



SAKARYA UNIVERSITY OF APPLIED SCIENCES
FACULTY OF TECHNOLOGY
CIVIL ENGINEERING DEPARTMENT COURSE CONTENTS

I.SEMESTER

TUR 101 Turkish Language (4+0) 4 AKTS
Characteristics of Turkish Language in terms of structure and meaning, basic works, expressing himself/herself in society, ways of using the language more effective and accurate.
MAT 111 Mathematics I (4+0) 6 AKTS
Fundamental conceptions of mathematical analysis, set and number conceptions, functions and special functions, sequence of real numbers, convergence, upper and lower limits, properties of continuous functions, derivative, higher order derivative, geometric and physical meaning of the derivative, theorems related with derivative, indefinite limits, drawing curves
FIZ 111 Physics I (3+2) 6 AKTS
Physics and measurement, Motion in one dimension, Vectors, Motion in two dimension, Rules of Motion, Circular Motion, Work and Kinetic Energy, Potential Energy and Conservation of Mechanical Energy, Linear Momentum and Collisions, Rotation of a Rigid Body around an axis. Rolling Objects and Angular Momentum, Static Equilibrium and a Rigid Body, Gravity Oscillation and Waves.
KIM 111 Chemistry (3+2) 6 AKTS
Chemical principles and their application. Includes stoichiometry, states of matter, atomic and molecular structure, chemical bonds, solutions, thermodynamics, equilibrium, oxidation-reduction, kinetics, gases, nonmetals, metals and coordination compounds, and nuclear chemistry.
INS 101 Introduction to Civil Engineering (2+0) 2 AKTS
The history of civil engineering, construction on the Identification, science technology and engineering, Laboratories of the experiments with working areas of civil engineers, standardization, feasibility, design and application of building materials, construction methods, professional associations and codes of ethics, the future of the construction sector, building construction activities, civil engineering, education and training, legal regulations related with the structure, development and procurement regulations, laws and regulations related to construction engineering . Construction materials and building systems are introduced, construction engineering, mechanical, structural engineering, hydraulic engineering, transportation engineering, geotechnical engineering, civil engineering materials, civil engineering, public and private sector after graduation.
INS 103 Engineering Drawing (3+1) 6 AKTS
Basic drawing equipment and procedures, Drawing geometry and simple geometric drawings, Pictorial Drawing (isometric and perspective drawing), Structural Drawings (plans, sections and views)

II.SEMESTER

ING 190 English (4+0) 4 AKTS
English grammar, vocabulary, reading comprehension, oral production and writing skills in order to help students follow occupational English courses in next years and prepare them for learning English further after university and in professional life.
MAT 112 Mathematics II (4+0) 6 AKTS
Indefinite integral, methods of the indefinite integrals, Properties of the Riemann integral and related theorems, Applications of Riemann integral (Calculation of Area, length of arc, volume and surface area), The Generalized integrals and properties.
FIZ 112 Physics II (3+2) 6 AKTS
Coulombs force, the electric field, electric flux, Gauss law, electric potential, capacitors, current and resistivity, direct current circuits, Kirchhoffs rules, magnetic field, Biot-Savarts law, Amperes law, induction, Faradays law, Lenz law, inductance, energy in magnetic field, oscillations in the LC circuit, electromagnetic waves.



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TKN 121 Probability and Statistics (3+0) 6 AKTS
Basic notions, presentation of data with statistical series and graphics, Central tendency measures, Deviation measures, skewness and kurtosis measures, Set theory, counting techniques and probability rules, Probability distributions, Discrete and continuous probability distributions
INS 102 Computer Aided Design (2+1) 3 AKTS
To draw building plans, sections, views, detail drawings and three-dimensional structures using the necessary softwares.
INS 104 Material Science and Laboratory (3+1) 5 AKTS
Types of materials according to their usage areas, physical and chemical structures, Atomic structure of the material, bonds between atoms, internal structure of the substance, the effects of the microstructure on material classes, Internal forces and stresses, Wear, impact, hardness, fatigue, creep and fracture behavior of materials. Preparing work safety precautions and test materials and equipment, determining the unit weight, specific gravity, porosity, compactness, water absorption, capillarity, permeability, saturation degree and hardness values of the materials, Determination of tensile, compression, impact, bending and rupture strength, Elastic modulus Calculation of properties related to Poisson ratio and unit deformations, drawing and interpretation of graphics and preparation of technical reports.

