



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

<b>FACULTY OF ENGINEERING AND NATURAL SCIENCES</b>						
<b>DEPARTMENT: ENVIRONMENTAL ENGINEERING</b>						
<b>CODE</b>	<b>COURSE</b>	<b>ECTS</b>	<b>SEMESTER</b>	<b>PROFESSOR</b>	<b>LEVEL OF EDUCATION</b>	<b>COURSE CONTENT</b>
1201831	Anaerobic Biological Treatment	4	Fall/Spring	Prof. Dr. Dilek Erdirençelebi	Undergraduate	Introduction to biological treatment processes, anaerobic stoichiometry, microbiology, digestion characteristics, co-digestion, reactors, application to industrial wastewaters, energy recovery.
1201711	Biological Nutrient Removal	4	Fall/Spring	Prof. Dr. Dilek Erdirençelebi	Undergraduate	Aerobic processes, anoxic processes, phosphorus removal, microbiology, nitrogen and phosphorus removing systems, reactors, design and process operation.
1201901	Sustainable Wastewater Treatment and Recovery	4	Fall/Spring	Prof. Dr. Dilek Erdirençelebi	Undergraduate	Biological treatment processes, reactors, processes for useful matter recovery, operation, recovery of energy, biopolymers, metals, nitrogen and phosphorus.
1201911	Environmental Biotechnology	5	Fall/Spring	Prof. Dr. Dilek Erdirençelebi	Master	Biological treatment processes, microbiology, aerobic processes, anaerobic processes, anoxic processes, treatability studies, modelling, reactor designing, process operations, review of pilot- and real-scale applications.
1201912	Sustainable Operation of Wastewater Treatment Plants (WWTP)	5	Fall/Spring	Prof. Dr. Dilek Erdirençelebi	Master	Introduction, municipal WWTPs, processes, parameters, design characteristics, operational characteristics, industrial WWTPs, processes, reactor operations, sectors, processes and systems with valuable material recovery, waste recovery methods.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1201913	Sustainable Development	5	Fall/Spring	Assoc. Prof. Dr. Selim Doğan	Master	SDG Knowledge, Intergovernmental Processes, SDG Actions, Implementation Progress, SD Goal 6: Water and Sanitation, SD Goal 11: Sustainable Cities and Communities, SD Goal 12: Climate Action, SD Goal 15: Life on Land, Rescue Plan for People and Planet
1201920	Drought Analysis and Monitoring	5	Fall/Spring	Assoc. Prof. Dr. Selim Doğan	Doctoral	The concept of drought and extreme events in hydrology, Meteorological, hydrological and agricultural droughts, Drought classifications, Drought parameters, Methods for drought analysis and monitoring, Drought Indices (SPI), Drought Indices (EDI), Drought Indices (PDSI, Z-Score, Percentiles, others.), Calculation of SPI, Calculation of EDI, Constructing drought time series, Temporal and spatial analysis of drought parameters, Drought monitoring, Drought management
1201540	Electrochemistry	4	Fall	Asst. Prof. Dr. Seçil Tutar Öksüz	Undergraduate	The aim of this course is to teach the basic principles of electrochemistry, the laws of electrochemistry, electrochemical equations, electrochemical cell types, and electrochemical applications (e.g. batteries and fuel cells).
1201631	Soil Pollution and Control	4	Spring	Asst. Prof. Dr. Seçil Tutar Öksüz	Undergraduate	The aim of this course is to introduce the causes of soil pollution from various aspects and to teach physical, chemical and biological techniques for the treatment of contaminated soils.

## DEPARTMENT: ELECTRICAL-ELECTRONICS ENGINEERING

CODE	COURSE	ECTS	SEMESTER	PROFESSOR	LEVEL OF EDUCATION	COURSE CONTENT
1202228	Computer Programming 1	5	-	Asst. Prof. Dr. Ahmet SOLAK	Undergraduate	General introduction and fundamental concepts of programming, algorithm design and flowcharts, introduction to C functions and variables, operators, comparison, loops, arrays, matrices, sorting, searching, functions, pointers, strings, mathematical functions and applications, file operations, sample applications



