Faculty	Department	Course Code	Name of teh Course	Instruction Language	Semester	ECTS number	Learning Outcomes	General Information	Requirements / Prerequisites for Students
Faculty of Engineering	Electrical Engineering	ELK203	Circuit Theory	Turkish	2nd year – Fall semester (3rd semester)	5	Analyses DC and AC circuits using basic circuit laws and theorems; applies node and mesh analysis; calculates power in AC circuits.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic electric circuits.
Faculty of Engineering	Electrical Engineering	ELK205	Electrical Circuits Laboratory	Turkish	2nd year – Fall semester (3rd semester)	4	Uses basic measurement instruments; builds and tests DC/AC circuits; compares measured results with theory and reports them.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic electric circuits.
Faculty of Engineering	Electrical Engineering	ELK305	High Voltage Engineering	Turkish	3rd year – Fall semester (5th semester)	4	Explains generation and measurement of high voltages; describes breakdown mechanisms in insulating materials; outlines high voltage testing.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Electromagnetic field theory.
Faculty of Engineering	Electrical Engineering	ELK315	Electrical Machines I	Turkish	3rd year – Fall semester (5th semester)	4	Explains magnetic circuits and transformer operation; analyses equivalent circuits of transformers and DC machines; evaluates their performance.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Circuit analysis, electromagnetism.
Faculty of Engineering	Electrical Engineering	ELK317	Electric Power Transmission	Turkish	3rd year – Fall semester (5th semester)	4	Calculates transmission line parameters; analyses short, medium and long lines; evaluates voltage regulation and losses.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Circuit analysis.
Faculty of Engineering	Electrical Engineering	ELK319	Digital Electronics	Turkish	3rd year – Fall semester (5th semester)	4	Uses number systems and Boolean algebra; designs combinational and sequential logic circuits; describes basic digital integrated circuits.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Introduction to electronics.
Faculty of Engineering	Electrical Engineering	SD315	Signals and Systems	Turkish	3rd year – Fall semester (5th semester)	4	Classifies continuous and discrete-time signals and systems; applies convolution, Fourier and Laplace transforms to LTI systems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Differential equations.
Faculty of Engineering	Electrical Engineering	SD323	Automatic Control	Turkish	3rd year – Fall semester (5th semester)	4	Models dynamic systems with transfer functions; analyses time response and stability; designs basic controllers (e.g. PID).	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Differential equations.
Faculty of Engineering	Electrical Engineering	ELK411	Power System Analysis	Turkish	4th year – Fall semester (7th semester)	5	Represents power system components with per-unit models; performs load flow calculations; analyses symmetrical faults.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Electric power transmission.
Faculty of Engineering	Electrical Engineering	SD401	Electrical Machines Laboratory II	Turkish	4th year – Fall semester (7th semester)	4	Performs tests on AC machines; determines equivalent circuit parameters experimentally; reports and interprets results.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Electrical machines.
Faculty of Engineering	Electrical Engineering	SD405	Electrical Installations Laboratory	Turkish	4th year – Fall semester (7th semester)	4	Sets up basic low voltage installation, protection and measurement circuits; applies safety rules; reports experimental results.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic electric circuits.
Faculty of Engineering	Electrical Engineering	SD433	Design of Power Electronic Circuits	Turkish	4th year – Fall semester (7th semester)	4	Selects components for converter circuits; designs and simulates basic DC-DC and AC-DC converters; evaluates their performance.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Power electronics.
Faculty of Engineering	Electrical Engineering	SD445	Industrial Automation	Turkish	4th year – Fall semester (7th semester)	4	Describes components of industrial automation systems; writes basic PLC programs; explains sensors, actuators and industrial communication.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Digital electronics.
Faculty of Engineering	Electrical Engineering	SD457	Electric Power Distribution	Turkish	4th year – Fall semester (7th semester)	4	Describes structure of distribution networks; calculates voltage drop and losses; explains basic planning and protection of distribution systems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Circuit analysis.
Faculty of Engineering	Electrical Engineering	SD461	Power System Stability	Turkish	4th year – Fall semester (7th semester)	4	Explains rotor angle and voltage stability concepts; applies the swing equation and equal-area criterion; evaluates factors affecting stability.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Power system analysis.

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Faculty of Engineering	Electrical Engineering	ELK102	Programming with C	Turkish	1st year – Spring semester (2nd semester)	4	Writes simple C programs using variables, control structures, loops, arrays and functions; develops algorithms for basic engineering problems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements.
Faculty of Engineering	Electrical Engineering	ELK110	Fundamentals of Electric Circuits	Turkish	1st year – Spring semester (2nd semester)	5	Explains basic circuit elements and laws; analyses simple DC circuits using Ohm's and Kirchhoff's laws and circuit theorems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements.
Faculty of Engineering	Electrical Engineering	ELK202	Circuit Analysis	Turkish	2nd year – Spring semester (4th semester)	5	Analyses transient behaviour of first and second order circuits; applies Laplace transform and two-port network analysis.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Circuit theory.