III. SEMESTER

TKN 221 Linear Algebra (3+0) 6 AKTS
Solution of linear equations systems (Cramer, inverse matrix, reducing the normal form), matrix and determinant operations, eigenvalues and eigenvectors of the matrix, linear transformations in linear spaces.
TKN 225 Diferantial Equations (4+0) 6 AKTS
Basic concepts and classifying differential equations, First-order diffential equations and their engineering applications, Second and higher order differential equations and engineering applications, Power series solutions of linear equations with variable coefficients, Systems of linear differential equations: Scalar and Matrix methods, Laplace tranformations, Numerical methods for ordinary differential equations.
INS 201 Mechanics (3+1) 5 AKTS
Equations of equilibrium, Result of forces, Separation into components, moments of plane and space forces, center of gravity of two-dimensional objects, moments of inertia of sections, reaction forces of plane carrier systems, internal forces, rod forces of truss systems.
INS 203 Construction Materials And Laboratory (3+2) 5 AKTS
Binders, natural and artificial wood materials, Soil materials, paints and varnishes, plastics, glass, metals, properties of natural and artificial stones. Concrete and mixing elements, cements, aggregates, water, chemical and mineral additives. Workability, strength, durability, water permeability, elasticity properties. Factors affecting concrete properties. Concrete mixture calculation, determination of the amount of additives. Occupational safety measures, test materials and equipment, physical, chemical and mechanical tests of cements. Aggregate, consistency in fresh concrete, air percentage, unit weight, dosage determination experiments. Coring, strength and endurance tests in hardened concrete. Making calculations related to experiments and preparing technical reports.
INS 207 Construction Technology I (3+2) 5 AKTS
Work safety measures, forming rope scaffolding, wooden formwork systems and properties, classical wooden columns, beams, flooring, and ladder formwork calculations and molds, preparing and placing columns, beams and flooring reinforcement to the wooden formwork.
FT-MAC TECHNICS ELECTIVE



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III. SEMESTER TECHNICS ELECTIVE COURSE PLAN

INS 223 Engineering Economy (3+0) 3 AKTS
Main parts of the course content: (a) determination and formulation of engineering problems (b) analyzing the problem (c) investigating potential solutions (d) identifying alternative solutions (e) determining the most feasible solution.
INS 215 Isolation Techniques (3+0) 3 AKTS
The importance of insulation in buildings. Types of insulation, heat, water, steam, noise, vibration and fire insulation. Properties of insulating materials, the technological, physical, chemical and mechanical properties. Isolation procedures, tools and equipment. Isolation techniques for the preparation of the surfaces. Details of the isolation of different parts of the structure.
INS 217 Intelligent Building Technologies (3+0) 3 AKTS
Smart buildings used in the logic and technology, Intelligent building automation and use, smart buildings used in electronic vehicles, smart buildings used in the electrical wiring system, intelligent building used in the security system, intelligent building energy-efficient effect.
INS 219 Structural Design Architecture (3+0) 3 AKTS
Structure design spaces with norms teach drawing application
INS 221 Building Physics (3+0) 3 AKTS
Building physics concepts, the physical-chemical reasons for the events of building physics, building physics events that occur in buildings, insulation measures to be taken against the events of construction physics, calculations of the thermal insulation in buildings, the selection of appropriate materials to teach the principles of the calculation.

IV. SEMESTER

ATA 202 Princ.Of Atatürk And History of Turkish Revolution (4+0) 4 AKTS
Events, thoughts and principles in the rise and development process of Modern Turkey
INS 202 Numerical Analysis (4+0) 6 AKTS
Modeling techniques for engineering problems, explicit methods of finding the roots of equations, solutions of linear equation sets, interpolation and engineering applications
INS 204 Strength of Materials (4+1) 5 AKTS
Basic concepts, Stress Analysis, Normal Force State, Torsion, Simple Bending State, Compound Flexural State, Shear Flexural, Mohr's Circle, Stress-Strain Relations, Displacement methods (Integration, Moment Field, Energy Methods).
INS 210 Construction Technology Applications II (3+2) 5 AKTS
Types of masonry, masonry building construction rules, types of surface preparation and adhesive mortar plaster and principles appropriate to these surfaces, coarse, fine, plastering the wall with plaster and insulation operations, leveling concrete, screed, lean concrete, masonry floor coverings, floor insulation operations, reading of concrete projects, concrete reinforcement elements (hook, stirrup, pilye, etc.). preparation and binding, with equipment to control the project and according to specifications, concrete mixing, handling, placement and compaction procedures done in practice.
INS 208 Geology (3+0) 6 AKTS
Introduction-Earth's building materials-Igneous rocks-Sedimentary rocks-Metamorphic rocks-Primary and secondary structures of rocks-Topographic maps and cross sections-Geological maps and cross sections-Slope stability-Earthquakes-Stone quarries-Groundwater geology-Tunnelling geology and structures under ground-Dams and reservoir geology.