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202301	Circuit Analysis 1	5	-	Asst. Prof. Dr. Kemal ERDOĞAN	Undergraduate	Signals and general characteristics of signals, unit step function and applications, unit ramp function, exponential function, sinusoidal functions and applications, average and effective values of signals, Kirchhoff's laws, voltage divider circuits, current divider circuits, circuit analysis techniques (Node voltage method, mesh current method, superposition method, special cases), source transformation, maximum power transfer, circuits with dependent sources, mesh current method with dependent sources, node voltage method with dependent sources, special cases, Thevenin and Norton equivalent circuits in circuits with dependent sources, inductors and capacitors, switching functions, initial energy in inductors and capacitors, current, voltage, power and energy calculations, natural response of RL circuits, natural response of RC circuits, general solution for step and natural responses, sequential switching, natural response of parallel RLC circuits, natural response of series RLC circuits, step response of series RLC circuits, general solution for step and natural responses.
1202304	Electronics 1	5	-	Prof. Dr. Seral ÖZŞEN	Undergraduate	Conduction in P-type doped semiconductors, types and characteristics of semiconductor diodes, rectifiers, clippers and clampers, junction transistors: current components and characteristic curves, study of common-base, common-emitter, and common-collector circuits as amplifiers, $H_{FE}$ current gain and analytical expressions of transistor characteristics, transistor biasing circuits, DC analysis of transistor circuits, structure and types of FETs, FET biasing and DC analysis, BJT AC circuit models, BJT AC analysis.
1202312	Logic Circuits	5	-	Prof. Dr. Rahime CEYLAN	Undergraduate	Characteristics of ADC and DAC, digital number systems, binary codes and addition/subtraction in these codes, Boolean algebra axioms and theorems, simplification of logic functions using Karnaugh method, implementation of functions with NOT, AND, OR, NAND, NOR, EXOR, EXNOR operations and gates, combinational circuit elements such as adders, half adder, full adder, subtractors, half subtractor, full subtractor and their usage, code converters, comparators, combinational circuit elements and usage such as decoders, multiplexers, and demultiplexers, CMOS and TTL circuits, flip-flops, counter design, counter design with 7493, problem solving.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202303	Differential Equations	4	-	Prof. Dr. Levent SEYFI	Undergraduate	Introduction, differential equations and their solutions, classification of first-order differential equations, applications of first-order differential equations to electrical circuits, differential equations reducible to first-order differential equations, second-order differential equations, applications of second-order linear differential equations with constant coefficients to electrical circuits, higher-order differential equations, solution of linear differential equations with variable coefficients by power series, Laplace transform and applications, inverse Laplace transform and applications, systems of differential equations.
1202313	Computer Programming 2	3	-	Asst. Prof. Dr. Ahmet SOLAK	Undergraduate	Introduction to MATLAB, arrays, polynomials, matrices, graphs-1, graphs-2, finding the equation of a curve, integral calculation, file operations, Simulink, introduction to Proteus, analog circuit drawing, digital circuit drawing, preparing printed circuit board examples, sample problem solutions.
1202401	Circuit Analysis 2	5	-	Asst. Prof. Dr. Kemal ERDOĞAN	Undergraduate	Sinusoidal source, sinusoidal response, phasor, complex numbers and complex operations, examples, passive circuit elements in the frequency domain, Kirchhoff's laws in the frequency domain, series, parallel, and delta-wye transformations, source transformation and Thevenin-Norton equivalent circuits, node voltage method, mesh current method, phasor diagrams, instantaneous power, average and reactive power, RMS values and power calculations, complex power, power calculations, maximum power transfer, balanced three-phase voltages, three-phase voltage sources, analysis of wye-wye and delta-wye circuits, power calculations in balanced three-phase circuits, average power measurement in three-phase circuits, self-inductance, mutual inductance, polarity determination in coils with mutual inductance, energy calculations, linear transformer, ideal transformer, equivalent circuits of magnetically coupled coils, concept of resonance, quality factor in resonance circuits, bandwidth, circuit elements and circuit analysis in the s-domain, transfer function, transfer function in partial fractions, circuit solutions and examples using the Laplace method.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202403	Electronics 2	5	-	Prof. Dr. Seral ÖZŞEN	Undergraduate	The function of the transistor when an electronic circuit operates under AC conditions, operation of transistors as four-terminal devices and transistor parameters, obtaining parameters for different transistor models, low, mid, and high-frequency equivalent circuits of transistor amplifiers, AC analysis of transistor amplifiers, AC analysis of transistor amplifiers, low, mid, and high-frequency equivalent circuits of FET amplifiers, AC analysis of FET amplifiers, integrated circuits and operational amplifiers, operational amplifier equivalents and analysis of circuits with operational amplifiers, operational amplifier applications, 555 timer oscillator circuits, voltage regulators.
