is also involved in analytical research such as quick seismic assessment methods and energy-based analysis and design of reinforced concrete structures. His current research interests include energy-based seismic hazard mapping, rehabilitation of historic structures, and development of bridge management systems. He is a member of the Association of Professional Engineers in Ontario, Canada.
TURAN DURGUNOĞLU  
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Geotechnical Engineering, PhD from UC Berkeley  
Dr. Durgunoglu is an expert in geotechnical engineering, and his areas of expertise include soil modelling using in-situ measurement techniques, earthquake geotechnical engineering with a specific emphasis on dynamic soil properties, soil liquefaction, cyclic mobility of fine grained soils under earthquake loadings, observational methods in foundation engineering, instrumentation and monitoring and related case studies. He has contributed greatly to the design of flexible earth retaining structures such as reinforced earth, soil nailing and terranail systems.

GÖKMEN ERGÜN  
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Transportation Engineering, PhD from Northwestern University  
Dr. Ergün specializes in the areas of transportation planning, traffic engineering, highway design and highway safety engineering with recent emphasis on the safety analysis and design of new roadside barriers. His research interests include transportation planning models (in particular disaggregate behavioral models), sustainable transportation, congestion mitigation, arterial optimization and the effects of highway design on safety. He has acted as a consultant to the recent Transportation Master Plan of Istanbul.

UĞUR ERSOY  
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Reinforced Concrete, PhD from University of Texas at Austin  
Dr. Ersoy is one of the foremost experts in reinforced concrete in Turkey. His research focuses behavior and rehabilitation of cast-in-place and precast concrete structures subjected to earthquakes, with particular emphasis on development of new methods for the repair and strengthening of such structures. He is the author of numerous textbooks, and his book on reinforced concrete is arguably the most popular reference book in its field. Dr. Ersoy has been a key figure in the development of LRFD codes in Turkey, and he has actively participated and leaf numerous committees on codes and standards.

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Reinforced Concrete, PhD from Istanbul Technical University  
Dr. Karakoç’s areas of expertise include structural engineering, reinforced concrete, analysis and design of earthquake resistant structures and buildings with a focus on applications in Turkey. His research has mainly focused on fiber reinforced concretes, damage and fracture mechanics for brittle materials, with particular emphasis on constitutive modeling of cracked concrete media. He has also worked on masonry structures, with particular emphasis on applications of damage and fracture mechanics and constitutive modeling of cracked media.

SEMİH TECZAN  
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Structural Engineering, PhD from Istanbul Technical University  
Dr. Tezcan is a pioneering expert on computer based methods of structural analysis and finite element analysis. His research has dealt with almost all the main problems in structural earthquake engineering, and he has contributed greatly to the development of earthquake engineering in Turkey. Having considerable consulting experience, Dr. Tezcan has also worked on interdisciplinary research and application projects including urban transportation and environmental issues.