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INS 206 Structural Analysis I (3+0) 4 AKTS

General concepts, analysis of statically determinate simple structure systems subjected to static loads, determination of internal forces, drawing internal force diagrams, analysis against moving loads, influence lines.

V. SEMESTER

TKN 325 Project Management and Entrepreneurship (2+1) 5 AKTS

Basic concepts of entrepreneurship, characteristics of entrepreneurs and necessary skills, Types of entrepreneurship, entrepreneurship culture, motivation, family business, Women's entrepreneurship, entrepreneurship ethics in Turkey, Organizational culture, communication and entrepreneurship network, Entrepreneurship and franchise, Local entrepreneurship, Entrepreneurship financing, Business plan concept and elements, Definition, characteristics and classification of the project, Project management and organization, Teamwork (Culture of writing projects together with different disciplines), Logical framework approach, Budgeting in project management, Control and reporting in project management, Project risk management, Student presentations (business plan presentations).

INS 301 Structural Analysis II (3+1) 5 AKTS

Identification of structural systems: Stability, isostaticity, degree of hyperstaticity and kinematic uncertainty. Solution of hyperstatic building systems under the influence of external loads and/or support collapses. Solution of hyperstatic systems with Force Method and Displacement based methods (Angle Method, Moment Distribution). Lines of influence: building systems obtaining unfavorable loadings in the design.

INS 303 Soil Mechanics and Laboratory (3+2) 6 AKTS

Introduction to soil mechanics, Index properties, classification and structure of soils, Pore water pressure, capillarity and effective stresses in soils; Permeability and its measurement in soils, Stress traces in soils, Improvement of compaction and soil properties, One-dimensional consolidation theory and settlement calculations, Experimental measurement of shear strength and shear strength parameters in soils, Safety of slopes and slopes, stability checks.

INS 305 Fluid Mechanics (4+0) 4 AKTS

Basic Concepts, Properties of Liquids, Fluids at Still, Fluids in Motion, Dimensional Analysis Concept

INS 307 Dynamics of Structures (4+0) 5 AKTS

Introduction to Structural Dynamics, Single degree of freedom systems, Analysis of undamped free vibration of single degree of freedom systems, Analysis of damped free vibration of single degree of freedom systems, Analysis of forced vibration of single degree of freedom systems, Equivalent lateral load and spectral analysis, Multi degree of freedom systems, Analysis of undamped free vibration of multi degree of freedom systems, Analysis of damped free vibration of multi degree of freedom systems, Earthquake response of linear MDoF systems, Mode superposition method (Modal Analysis)

INS 309 Technical English (3+0) 5 AKTS

Basic English terms in Science and technology, Basic English terms in Civil Engineering, Basic English terms in Civil Engineering (Building and construction), English terms in Civil Engineering (Geotechnical), English terms in Civil Engineering (Building material), English terms in Civil Engineering (Transportation), English terms in Civil Engineering (Hydraulic), English terms in science and technology, Article and technical report writing/understanding resume, email, etc. writing and evaluation

VI. SEMESTER

INS 302 Reinforced Concrete (4+1) 6 AKTS

General informations, the effect of normal force, singly reinforced rectangular beams, Doubly reinforced sections, Analysis of T beams, Combined compression and bending, Shear force members, Slender columns, slabs, foundations.



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INS 304 Foundation Engineering (3+1) 5 AKTS

Soil and foundation studies, drillings, field and laboratory studies in terms of foundation construction; Foundation types, determination of soil safety stress; Shallow foundations and bearing capacity calculations; Deep foundations, settlement of foundations, piled foundations and their manufacture; Calculation of bearing capacity of individual piles, pile groups, calculation of settlements in pile foundations; Sheet piles, securing and sizing of retaining walls; Information on special foundations, bridge footing, well foundations, caissons; introduction of excavation types, sensitivity of fillings and excavations, shoring methods and simple shoring calculations; Basic design principles, site works in foundation construction; Improvement of soils.