1202412	Logic Circuit Design	7	-	Prof. Dr. Rahime CEYLAN	Undergraduate	Analysis of sequential logic circuits and synchronous sequential logic circuits, preparation of state diagrams, state tables, and application tables, reduction of the number of states and design of synchronous sequential circuits, synthesis of sequential circuits, design of various types of synchronous counters and shift registers, registers, shift registers, parallel-loaded registers, internal register transfer, bus transfer and data transfers between registers, design of arithmetic processors implementing given functions, design of logic processors implementing given functions, ALU and accumulator processor design, control unit design using algorithmic state machines, control unit design using one flip-flop per state, using decoders, and using PLAs, fan-out calculation in circuits with RTL, TTL, or DTL characteristics.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202503	Automatic Control 1	5	-	Prof. Dr. Akif DURDU	Undergraduate	Introduction to Control Systems, Definitions, Classification of Control Systems, Examples of Modern Control Systems, Mathematical Foundations: Laplace Transforms, Solution of Differential Equations, State Space Representations, Transfer Functions and Block Diagrams of Linear Control Systems, Reduction of Block Diagrams, Signal Flow Graphs and Mason's Gain Formula, Mathematical Models and Transfer Functions of Electrical, Mechanical, Thermal, and Fluid Systems, Block Diagrams, AC and DC Servomotors, BLDC, Simulation Models of Stepper Motors, Transient Response Analysis of Feedback Control Systems, Transient Response of First and Second Order Systems, Time Domain Characteristics, Steady-State Response Analysis and Steady-State Errors of Feedback Control Systems, Stability Analysis, Root Locus, Design Using Root Locus, Industrial Controllers.
1202535	Microcontroller	3	-	Asst. Prof. Dr. Mücahit CİHAN	Undergraduate	What is a microcontroller? Differences between microcontroller, microprocessor, and microcomputer, general structure of PIC microcontrollers, block diagrams of 16FXX and 16FXXX type microcontrollers, special registers and their functions, circuits using microcontrollers, peripheral units used in microcontroller circuits, communication with microcontrollers, communication of microcontrollers with other hardware, microcontroller boards, simulation examples.
1202511	Electronics Circuit Design	3	-	Prof. Dr. Bayram AKDEMİR	Undergraduate	What are Diodes and Transistors? How to Use Them, Linear Power Supply Design, Concepts of Current Source and Voltage Source, Switching Power Supply Models, Buck, Boost, Flyback etc., Examination of Op-Amp Characteristics, Slew Rate, Rail-to-Rail etc., Circuit Design with Op-Amps, Asymmetric and Symmetric Power Supply Behaviors, Design and Calculation of Measurement Amplifiers, Frequency Generators and Types, Sine, Square etc., Stable Frequency Synthesis, Filter Types and Simple Filter Applications, Digital Filter Design and Application Examples, FIR, IIR etc., Switching Elements and Their Comparisons: Transistor, MOSFET, TRIAC, Thyristor etc., Driving Optical Elements and Modulation Concepts, Review Questions and Examples.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202750	Industrial Robotic Applications	3	-	Asst. Prof. Dr. Mücahid BARSTUĞAN	Undergraduate	History of industrial robots, types and application areas of industrial robots, future and new application areas of industrial robots, explanation of industrial robot drivers, power connections, and teach pendant, introduction to industrial robot movements and axes, overview of RT Toolbox 3 software, features of MELFA BASIC V programming language, commands in MELFA BASIC V, example applications, industrial robot input-output connections, industrial robot simulations.
1202812	Antennas and Propagation	4	-	Asst. Prof. Dr. Dilek UZER	Undergraduate	Definition of Antennas and Types of Antennas, Formation of Radiation, Current Distribution on Thin Wire Antenna, Basic Antenna Parameters, Radiation Pattern, Isotropic, Directional and Omnidirectional Patterns, Radiation Power Density, Radiation Intensity, Directivity, Gain, Antenna Efficiency, Half-Power Beamwidth, Beam Efficiency, Bandwidth, Polarization, Input Impedance, Radiation Resistance, Antenna Radiation Efficiency, Effective Length and Equivalent Areas, Maximum Directivity and Maximum Effective Area, Friis Transmission Equation and Radar Range Equation, Antenna Temperature, Radiation Integrals and Auxiliary Potential Functions, Vector Potentials for Electric and Magnetic Current Sources, Electric and Magnetic Fields for Electric and Magnetic Current Sources, Solution of Inhomogeneous Vector Potential Wave Equation, Far-Field Radiation, Reciprocity and Mutuality Theorems, Basic Antennas, Radiation from Infinitesimal Dipole, Power Density, Radiation Resistance, Near Field, Far Field and Intermediate Field Regions, Small Dipole, Region Division (Far-Field Region, Radiating Near Field and Reactive Near Field Regions), Finite Length Dipole, Half-Wave Dipole, Vertical Antenna, Horizontal Wire in Free Space, Horizontal Wire Near Ground, Rhombic Antenna, Loop Antenna, Helical Antenna, Frequency-Independent Antennas (Spiral Antenna and Log-Periodic Array), Antenna Arrays, Two-Point Source, N-Element Array and Radiation Pattern Plots, Pattern Multiplication, Typical Arrays (Yagi-Uda, Broadside, etc.), Array Scanning (Phase Scanning, Frequency Scanning), Microwave Antennas, Horn Antennas, Parabolic Reflectors, Slot Antennas, Lenses, Electromagnetic Wave Propagation, Reflection, Refraction, Diffraction, Interference, Propagation Paths of EM Waves, Ground Waves, Space Waves, Sky Waves.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1202803	Electrical Energy Transmission	4	-	Assoc. Prof. Dr. Halil ÇİMEN	Undergraduate	Introduction to electric transmission systems, basic principles related to the calculation of transmission systems and power for single-phase and three-phase systems, resistance and inductance in transmission lines, inductance in transmission lines, capacitance in transmission lines, short transmission lines, medium-length transmission lines, long transmission lines, stability and compensation in transmission lines, design of 34.5 kV power transmission lines.
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## DEPARTMENT: INDUSTRIAL ENGINEERING

