Philadelphia University

Faculty of Engineering and Technology

Civil Engineering Department

Study Plan 2025-2026 Course description

Calculus (1) (216111)

The course covers the following main topics: the distinction between algebraic and transcendental functions, an introduction to analytic geometry, applications of differentiation, and a brief introduction to integration.

Calculus (2) (250102)

This course presents advanced principles of calculus to provide the necessary foundation for student progression. It covers the following main topics: techniques of integration, sequences and series, conic sections, and polar coordinates

General Physics (1) (216131)

This course is for first-year students majoring in engineering, physics, or other sciences. It introduces students to the basic language and ideas of physics that are found in all branches of science and technology. It provides a clear and logical presentation of the fundamental concepts and principles of physics, enhancing their understanding through a wide range of interesting real-world applications.

General Physics (2) (216132)

The course covers the main concepts, principles, methods, and results of classical physics. It primarily covers Newtonian mechanics, with topics including vectors, the dynamics and motion of a single particle in one, two, and three dimensions, and circular motion. Newton's laws of motion, work, energy and force, conservation of energy, linear momentum, rotational motion, angular momentum, general rotation and static equilibrium; elasticity and fracture.

Engineering drawing660131_660132

Instruments and their use, graphic geometry ،lettering, orthographic and isometric drawing and sketching, sectional views ،introduction to descriptive geometry, surface intersections and developments ،and computer (ACAD)

Engineering Workshop (1)

Developing basic skills in the fields of manual filing, turning (lathe work), welding, piping and plumbing, carpentry, sand casting, glasswork, sheet metal fabrication, and metal forming.

Programming Language (0630263)

Data types and constant/variable types. Types of operations. Input and output statements. Arithmetic, logical, and relational expressions. Type conversion. Control statements. Loop statements. Functions. Arrays. Pointers. Strings. Files. Structures. Introduction to object-oriented programming

Engineering Skills (640253)

Understanding the definition of engineering. Analyzing basic engineering problems. Proposing and evaluating design solutions. Communicating effectively within a team environment. Reading research papers and writing technical reports. Understanding professionalism and being aware of ethical responsibility. Understanding the basics of project management and planning for managing simple projects.

Entrepreneurship (610550)

Basic Concepts of macro & micro economics, Economy architecture, production process, The effect of Science and Technology on production, The use of Science and Technology in production, Skills, Free business, Services and commodities production, Methods of project propagation, Marketing studies, Export, import and interior market consumption, Project forming, project requirements, economic appraisal studies, project financing, banking, companies, Cost studies, Project management, Marketing.

Engineering Geology (670231)

Statics (670211)

Strength of Materials (670212)

Strength of Materials Lab. (670213)

Construction Materials (670214)

Construction Materials Lab. (670216)

Building Construction & Civil Drawing (670217)

Soil Mechanics (670331)

Soil Mechanics Lab. (670332)

Structures (1) (670311)

Structures (2) (**670312)**

Highways Geometric Design (670324)

Pavement Design (670323)

Design of Highways lab. (670322)

Reinforced Concrete -1 (670411)

Reinforced Concrete -2 (670412)

Steel Structures (670414)

Transportation & Traffic Engineering (670422)

Surveying (670261)

Surveying Lab. (670262)

Project Management (670571)

Specifications, Contracts & Quantity Surveying (670572)

Hydraulics (670441)

Hydrology (670541)

Hydraulics Lab. (670442)

Sanitary Engineering Lab. (670444)

Foundations Engineering (670531)

Fluid Mechanics (670381)

Sanitary Engineering (670443)

Restressed Concrete (670517)

Environmental Engineering (670343)

Special Topics in Civil Engineering (670553)

Airports & Railways Engineering (670522)

Computer Applications in Civil Engineering (670554)

Fundamentals of Finite Element (670555)

Engineering Training 670499

The student will spend an eight-week training period after completing 90 credit hours in the industry (inside or outside Jordan) under the supervision of a faculty member in the department. The student will be required to submit periodic reports, a final report, and take a final exam. This will be within a separate semester. The student may not register

Engineering project (1) 670551

The student must connect with one or more faculty members from the department who will assign him a project. The student will study and analyze the project and submit a proposal for its implementation in the next stage.

Engineering project (2) 670552

The student implements the project identified by the department in light of the results achieved in the first phase.

General Chemistry (1) 216141

This course introduces the basic theories of chemistry and covers the atomic nature of matter, stoichiometry, the periodic table, aqueous solution and concentrations, and oxidation-reduction reactions.

General Chemistry (1) lab 216143

Practical chemistry typically includes titration techniques such as acid-base titration and determination of the equivalence point, preparation of laboratory materials, study of physical properties such as solubility and adsorption, analysis of samples to determine their components, and laboratory safety concepts.

Calculus (3) (250202)

Complex functions - mapping, integrals in complex planes, Teller and Laurent series, singularities and residue theory, property values and property vectors.

Linear algebra and calculus (250205)

Systems of linear equations, matrices, determinants, Cramer's rule, vector spaces, linear transformations, eigenvalues and eigenvectors.

Engineering Analysis (2) 610262

Introduction to numerical analysis. Develop a basic understanding of numerical algorithms and skills in implementing algorithms to solve mathematical problems on a computer.

Engineering Workshop (2)

Home electrical circuits, fluorescent lamp circuits, series and parallel circuits, switch installations, fuses, electronic soldering, electronic device maintenance, and circuit board design.

Dynamics 620212

Engineering Analysis(1) 610260

Basic Concepts and ideas, first Order Differential Equations. Second and higher order Differential Equations, Power Series Method, and Laplace Transform.

Engineering Statistics 670203

Special Topics in Civil Engineering (670553)

Up-to date subjects in Civil Engineering.