INS 306 Transportation (3+1) 5 AKTS

Definitions and characteristics of transportation systems, Classification of highways, road and highway traffic terms, the characteristics of drivers and pedestrians, vehicle movements, traffic exchange, fundamental relationships of traffic flow, capacity and service level, the horizontal curve calculations, Vertical curve calculations, highway planning, Route Phases of Investigation Example Zero-Range Research, Sample path plan, size and the cross-sections drawn, Road Drainage, Cross-section Areas Account (Cross method), volume calculations, Bruckner diagram drawing, road Materials and Design Methods, Cost accounts.

INS 308 Hydrolics (3+1) 5 AKTS

Natural Fluids, Continuous Head Losses, Local Head Losses, Siphons, Series - Parallel Pipes, Holder Pipe Systems, Water Distribution Systems, Open Channel Hydraulics

INS 310 Steel Constructions (3+1) 5 AKTS

Steel material properties, design of structural elements under the influence of tension, compression and bending, design and experimental application of bolt and weld joint.

INS 312 Constructions Management and Cost Analysis (3+1) 4 AKTS

General definitions and investigation of construction projects, laws and regulations, tendering procedures, construction scheduling, project delivery methods, site organization, construction safety, commissioning procedures, project evaluation and cost analysis, quantity take-off, unit price analysis, resource planning, construction cost, preparation of progress payment reports, utilization of packaged software.

VII. SEMESTER

TKN 423 Internship (0+2) 5 AKTS

To reinforce students' knowledge and experiences gained during periods of learning in the workplace hierarchy will perform their duties responsibilities, relationships, organizational structure, observing work discipline, application functions are doing and they keep abreast of industry employees, diploma programs provide the opportunity to increase the knowledge and experience, have taken the theoretical knowledge the skill to use and implement the transfer, workplace training their staff in line with agency officials and the business is about working with others (clients or other agencies) to gain the habit of good communication skills, increase familiarity following the technological developments in the sector.

TKN 429 Cooperative Training (5+20) 20 AKTS

Trainings with the skills of preparatory training in the field of business education, to develop and train the knowledge, skills, behaviors and work habits that can provide engineering education in the business environment. Moreover;

- 1-To consolidate in undergraduate education at Sakarya University of Applied Technologies, to consolidate theoretically to be acquired at schools,
- 2- Skills and experiences gained in laboratory laboratories,
- 3- to renew workplace organizations, productions and new technology facilities
- 4-To guide the career choices of students and to enable them to complete the work related to their field.



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INS 401 Civil Engineering Design (0+2) 5 AKTS
This activity generally involves carrying out a partial research activity and/or a detailed literature survey on a particular topic under the supervision of a lecturer.
UNV-COMMON ELECTIVE
UNV-COMMON ELECTIVE
FT-MAC TECHNICS ELECTIVE

VIII. SEMESTER

INS 402 Final Year Project (0+4) 10 AKTS
This activity generally involves carrying out a partial research activity and/or a detailed literature survey on a particular topic under the supervision of a lecturer.
INS 403 The projects of Concrete Structures (3+1) 5 AKTS
To calculate the slabs of a reinforced concrete structure, to calculate the beams and columns for vertical and horizontal loads. It is to decide on the foundation system of the structure and to make the foundation calculations and drawings.
UNV-COMMON ELECTIVE
UNV-COMMON ELECTIVE
FT-MAC TECHNICS ELECTIVE

VII ve VIII SEMESTER FACULTY / INSTITUTE ELECTIVE COURSE LIST

INS 001 INDUSTRIALIZED BUILDING TECHNOLOGIES (3+0) 5 AKTS
Description of Classic Formwork Systems, Investigation of Modern Production System Comparison of classical and Industrial Tooling System Definition of the Tunnel Form System, General Properties, Structural Properties, static characteristics, speed of the system and economy, Specs and Types, tunnel form of Sizing and Systems Movement, Mold System Application and Formation, differences in manufacturing type Material Saving, Mold, Cost, System Development and Implementation Countries.
INS 002 BUSINESS COMPUTER APPLICATIONS (3+0) 5 AKTS
The principles of finite element method, Basic concepts, Modeling and Analysis Techniques, Materials and Methods Definitions, 2D and 3D structure analysis, Internal forces, Stress Analysis, Response Spectrum Analysis, Time Dependent Solutions.
INS 003 IMPROVEMENT OF DAMAGED STRUCTURES (3+0) 5 AKTS
Types and degrees of defects, and the way in which the factors that cause damage to structures, remediation methods, reinforcing, splicing, jacketing, injection and so on., Roof, walls, plaster, coatings and other repair techniques for any damage, required by the method of improvement of machinery, equipment and materials damages in preparation of technical reports on improving methods.