CODE	COURSE	ECTS	SEMESTER	PROFESSOR	LEVEL OF EDUCATION	COURSE CONTENT
IE1203133	Introduction to Industrial Engineering	3	Fall	Assoc. Prof. Dr. M. Emin BAYSAL	Undergraduate	Operations and productivity, operations strategy in global framework, the design of goods and services, locations strategies, layout strategies, human resource, work design and measurement, operations research, simulation, quality management, project management, engineering economy, descriptive statistics and data summary, forecasting and simple linear regression, ergonomics.
IE1203333	Operations Research-1	6	Fall	Assist. Prof. Dr. Alper DÖYEN	Undergraduate	Introduction to operations research, modeling by linear programming, linear programming problem examples, graphical solution method, simplex method, special cases in simplex method (alternative optimal, degeneration, unbounded solution space), big-M method, two-phase method, finding the dual of linear programming problems, weak duality, strong duality, complementary slackness, reading optimal dual solution from simplex table, sensitivity analyses (on graphical solution, on simplex table and on GAMS solution file), dual simplex method, transportation problems, transportation simplex method (MODI method), assignment problems, Hungarian method, introduction to integer programming, branch and bound method.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

IE1203334	Probability Theory	4	Fall	Assist. Prof. Dr. Ece ÇETİN YAĞMUR	Undergraduate	Sample spaces, events, conditional probability, independence, Bayes' theorem, discrete random variables, probability distributions, probability mass functions, and cumulative distribution functions, mean and variance, binomial, geometric, negative binomial, hypergeometric, poisson distributions, continuous random variables and density functions, cumulative distribution, mean and variance, continuous uniform, normal, exponential, erlang, gamma, weibull, lognormal, beta distributions, joint probability distributions, marginal distributions, conditional distributions, independence, covariance and correlation, multinomial, bi-variate normal distributions.
IE1203335	Systems Analysis	3	Fall	Assoc. Prof. Dr. Ahmet SARUCAN	Undergraduate	System design and environment, information systems, lineer cycle problem solving, data gathering, data flow diagrams, data description, advanced modeling techniques, new system design, process design, database design, practical design methods alternative solution methods, strategic planning, detailed system design.
IE1203433	Operations Research-2	6	Spring	Assist. Prof. Dr. Alper DÖYEN	Undergraduate	Modeling by integer programming (capital budgeting, fixed-charge, set covering, bin packing, traveling salesman, vehicle routing problems), modeling "either-or" and "if-then" constraints, linearization techniques for nonlinear functions (for maxmin or minmax type models, absolute value terms, and piecewise linear functions), GAMS modelling language, non-preemptive and preemptive goal programming, network models (minimum spanning tree, shortest path, maximum flow, minimum cost network flow problems) solving combinatorial optimization problems by branch and bound method, dynamic programming, game theory (saddle point and strictly determined games, games with mixed strategies and solving these games by linear programming), Markov chains.
IE1203434	Engineering Statistics	5	Spring	Assist. Prof. Dr. Ece ÇETİN YAĞMUR	Undergraduate	Introduction to statistics, measures of central tendency and variability, sampling distibution, statistical estimation, statistical hypothesis testing, Z and t tests, nonparametric tests, regression analysis, variance analysis, time series, indexes.



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IE1203435	System Design	3	Spring	Assoc. Prof. Dr. Ahmet SARUCAN	Undergraduate	General systems theory and its history, system design and environment, typical information systems, problem-solving steps, problem definition, feasibility study, system analysis, system design, system implementation, data collection, starting a project, information system development tools, data flow diagram and sample applications, pseudocode, decision trees, decision tables, description of data, advanced modeling techniques, process definitions, object-oriented methodology.
IE1203502	Production Planning and Control-1	5	Fall	Prof. Dr. Yakup KARA	Undergraduate	Production planning and control system, strategic planning and manufacturing strategies, learning curves, product design, product life cycle, demand forecasting (Causal Models, Time Series), aggregate production planning (Tableau Method, Linear Programming Models, Dynamic Programming Models), master production scheduling (MPS), materials requirements planning (MRP), lot sizing, capacity requirements planning (CRP), production activity control and purchasing.
IE1203515	Quality Control	4	Fall	Prof. Dr. Orhan ENGİN	Undergraduate	General quality concepts, quality philosophy and management strategies, cost of quality control, use of statistical methods for quality control and improvement, control charts for variables, control charts for attributes, cumulative sum and exponentially weighted moving average control charts, exponentially weighted moving average control charts, process monitoring and control techniques, acceptance sampling, single and multiple acceptance sampling, acceptance sampling plans.
IE1203516	Mathematical Modeling and Solving	4	Fall	Prof. Dr. İsmail KARAOĞLAN	Undergraduate	Introduction and basic concepts, importance of linearity in mathematical models, modeling sample problems related to linear programming, modeling sample problems related to integer programming, modeling sample problems related to mixed integer programming, expressing and understanding models with multi-index decision variables and parameters in closed form, solution and analysis of sample models using Microsoft Excel add-ins such as Excel Solver or Open Solver etc., solution and solution analysis of sample models using GAMS package program.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

IE1203519	Project Management	4	Fall	Assoc. Prof. Dr. M. Emin BAYSAL	Undergraduate	Introduction to project management and basic terminology, organization structures in projects, project selection and evaluation, project management knowledge areas/project management process groups, project initiation processes, planning processes, execution processes, monitoring and controlling processes, closing processes, post project evaluation and lessons learned, project presentations.
IE1203602	Production Planning and Control -2	5	Spring	Prof. Dr. Yakup KARA	Undergraduate	Machine loading, job sequencing and scheduling (flow shop scheduling algorithms, job shop scheduling algorithms), manufacturing/assembly line balancing (single-model assembly line balancing models, mixed-model assembly line balancing algorithms, U-line balancing algorithms), project planning and scheduling (CPM, PERT), inventory management - inventory control policies, inventory management - static and deterministic models, inventory management - discount models, inventory management - dynamic deterministic models, inventory management - stochastic models.
IE1203604	Plant Layout And Design	5	Spring	Prof. Dr. İsmail KARAOĞLAN	Undergraduate	Introduction to facility location selection, single facility site selection in continuous space, multi-plant site selection in discrete space, heuristic methods used in facility location selection, introduction to facility layout, tools and required data, mathematical models and other methods, computer aided heuristics.
IE1203609	Analytical Decision Making in Management	4	Spring	Assoc. Prof. Dr. Ahmet SARUCAN	Undergraduate	Basic concepts in decision making, the classification of decision problems, decision making under risk, expected value, expected loss of opportunity, most likely event, target level methods, decision trees, decision making under uncertainty, decision making under certainty, multi-criteria decision making, simple additive weighting and weighted product methods, AHP method, TOPSIS method, weighting methods, application and discussion of decision problems to real life problems.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

