MATH 141 Basic Calculus I (3-2)4 5 Ects

Functions. Limits and Continuity. Derivatives. Applications of Derivatives; Mean Value Theorem, Intermediate Value Theorem. Integration. Applications of Integrals; Volmes by slicing, Surface Areas and Arc Lengths. Transcendental Functions. Integration Techniques; Substitution Rule, Trigonometric integrals, Integration by Parts.

MATH 142 Basic Calculus II (3-2)4 6 Ects

L'Hopital's Rule. Improper Integrals; Tests for Convergence. Sequences and Infinite series; Tests for Convergence. Polar Coordinates. Multivariable Functions and Their Derivatives; Limits, Directional Derivative, Gradient Vector. Double integral, Double Integral in Polar Coordinates.

MATH 241 Calculus III (3-2)4 5 Ects

Vector-Valued Functions and Space Curves, Calculus of Vector-Valued Functions, Motion in Space, Multiple Integrals over Rectangular Regions, Integrals in Polar, Cylindrical and Spherical Coordinates, Change of Variables in Multiple Integrals, Vector Fields, Divergence and Curl, Line Integrals, Properties and Applications of Line Integrals, Surface Integrals, Conservative Fields, Fundamental Theorems of Vector Calculus: Green's Theorem, Stoke's Theorem, Divergence Theorem.

CE 101 Introduction to Civil Engineering and Sustainability (2+0)2 6 Ects

In this course, students will be introduced to the departments of civil engineering, typical activity areas, the curriculum and its content, and the faculty members of the department. In addition, civil engineering, and its importance in terms of sustainability will be discussed and professional engineering will be explained. The importance of written and verbal engineering communication will be examined and taught. Students will have an idea about what civil engineering is and by whom they received this education.

CE 122 Statics (2+2)3 6 Ects

Introduction to rigid body mechanics. Concepts of moment, couple, resultant. Equations of equilibrium, free-body diagram. Structural analysis of trusses and beams. Shear force and bending moment diagrams of beams. Moment and centroid of area. Moments of inertia, principal directions.

CE 224 Mechanics of Materials (2+2)3 5 Ects

Tension, compression, and shear; axially loaded members; Torsion of circular shafts; Equilibrium, compatibility, and constitutive relations; Stresses in beams; Analysis of stress and strain; Deflection of beams; Buckling of columns. Prerequisite(s): CE 122

CE 232 Construction Management (3+0)3 5 Ects

Introductıon, techniques for financial and management control of construction projects, construction company financial control and accounting, project cost control, estimating and bid preparation, equipment management, computer and expert system applications to construction financial control.

CE 240 Basic Computer Programming (2+2)3 5 Ects

Fundamentals of programming. Introduction to programming concepts, using constants, variables, expressions and statements. Selection, repetition. Simple data structures and arrays. Functions and modular programming.

CE 307 Numerical Methods in Engineering and Linear Algebra (4+0)4 5 Ects

Solutions of system of linear equations, Iterative methods, Interpolation, Cubic Splines, Numerical differentiation, Numerical Integration, Numerical solution of nonlinear equations, Initial value problems, Numerical solution of ordinary differential equations, Finite difference method, Engineering application problems.

CE 351 Introduction to Transportation Engineering (2+2)3 5 Ects

Introduction to transportation systems. Vehicles, network, terminals and stations as components of transportation systems engineering. Design of transportation facilities with respect to highway, railway, port and airport engineering. Operations planning of transportation systems and traffic engineering. Models of traffic flow. Traffic analysis at intersections. Basic definitions and computations of level of service. Planning and management techniques.

CE 391 Fundamentals of Structural Dynamics (3-0)3 5 Ects

Fundamental concepts related to dynamic analysis, dynamic response of SDOF systems, free, forced, undamped, and damped vibrations of SDOF systems, response spectrum, dynamic response of MDOF systems, mode superposition technique for dynamic analysis of linear structural systems.

CE 441 Principles of Earthquake Resistant Design (2-2)3 5 Ects

Mechanisms and characteristics of earthquake ground motions. Intensity and magnitude measurement of earthquakes. Linear response of SDOF systems. Elastic response and design response spectra. Free and forced vibration analysis of frame structures. Modal superposition and equivalent static lateral force methods. Design codes and applications.