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INS 004 SOIL IMPROVEMENT METHODS (3+0) 5 AKTS

The concept of soil improvement, The compaction of soils, Pre-loading method, Vertical drains, Injection, Heat treatments, Reinforcement, Geotextiles, The control of the soil improvements.

INS 005 DAMS AND HYDROELECTRIC PLANTS (3+0) 5 AKTS

Definition types of dams and its reservoirs, aims of the dams, choosing area for dams, environmental effects of dams, choosing types of dam and general properties of dams, energy sources, principles of hydroenergy, types of hydropower, open channel and pipes systems.

INS 006 CONCRETE HIGH STRUCTURES (3+0) 5 AKTS

Introduction to the reinforced concrete (RC) high-rise buildings, Load carrying systems in high-rise building, Design principles for the high-rise buildings, Ductility concept and realization on the high-rise buildings, The considered loads in the design of high-rise buildings, Shear wall framed system subjected to statically equivalent earthquake loads, Dynamical analysis of the high-rise building by using modal analysis, Earthquake resistant design of the shear wall structures, The dynamic models of RC shear wall structures with bracing beams, Load carrying systems under torsional effects.

INS 007 INDUSTRIAL STEEL STRUCTURES (3+0) 5 AKTS

Design steps in low rise industrial steel structures: loads, models, element designs, connections, supports and foundation anchors.

INS 008 RAILWAY (3+0) 5 AKTS

Railway engineering introduction, shooting, geometric and physical standards, slopes, curves, transition curves, itinerary, superstructure, superstructure and manufacturing.

INS 009 DEEP FOUNDATIONS (3+0) 5 AKTS

Geotechnical evaluation of building sites, shallow and deep-foundations, special foundation engineering problems, deep excavations, soil improvement methods, soil problems in earthquake engineering

INS 010 COMPUTER APPLICATIONS IN GEOTECHNICAL (3+0) 5 AKTS

Computer applications in geotechnical and geotechnical computer applications-sample solutions

INS 011 HYDROLOGY (3+0) 5 AKTS

Introduction to explain the hydrological cycle, precipitation, evaporation, infiltration to explain Groundwater, Surface Flow. Examine the hydrological measurements and data analysis, hydrograph analysis, theory, examine, Unit hydrograph analysis, synthetic unit hydrograph to explain. Along the river hydrograph shifting to explain, explain flood Hydrograph routing, explain Statistical Methods in Hydrology, Repetition to analyze, explain the hydrological model.

INS 012 ADVANCED CONCRETE TECHNOLOGY (3+0) 5 AKTS

The new generation of concrete admixtures and pozzolans teaching of production techniques. performance evaluation of the concrete over time, it will cause harmful damage to the environment and this environment types of concrete and reinforced concrete, concrete repair, concrete production, unusual conditions.

INS 013 CIVIL ENGINEERING PROJECT MANAGEMENT (3+0) 5 AKTS

Project Management, Project Planning, CPM and PERT Methods, Project Cost, Communication, Quality, Risk, Human Resources Management and H & S.

INS 014 COAST AND PORT ENGINEERING (3+0) 5 AKTS

Introduction and classification of ports, to choose ideal area for a harbor and port, types and properties of ships, to plan marina, harbor and port basin areas, port terminals, berthing structures systems, to determine of berthing forces, navigation security systems, design of marinas, operating and management of ports and marinas.



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INS 015 SPECIFIC CONCRETES (3+0) 5 AKTS

Lightweight concrete, heavy concrete, steel fiber reinforced concrete, high strength concrete and ultra high strength concrete, cement slurry is injected into the fiber reinforced concrete, reactive powder concrete.

INS 016 FINITE ELEMENT METHOD (3+0) 5 AKTS

Finite element, joints, degree of freedom, displacement, stress-strain, stiffness- and mass matrix, equilibrium equation, boundary- and load conditions, solutions of equilibrium, material behavior, bar and beam elements, truss structure, frame structure and applications.