Faculty of Engineering	Electrical Engineering	ELK204	Introduction to Electronics	Turkish	2nd year – Spring semester (4th semester)	4	Explains semiconductor fundamentals; analyses diode and transistor (BJT, FET) circuits; describes basic amplifier configurations.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic electric circuits.
Faculty of Engineering	Electrical Engineering	ELK210	Electromagnetic Field Theory	Turkish	2nd year – Spring semester (4th semester)	4	Applies vector analysis to electrostatic and magnetostatic fields; uses Coulomb, Gauss, Biot-Savart and Ampère laws; explains Maxwell's equations.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Calculus, physics.
Faculty of Engineering	Electrical Engineering	ELK212	Electronics Laboratory	Turkish	2nd year – Spring semester (4th semester)	3	Builds and tests diode and transistor circuits; uses oscilloscope and signal generator; compares measurements with theory.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Introduction to electronics.
Faculty of Engineering	Electrical Engineering	ELK310	Electrical Machines II	Turkish	3rd year – Spring semester (6th semester)	4	Explains operating principles of induction and synchronous machines; analyses their equivalent circuits and torque-speed characteristics.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Electrical machines I.
Faculty of Engineering	Electrical Engineering	SD306	Microprocessors	Turkish	3rd year – Spring semester (6th semester)	4	Describes microprocessor/microcontroller architecture; writes simple programs; interfaces basic input/output devices.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Digital electronics.
Faculty of Engineering	Electrical Engineering	SD318	Artificial Intelligence	Turkish	3rd year – Spring semester (6th semester)	4	Explains basic AI concepts and search methods; applies simple machine learning and artificial neural network models to engineering problems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic programming.
Faculty of Engineering	Electrical Engineering	SD324	Electrical Machines Laboratory I	Turkish	3rd year – Spring semester (6th semester)	4	Performs tests on transformers and DC machines; determines their characteristics experimentally; reports results.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Electrical machines I.
Faculty of Engineering	Electrical Engineering	SD430	Lighting and Indoor Installation Laboratory	Turkish	4th year – Spring semester (8th semester)	7	Performs basic lighting calculations; designs simple indoor electrical installation projects; applies relevant standards and safety rules.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Basic electric circuits.
Faculty of Engineering	Electrical Engineering	SD434	Industrial Automation Laboratory	Turkish	4th year – Spring semester (8th semester)	7	Implements PLC-based control applications; wires and tests sensors and actuators; troubleshoots simple automation systems.	Laboratory course delivered in Turkish. Experiments are carried out in the department laboratories and laboratory reports are prepared.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Industrial automation.
Faculty of Engineering	Electrical Engineering	SD436	Protection Techniques in Electrical Installations	Turkish	4th year – Spring semester (8th semester)	7	Describes protection devices and relays; explains protection schemes for lines, transformers and generators; performs basic coordination.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Power system analysis.
Faculty of Engineering	Electrical Engineering	SD440	Fault Analysis Techniques	Turkish	4th year – Spring semester (8th semester)	7	Applies symmetrical components; calculates symmetrical and unsymmetrical fault currents in power systems.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Power system analysis.
Faculty of Engineering	Electrical Engineering	SD444	Power Quality in Electrical Power Systems	Turkish	4th year – Spring semester (8th semester)	7	Defines power quality problems such as harmonics, sags and flicker; explains their causes, measurement and mitigation methods.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Circuit analysis.

Faculty	Department	Course Code	Name of teh Course	Instruction Language	Semester	ECTS number	Learning Outcomes	General Information	Requirements / Prerequisites for Students
Faculty of Engineering	Electrical Engineering	SD448	Embedded Systems	Turkish	4th year – Spring semester (8th semester)	7	Describes embedded system architecture; programs microcontroller-based applications; interfaces sensors and communication modules.	Theoretical (lecture-based) course delivered in Turkish. Assessment is based on midterm and final evaluations; assignments or research topics may be given.	The course is taught in Turkish only; no English section is available. Erasmus students may be given assignments, a project or a research report by the course instructor. Students should contact the instructor at the beginning of the semester to agree on the course requirements. Recommended background: Microprocessors, basic programming.