IE1203614	Network Optimization	4	Spring	Assist. Prof. Dr. Alper DÖYEN	Undergraduate	Introduction and basic concepts, minimum spanning tree problem, shortest route problem, transportation problem - transportation table, transportation problem - initial solutions (north-west corner method, minimum cost method, Vogel approximation method), transportation problem - transportation simplex (MODI) Method, transshipment problem, maximum flow problem, minimum cost flow problem, assignment problem, Königsberg Bridges problem - Euler network, The Chinese Postman problem, solution of network models using package programs.
IE1203620	Simulation	5	Spring	Prof. Dr. S. Erhan KESEN	Undergraduate	Introduction to simulation, simulation examples in a spreadsheet, general principles, simulation software, statistical models in simulation, queueing models, random-number generation, random-variate generation, input modeling, estimation of absolute performance, estimation of relative performance, developing simulation model using Siman/Arena.
IE1203701	Lean Production	3	Fall	Prof. Dr. Yakup KARA	Undergraduate	Introduction to production systems, competing with production, decision making in production systems, lean production, seven types of waste, value chain components, value chain mapping, lean production techniques, standards, 5S, visual management, kaizen, just-in-time production, flow, pull system, Heijunka, SMED, quality assurance network, quality at the source, Jidoka, Poka Yoke, problem solving techniques, PDCA, seven quality tools, process production capability, total productive maintenance, TPM losses, overall equipment effectiveness (OEE), TPM components.
IE1203713	Enterprise Resource Planning	4	Fall	Prof. Dr. Yakup KARA	Undergraduate	History and terminology of ERP systems, components and features of ERP systems, ERP software market and selection process, implementation of ERP systems and critical success factors, human resources management using ERP Software, customer relationships management using ERP software, materials management using ERP software, production planning and MRP using ERP software, production activity control using ERP software (orders, reports, etc.), quality management using ERP software, maintenance management using ERP software, integration of ERP and MES systems.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

IE1203717	Engineering Economy	3	Fall	Assist. Prof. Dr. Gözde CAN ATASAGUN	Undergraduate	Economic analysis and evaluation for investment projects, subject and basic concepts of engineering economics, interest and time value of money, simple, compound, nominal, effective and real interest rate, cash flow series, single, uniform, gradient and irregular payment series, evaluation of investment projects alternatives, present worth, future worth, annual worth method, internal rate of return, benefit/cost ratio, payback period method, replacement analysis, the effect of inflation on cash flows, depreciation and its effect on investments, after-tax economic analysis, sensitivity and risk analysis.
IE1203719	Scheduling	4	Fall	Prof. Dr. S. Erhan KESEN	Undergraduate	Single machine models, the total weighted completion time, maximum lateness, the number of tardy jobs, the total tardiness (dynamic programming), Parallel machine models: the makespan with and without preemptions, the total completion time with and without preemptions, due date related objectives, flow shop models: unlimited and limited intermediate storage, job shop models: disjunctive programming and branch&bound, the shifting bottleneck heuristic and the makespan, open shop models: the makespan with and without preemptions.
IE1203720	Heuristic/Metaheuristic Methods	4	Fall	Prof. Dr. İsmail KARAOĞLAN	Undergraduate	Optimization concept, heuristic methods, constructive heuristics for the traveling salesman problem and vehicle routing problem, neighborhood search mechanisms (i.e. swap, insert, swap range), evaluation steps for neighborhood search mechanisms, hill climbing method, introduction to meta-heuristic methods, simulated annealing, tabu search, ant colony optimization, variable neighborhood search algorithm, genetic algorithm, memetic algorithm.
IE1203723	System Thinking	2	Fall	Prof. Dr. S. Erhan KESEN	Undergraduate	Learning in and about complex systems, system dynamics in action, the modeling process, structure and behavior of dynamic systems, causal loop diagrams, stocks and flows, dynamics of stocks and flows, closing the loop, dynamics of simple structures, S-shaped growth, epidemics, innovation diffusion, and growth of the new products, path dependence and positive feedback, delays, coflows and aging chains, modeling decision making,