INS 017 HYDRAULIC STRUCTURES (3+0) 5 AKTS

To design of water constructions and structures, to design of fixed and moveable water structures, lower bed of water, reduced of energy structures, seepage and current control, hydraulics stream or river constructions, hydraulics of bridge and box

INS 018 SLOPE STABILITY (3+0) 5 AKTS

Introduction and definitions-Mass movements and classifications-Formation of slopes-Water in the slopes and its effect on mass movement-Mechanical principles of mass movements-Investigation of mass movements (In-situ and laboratory)-Soil slopes stability-Method of Limit equilibrium-Method of slices
Graphical methods-Rock slopes-Mass movement classifications in rocks-Investigation on rock slopes-Numerical methods-Examples.

INS 019 TUNNEL ENGINEERING (3+0) 5 AKTS

Definition of Terms Used in Tunneling, Importance of Geology in Tunneling, Design of Tunnels, Influence of Geological Conditions in Tunnel Construction, Tunneling in Rock and Soil Environment, Problems Faced During Tunneling, Ground Improvement in Tunneling, Damages Occurred in Tunneling, Design and Supports in Tunnels, Tunneling Methods, Example Applications

INS 020 TRANSPORTATION SYSTEMS (3+0) 5 AKTS

Transport systems are introduced, individual transportation, mass transit, public transport by rail, road, air, by sea to the transport, bus stops, park space planning, introduction of load-carrying systems, cargo shipping, warehouse-type transport, road, air, by sea transport services.

INS 021 WOODEN BUILDINGS (3+0) 5 AKTS

Wood Construction technology, Wood Construction joint materials, Wood construction loads, Wood construction dimensions, Wood construction joints, Wood construction against fire and air attacks

INS 022 PREFABRICATION CONSTRUCTION TECHNIQUES (3+0) 5 AKTS

Understanding of wooden prefabricated elements for wooden prefabricated buildings, according to the modular system architecture design, the combination of the element details, installation stages and insulation are able to recognize the wooden prefabricated elements, to recognize the steel prefabricated building components based on modular system architecture, detail drawings, steel prefabricated building types, Steel Squad details of components, assembly of the steel construction principles, Basic connection details and the purpose of insulation, installation of insulation material details, drawing and explain the details of the installation project.

INS 023 INTRODUCTION TO EARTHQUAKE ENGINEERING (3+0) 5 AKTS

Seismology, strong ground motion, local site effects, design earthquakes.

INS 024 INTRODUCTION TO GEOTECHNICAL EARTHQUAKE ENGINEERING (3+0) 5 AKTS

Introduction-Earthquakes-Seismic risk and damages-Site investigation-Characteristics of stress-strain and shear resistance-Dynamic soil tests-Soil amplification-Soil liquefaction-Evaluation methods of soil liquefaction-Precautions against liquifiable soils-Foundation design in seismic risk areas-Earthquake induced settlements-Slope stability in seismic risk areas-Behaviour of retaining walls during earthquakes-Soil improvement



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INS 025 SURVEYING (3+0) 5 AKTS

Topography definitions, scope and usage, and the calculation methods of scale types, topographical features and functions of the devices, methods of measuring length, dots and lines marking of the length measurements made with disabilities and unobstructed terrain, height measurement methods, the geometric height measurement, leveling works, the land area measurement methods, field measurements of the account, the coordinate values, area calculation, planimeter measurement of the area, topography, and the establishment and adjustment of associated equipment, land length and angle measurements, leveling and traverse calculations, account the results of the implementation of land and topographical drawings done by the measurement results.

INS 026 COMPOSITE MATERIALS (3+0) 5 AKTS

Definition of composite materials and guidelines, classification, granular, fibrous and layered composites formation. Developed a set of composite material properties and physical models to examine relations. Production of Composite Materials, Properties and Uses

INS 027 SITE MANAGEMENT (3+0) 5 AKTS

Project Management, Project Planning, CPM and PERT Methods, Project Cost, Communication, Quality, Risk, Human Resources Management and H & S.

INS 028 LAND WORKS (3+0) 5 AKTS

Classification of soils and High-tide and collapse of soil, functions of the machines used in the excavation and filling processes, classification of the excavation and filling processes by using machine and devices, choosing processes of the filling material, economic analysis of the excavation and filling processes, measurement of excavation and filling processes, rules of the work Safety And Occupational in the excavation and filling processes