Faculty of Engineering	Civil Engineering	SD462	KARAYOLU ÜST YAPI YÖNETİMİ - (PAVEMENT MANAGEMENT)	English	2026-2027 Spring	3	Can define the highway pavement network. Can conduct pavement condition survey and rating studies. Knows the non-destructive testing methods used in pavement evaluation. Can explain the concept of pavement roughness and its measurement methods. Knows data collection and evaluation methods regarding skid resistance. Can perform pavement condition prediction. Knows and can evaluate maintenance and rehabilitation methods. Can explain network-level pavement management and project planning approaches. Knows project-level pavement management. Can evaluate special pavement applications and traffic impacts. Can explain the applications and expected benefits of pavement management systems.	Within the scope of the course, the fundamental principles of highway pavement management systems, evaluation of pavement performance, definition of the pavement network, condition surveys, non-destructive testing methods, roughness and skid resistance measurements, pavement condition prediction models, maintenance and rehabilitation methods, and pavement management at the network and project levels are covered. The lectures are conducted through theoretical instruction, case studies, data evaluation exercises, and student presentations. Emphasis is placed on engineering approaches for evaluating the existing condition of pavements and determining appropriate maintenance/rehabilitation decisions.	none
Faculty of Engineering	Civil Engineering	SD457	BİTÜMLÜ KARIŞIM UYGULAMALARI - (BITUMINOUS MIXTURES APPLICATIONS)	English	2027-2028 Fall	3	Can perform basic tests on hot mix asphalt (bituminous hot mixtures). Can select the appropriate aggregate by performing aggregate tests for bituminous mixtures. Can perform basic bituminous binder tests and evaluate their results. Knows the types and causes of distresses (deteriorations) in bituminous mixtures. Can explain asphalt plant types and their working principles. Knows the transportation, laying, compaction, and quality control stages of bituminous mixtures and can apply the necessary tests. Can perform bituminous mixture design in the laboratory using the Marshall method. Can report and evaluate Marshall design results. Can perform the indirect tensile moisture damage test and interpret its results.	This is an applied course in which theoretical lectures and laboratory practices are conducted together. Pavement layers, hot mix asphalt components, aggregate and bitumen tests, bituminous mixture design using the Marshall method, asphalt plants, and production, transportation, laying, compaction, and quality control processes are addressed. In laboratory sessions, practical applications are carried out on aggregate sieve analysis, specific gravity tests, preparation of Marshall specimens, Marshall stability-flow tests, and the evaluation of test results.	none
Faculty of Engineering	Mining Engineering	MAD211	Materials Science	Turkish/English	Fall	3	Knows the atomic structure, calculates the energy of the photon emitted or absorbed during electron transitions between orbitals, defines the strong and weak chemical bonds holding atoms together and relates these chemical bonds to the properties of the material, and knows the differences among metal, ceramic, polymer, and composite materials. Knows the difference between crystalline and amorphous materials, defines crystal systems, defines the relationship between the lattice parameter and atomic radius in materials with a cubic crystal system, draws an atomic plane given its Miller indices within a cubic unit cell, calculates the theoretical densities of materials depending on the crystal system, and explains how crystalline solids and minerals are identified via XRD analysis. Defines existing or subsequently formed crystal defects in materials, determines the number of atomic vacancies that may form depending on heat treatment, and knows the formation mechanisms of substitutional and interstitial solid solutions in metal alloys. Knows how atomic diffusion occurs in solids and performs calculations according to Fick's laws for diffusion process design. Knows how the mechanical (tensile and compressive) strengths of solid materials are measured and plots the corresponding stress-strain curve, and determines the modulus of elasticity, yield strength, tensile strength, fracture strength, and ductility of the material from a stress-strain curve plotted after a tensile test. Knows how to read binary phase diagrams, particularly for metal alloys, and what kind of information can be obtained from them, and defines the microstructures of materials.	Providing instruction and conducting practical exercises	none
Faculty of Engineering	Mining Engineering	MAD-5014	Investigation of Surface Properties of Minerals	Turkish/English	Fall	5	Knows and explains concepts related to surface chemistry such as surface, interface, surface tension, surface free energy, contact angle, hydrophobicity (water-repellency), and wettability. Explains the surface tension of liquids, and knows and describes by which methods and how it is measured. Measures the surface tension of liquids. Knows and determines how the droplet contact angle, which is an indicator of the wettability of solids by liquids, is determined. Explains the Young equation. Knows and explains the factors affecting the contact angle. Knows and explains contact angle measurement methods for flat-surfaced and powdered solids. Explains the fundamental causes of the surface energy of solids. Explains how and by which methods the surface energy of solids is determined. Determines the surface energy of solids. Knows and explains the factors affecting the determination of surface energy.	Providing instruction and conducting practical exercises	none
Faculty of Engineering	Mining Engineering	MAD-5008	Stability of Clay-Water Colloidal Systmes	Turkish/English	Spring	5	Explains and applies the mechanisms that provide stability in solid-liquid colloidal/nano suspensions. Calculates the electrical double-layer repulsion and van der Waals attraction forces between colloidal/nano particles in a liquid using the DLVO equation. Measures the zeta potential of solid particles in a liquid and explains the measurement techniques. Explains the mechanisms that destabilize colloidal/nano suspensions (coagulation and flocculation). Knows the chemicals used as dispersants and their general structures. Knows and defines Non-DLVO forces (hydrophobic attraction, steric repulsion, magnetic attraction, hydration repulsion). Recognizes nano-colloidal systems and classifies solids according to particle size.	Providing instruction and conducting practical exercises	none
Faculty of Engineering	Mining Engineering	MAD-6048	Flotation Chemistry	Turkish	Fall/Spring	5	Will be able to carry out industrial applications of the processes learned in detail for industrial minerals. Mechanisms of flotation. Flotation particle-reagent interactions. Adsorption mechanisms of reagents used in flotation at various interfaces. The role of the mineral's crystal structure and reagents in the flotation properties of minerals.	Electrical double-layer models, surface tension and contact angle, adsorption models, adsorption thermodynamics, interpretation of heats of adsorption, flotation mechanisms of various minerals, natural hydrophobicity and coal flotation, flotation of fine-sized particles; flotation hydrodynamics.	