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IE1203803	Management Information Systems	3	Spring	Assoc. Prof. Dr. Ahmet SARUCAN	Undergraduate	System and system concepts, decision making in management, information systems, computer-based information systems, decision support systems, office automated systems, artificial intelligence and expert systems, executive management support systems, data processing systems, management information systems, information system development tools, database design and management, relational database design, sources of data and data management, database models, system development lifecycle, prototyping, application software packages, end user development, communication and network systems, network topologies, communication network types.
IE1203804	Productivity Analysis	3	Spring	Assoc. Prof. Dr. M. Emin BAYSAL	Undergraduate	Main productivity concepts, ratio analysis, regression analysis, productivity measurement using mathematical models, green productivity, green productivity application steps, green productivity techniques, green productivity tools, sustainable productivity applications, green productivity applications in Türkiye, case study presentations.
IE1203810	Quality Assurance Systems	4	Spring	Prof. Dr. Orhan ENGİN	Undergraduate	ISO management systems, introduction of ISO 14001 environmental management system, analysis of ISO 14001 environmental management system standard, introduction to ISO 14001 environmental management system, introduction to ISO 9001 quality management system, ISO 9001 quality management system user manual and terms, context of organization, leadership, policy, quality policy, planning, support, operation, performance evaluation, continuous improvement.
IE1203816	Inventory/Warehouse Management	4	Spring	Prof. Dr. S. Erhan KESEN	Undergraduate	Deterministic single-item models with static demand, multiple items and constraints, quantity discounts: all-units discounts, quantity discounts: incremental discounts, stochastic single-period models, periodic review models: multiperiod models with no fixed ordering cost, periodic review models: multiperiod models with a fixed ordering cost, continuous review models: a heuristic treatment of the fixed reorder quantity policy with lost sales.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

<b>DEPARTMENT: GEOMATICS ENGINEERING</b>						
<b>CODE</b>	<b>COURSE</b>	<b>ECTS</b>	<b>SEMESTER</b>	<b>PROFESSOR</b>	<b>LEVEL OF EDUCATION</b>	<b>COURSE CONTENT</b>
1205432	Introduction to Geodesy	3	Spring	Prof. Dr. Muzaffer KAHVECİ	Undergraduate	Geodetic concepts, aim and scope of geodesy, coordinate systems, conversion between coordinate systems, solution of basic geodetic problems
1205538	Country Surveying	3	Fall	Prof. Dr. Muzaffer KAHVECİ	Undergraduate	Ellipsoidal geodesy, Conversion between plane and ellipsoidal coordinates, Solution of geodetic triangles, Projection systems and their characteristics, Gauss-Krueger
1205745	DGNSS and RTK CORS Networks	3	Fall	Prof. Dr. Muzaffer KAHVECİ	Undergraduate	GPS, GNSS, SBAS, GBAS concepts, RTK and Net-RTK, GNSS and DGNSS Data Transfer Protocols, International standards for DGNSS and RTK data transfer and internet protocols, VRS, FKP, MAC, CORS Networks
1205733	COORDINATE SYSTEMS	3	Fall	Prof. Dr. Ekrem TUŞAT	Undergraduate	Fundamentals of Geodetic Coordinate Systems. Learning coordinate systems applications. Knowing basic coordinate systems, and capability to make coordinate transformation between coordinate systems. With learning of coordinate systems in geodesy Learning of relations between coordinate systems and making transformation.
1205814	Satellite Geodesy	5	Spring	Prof. Dr. Muzaffer KAHVECİ	Undergraduate	Basic concepts in satellite geodesy, GPS, GNSS, GNSS Segments-Signals-receivers-antennas, Error Sources Affecting GNSS Observations, Positioning Methods Using GNSS, GNSS Coordinate Systems , Time Systems in GNSS
8223001011	Geodetic Applications in Polar Regions	5	Spring	Assist. Prof. Dr. Emel ZERAY ÖZTÜRK	Master	Polar Regions interaction with climate and sea level, Ice sheet mass balance, Satellite gravimetry technique, Satellite altimeter technique, Glacial Isostatic Adjustment (GIA)



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

8223001009	Microwave Sensor Systems in Remote Sensing	5	Spring	Assoc. Prof. Dr. Hasan Bilgehan MAKİNECİ	Master	The aim of this course is to teach the basic concepts of microwave sensing systems. Its objectives are to explain the use of radar data in remote sensing, to make visual evaluations and analyzes of SAR data, and to achieve data interpretation skills.
8223001010	Multispectral, Hyperspectral and Thermal Sensor Systems	5	Fall	Assoc. Prof. Dr. Hasan Bilgehan MAKİNECİ	Master	This course aims to train the working principles of different spectrum sensing systems and to explain how they are used in remote sensing techniques. Its purposes are to demonstrate the use of multispectral, hyperspectral, and thermal sensor data in remote sensing, to make visual evaluations of data, metric analysis, and to gain the ability to interpret data.

## DEPARTMENT: CIVIL ENGINEERING

CODE	COURSE	ECTS	SEMESTER	PROFESSOR	LEVEL OF EDUCATION	COURSE CONTENT
Not Available	Application of Hydraulic Engineering Design	12	-	Assoc. Prof. Dr. Alpaslan YARAR	Undergraduate	This course that the basis of computation and sizing of Ogee Spilway, physical and numerical modelling of this structure and evaluation of the results.
Not Available	Application of Structural Engineering Design	12	-	Prof. Dr. Bahadır YÜKSEL	Undergraduate	This course that the basis of analysis and design of Reinforced Concrete Structures and modelling of this structure and evaluation of the results.
Not Available	Non-Linear Analysis of Structures	5	-	Prof. Dr. Bahadır YÜKSEL	Graduate	This course covers the calculation of member forces at collapse and Non-linear analysis of structures



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Not Available	Seismic Assessment of Reinforced Concrete Buildings	5	-	Prof. Dr. Bahadır YÜKSEL	Graduate	This course covers the methods used for the seismic assessment of reinforced concrete buildings
Not Available	Advanced Hydrology	5	-	Assoc. Prof. Dr. Alpaslan YARAR	Graduate	How much of the precipitation can flow into the flow and the effect of the hydrograph created by this flow on water resources facilities will be explained.

### DEPARTMENT: GEOLOGICAL ENGINEERING

CODE	COURSE	ECTS	SEMESTER	PROFESSOR	LEVEL OF EDUCATION	COURSE CONTENT
1207415	Optical mineralogy	3	Spring	Prof. Dr. Kerim KOÇAK	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cezelhmGazC8rUdPNT4pKV4%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cezelhmGazC8rUdPNT4pKV4%3D</a>
1207514	Igneous rock petrography	4	Fall	Prof. Dr. Huseyin KURT	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cVznQlni%20a8Wq1IaiTDG%2FPo%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cVznQlni%20a8Wq1IaiTDG%2FPo%3D</a>
1207612	Metamorphic rock petrography	4	Spring	Prof. Dr. Kerim KOÇAK	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cWAs9Kol1NVFYPfvkFCAUqo%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cWAs9Kol1NVFYPfvkFCAUqo%3D</a>
1207720	Seminary	4	Fall	Prof. Dr. Kerim KOÇAK	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cYNP9lx7WaupKqw71Ulp4uY%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cYNP9lx7WaupKqw71Ulp4uY%3D</a>



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1207717	Design in geological engineering-1	3	Fall	Prof. Dr. Kerim KOÇAK	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cRctXkoODBvZNUpLxi7Yhto%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cRctXkoODBvZNUpLxi7Yhto%3D</a>
1207535	Environmental Geology	5	Fall	Prof. Dr. Kerim KOÇAK	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cYEBpZOy6OK8tSeJ%2FWp7Jss%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cYEBpZOy6OK8tSeJ%2FWp7Jss%3D</a>
1207638	Global tectonic and earthquakes	5	Spring	Assoc. Prof. Dr. Rahmi Aksoy	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cV4DWlppSRII8B1nf4OahJA%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cV4DWlppSRII8B1nf4OahJA%3D</a>
1207513	Geological mapping	5	Fall	Assoc. Prof. Dr. Rahmi Aksoy	Undergraduate	<a href="https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cbR0RDVD5jgkRDQEuwSsq6U%3D">https://www.ktun.edu.tr/en/Birim/DersIcerik?brm=OQSdhgTO5w3Kmk9trG82cbR0RDVD5jgkRDQEuwSsq6U%3D</a>

## DEPARTMENT: MINING ENGINEERING

CODE	COURSE	ECTS	SEMESTER	PROFESSOR	LEVEL OF EDUCATION	COURSE CONTENT
1209304	Strength of materials	4	Fall	Prof.Dr. M.Kemal Gökay	Undergraduate	-
1209501	Rock Mechanics-2	4	Fall	Prof.Dr. M.Kemal Gökay	Undergraduate	-
1209710	Geophysical measurements in mining	3	Fall	Prof.Dr. M.Kemal Gökay	Undergraduate	-



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1209701	Mine Excavation and Mechanization	4	Fall	Prof. Dr. Niyazi BİLİM	Undergraduate	-
1209804	Mining Machinery	4	Spring	Prof. Dr. Niyazi BİLİM	Undergraduate	-
1209712	Automation In Mining (Elective Course)	5	Fall	Dr. Emre KARAKAYA	Undergraduate	-
1209704	Flotation	4	Fall	Asst. Prof. Dr. Hasan Ali Taner	Undergraduate	-
1209431	Mineral Deposits	5	Spring	Asst. Prof. Dr. Hasan Ali Taner	Undergraduate	-
1209717	Mineral Processing Grinding Equipment (Elective Course)	4	Fall	Asst. Prof. Dr. Hasan Ali Taner	Undergraduate	-
1209813	Mineral Processing in Recycling (Elective Course)	4	Spring	Asst. Prof. Dr. Hasan Ali Taner	Undergraduate	-
1209502	Haulage & Drainage in Mining	4	-	Prof. Dr. Bilgehan Kekeç	Graduate	Classification of haulage systems. Chain conveyor system and calculations. Belt conveyor systems and calculations. Rail haulage systems and calculations, rope haulage systems and calculations. The importance of drainage, drainage facilities, pumps, pump combinations.



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

8227011007	Quantitative decision making methods in mining	5	Fall	Prof.Dr. M.Kemal Gökay	Graduate	-
8227011011	Fracture mechanics in rock and solid materials	5	Fall	Prof.Dr. M.Kemal Gökay	Graduate	-
8127011051	Underground depositories and their design works	6	Fall	Prof.Dr. M.Kemal Gökay	Graduate	-
8227001009	Micronized Grinding	5	Spring	Asst. Prof. Dr. Hasan Ali Taner	Graduate	-
8227001011	Rare Earth Elements and Enrichment	5	Fall	Asst. Prof. Dr. Hasan Ali Taner	Graduate	-
8227001008	Response Surface Methods in Mineral Processing	5	Spring	Asst. Prof. Dr. Hasan Ali Taner	Graduate	-



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

<b>DEPARTMENT: MECHANICAL ENGINEERING</b>						
<b>CODE</b>	<b>COURSE</b>	<b>ECTS</b>	<b>SEMESTER</b>	<b>PROFESSOR</b>	<b>LEVEL OF EDUCATION</b>	<b>COURSE CONTENT</b>
Not Available	[ME] Calculus I	6	Fall	Faculty Members	Undergraduate	Available on the Website
Not Available	[ME] Physics I	5	Fall	Faculty Members	Undergraduate	Available on the Website
1210185	[ME] Computer Aided Technical Drawing I	5	Fall	Asst. Prof. Dr. Osman ÖZTÜRK	Undergraduate	Available on the Website
1210381	[ME] Material Science I	3	Fall	Assoc. Prof. Dr. M. Hüseyin ÇETİN	Undergraduate	Available on the Website
1210382	[ME] Material Science II	6	Fall	Assoc. Prof. Dr. M. Hüseyin ÇETİN	Undergraduate	Available on the Website
1210383	[ME] Strength of Materials	5	Fall	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website
1210386	[ME] Manufacturing Technologies	6	Fall	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website
1210389	[ME] Dynamics	5	Fall	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1210581	[ME] Dynamics of Machinery	4	Fall	Asst. Prof. Dr. Abdullah ÇAKAN	Undergraduate	Available on the Website
1210582	[ME] Machine Elements I	5	Fall	Assoc. Prof. Dr. Muhammet Hüseyin ÇETİN	Undergraduate	Available on the Website
1210583	[ME] Fluid Mechanics I	4	Fall	Assoc. Prof. Dr. Sercan DOĞAN	Undergraduate	Available on the Website
1210584	[ME] Thermal Environmental Engineering	6	Fall	Asst. Prof. Dr. Ş. Ulaş ATMACA	Undergraduate	Available on the Website
1210586	[ME] Control Systems	3	Fall	Asst. Prof. Dr. Muhammed Arif ŞEN	Undergraduate	Available on the Website
1210587	[ME] Heat Transfer	5	Fall	Asst. Prof. Dr. Ş. Ulaş ATMACA	Undergraduate	Available on the Website
1210588	[ME] Fluid Mechanics II	3	Fall	Assoc. Prof. Dr. Muharrem Hilmi AKSOY	Undergraduate	Available on the Website
1210716	[ME] Thermal System Design	5	Fall	Asst. Prof. Dr. İlker GÖKTEPELİ	Undergraduate	Available on the Website
1210760	[ME] Mechanical Engineering Design I	6	Fall	Department Faculty Members	Undergraduate	Available on the Website



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1210771	[ME] Mechanical Engineering Design II	10	Fall	Department Faculty Members	Undergraduate	Available on the Website
1210784	[ME] Engineering Design	5	Fall	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website
1210788	[ME] Mechanical Behavior of Materials	5	Fall	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website
1210791	[ME] Introduction to Finite Element Methods	5	Fall	Prof. Dr. Ömer Sinan SAHİN	Undergraduate	Available on the Website
1210798	[ME] Occupational Health and Safety I	2	Fall	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website
1210307	[ME] Strength of Materials I	5	Fall	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website
1210889	[ME] Mechanical Engineering Design I	5	Spring	Department Faculty Members	Undergraduate	Available on the Website
1210280	[ME] Computer Aided Technical Drawing II	5	Spring	Asst. Prof. Dr. Osman ÖZTÜRK	Undergraduate	Available on the Website
1210403	[ME] Strength of Materials I	5	Spring	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1210412	[ME] Manufacturing Technologies	6	Spring	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website
1210480	[ME] Materials Science II	6	Spring	Assoc. Prof. Dr. Muhammet Hüseyin ÇETİN	Undergraduate	Available on the Website
1210681	[ME] Thermal Environmental Engineering	6	Spring	Asst. Prof. Dr. Ş. Ulaş ATMACA	Undergraduate	Available on the Website
1210683	[ME] Fluid Mechanics II	6	Spring	Assoc. Prof. Dr. Muharrem Hilmi AKSOY	Undergraduate	Available on the Website
1210809	[ME] Mechanical Engineering Design II	10	Spring	Department Faculty Members	Undergraduate	Available on the Website
1210823	[ME] Air Conditioning System Design	5	Spring	Asst. Prof. Dr. Ş. Ulaş ATMACA	Undergraduate	Available on the Website
1210824	[ME] Renewable Energy Systems	5	Spring	Assoc. Prof. Dr. Muharrem Hilmi AKSOY	Undergraduate	Available on the Website
1210856	[ME] Occupational Health and Safety II	2	Spring	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website



## COURSE LIST FOR EXCHANGE STUDENTS (2025/2026)

1210857	[ME] Occupational Health and Safety I	2	Spring	Asst. Prof. Dr. Yusuf YILMAZ	Undergraduate	Available on the Website
Not Available	[ME] Digital Photography	3	Spring	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website
Not Available	[ME] Refrigeration Technology	5	Spring	Asst. Prof. Dr. Oğuz ÇALIŞKAN	Undergraduate	Available on the Website
Not Available	[ME] Introduction to Composite Materials	5	Spring	Asst. Prof. Dr. Okan DEMİR	Undergraduate	Available on the Website
Not Available	[ME] Mechatronic Systems	5	Spring	Asst. Prof. Dr. Muhammed Arif ŞEN	Undergraduate	Available on the Website
Not Available	[ME] Technical English	2	Spring	Asst. Prof. Dr. Ömer İNCEBAY	Undergraduate	Available on the Website