

University of Anbar جامعة الانبار



First Cycle – Bachelor's Degree (B.Sc.) – Civil Engineering

بكالوريوس - هندسة مدنية



Table of Contents

1. Overview
 2. Undergraduate Modules 2023-2024
 3. Contact
-

1. Overview

This catalogue is about the courses (modules) given by the program of Civil Engineering to gain the Bachelor of Science degree in Civil Engineering. The program delivers (48) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

نظرة عامة

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج الهندسة المدنية للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (50) مادة دراسية، على سبيل المثال، مع (6000) إجمالي ساعات حمل الطالب و (٢٤٠) إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2023-2024

Module 1

Code	Course/Module Title	ECTS	Semester
ENG003	Calculus-I	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
Calculus is the branch of mathematics that deals with the finding and properties of derivatives and integrals of functions, by methods originally based on the summation of infinitesimal differences. Mainly, calculus I deals with the following subjects: Limits and continuity. Differentiation. Applications of derivatives. Integration. Inverse functions. Applications of the Integral.			

Module 2

Code	Course/Module Title	ECTS	Semester
ENG001	Physics	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	2	78	٤٧
Description			
The course is a survey of the concepts, principles, methods and major findings of classical Physics. Primarily, it covers Newtonian mechanics, and thermal Physics, with topics include: Physics and measurement, Vectors, kinematics and dynamics of motion of a single particle in one and two dimensions, work and energy, system of particles, linear momentum and collisions, kinematics and dynamics of rotational motion, equilibrium of rigid bodies, and elasticity, fluid static and fluid dynamics, oscillatory motion, wave motion, and temperature and thermal equilibrium.			

Module 3

Code	Course/Module Title	ECTS	Semester
ENG002	Chemistry	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	2	78	47
Description			
<p>Chemistry and Measurement and significant figures. Atoms, molecules and ions. Formulas and names. Stoichiometry and chemical calculations. Chemical reactions. Thermochemistry and enthalpy changes. Quantum theory of the atom and electron configuration. Chemical bonding and molecular geometry. The Lab. Section presents Safety in the Lab. Measurement of mass, volume and density. Identification of an unknown compound. Qualitative analysis of anions. Empirical formula of a compound. Thermal decomposition of hydrates. Stoichiometric determination. Acid base and redox titrations. Enthalpy of reactions.</p>			

Module 4

Code	Course/Module Title	ECTS	Semester
CIV001	Building Materials	5	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	47
Description			
<p>This course introduces students to the basic building materials. It offers the basic understanding of the use of common materials including bricks, gypsum, stone, wood and iron.. etc. Namely, it introduces students to proper terminology and usage of these materials and selected manufactured components</p>			

Module 5

Code	Course/Module Title	ECTS	Semester
UOA007	Computer Science I	3	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	2	48	27
Description			
<p>This course introduces students to computer fundamentals-related issues such as chronological development of computers, computer main features, types of computers, computer components (input and output devices). In addition, this course introduces students to the computer safety-related issues and the required skills to deal with operating system. This course will also help students to have the required skills to produce an efficient Word documents. Finally, skills related to production effective presentation using Microsoft power point is also covered during this course.</p>			

Module 6

Code	Course/Module Title	ECTS	Semester
UOA001	Arabic Language I	2	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
<p>This course aims at building students' familiarity with and competence in Arabic literature in its various genres so as to increase their ability to appreciate literature and to develop their awareness of its concepts through the study of poetry, novel and the short story.</p>			

Module 7

Code	Course/Module Title	ECTS	Semester
UOA005	Human Rights and Democracy	2	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
<p>This course is designed to give the student the definition of freedom democracy, the concept of democracy, history of democracy, the properties of democracy, traditional Greek democracy, its principles, modern democracy, and pressure groups. definition of freedom and the right language and idiomatically and legitimacy of the user, Origin of the right in the eyes of Islamic law, Elements of the right and types of, Personal freedom, Intellectual freedom, Rights and economic freedoms, Islam and Slavery, Human rights objectives, The use of freedom and the right general project, The right of a Muslim to his Muslim brother, Parental rights, Right neighbor, The right of women, Human rights in the heavenly religions, Religious tolerance in Islam.</p>			

Module 8

Code	Course/Module Title	ECTS	Semester
ENG004	Calculus-II	6	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
<p>This course provides a comprehensive guide and up-to-date treatment of engineering mathematics with an in-depth overview of the many mathematical. It is intended to introduce students of engineering, physics, mathematics, computer science, and related fields to those areas of applied mathematics that are most relevant for solving practical problems.</p>			

Module 9

Code	Course/Module Title	ECTS	Semester
ENG006	Engineering Mechanics (Static)	6	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
<p>This course provides the student with a clear and thorough presentation of the theory and application of engineering mechanics: statics. Topics include calculating force systems resultants; applying equilibrium condition of particles and rigid bodies; analysis of simple trusses; calculating and sketching internal forces diagrams; solving statics problems involving friction; calculating center of gravity, centroids, and moment of inertia. study of the laws of nature at a fundamental level with a focus on technological applications to provide solutions for important societal problems. As a result, it provides an essential link between physics and engineering. This course equips the students with the applied concepts of the Physics. Course brushes the basic knowledge of students by starting from the basic concepts and then progresses gradually toward the advance concepts. By the course completion, students would have developed good understanding of Physics fundamentals.</p>			

Module 10

Code	Course/Module Title	ECTS	Semester
ENG005	Fundamentals of Electrical Engineering	6	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	72
Description			
<p>This course introduces the basics of electric circuits, series and parallel connection, and DC circuit analysis. Additionally, the course presents ohms law, Kirchhoff laws for solving series parallel circuits. Furthermore, it introduces circuit theorem and their analysis; including mesh, nodal, and superposition theorems. The venin and Norton theorems are also included. Finally, the course introduces capacitors and inductor into the circuit and how to deal with it under dc condition.</p>			

Module 11

Code	Course/Module Title	ECTS	Semester
ENG007	Engineering Drawing	6	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	4	93	57
Description			
<p>This course discusses the fundamental concepts of engineering graphics. It gives also an introduction to computer graphics using CAD software. The following topics are covered: Drawing conventions such as standards, line types and dimensioning; drawing of inclined and curved surfaces; deducting the orthographic views from a pictorial; drawing full and half sections; deducting an orthographic view from given two views; pictorial sketching (isometric and oblique).</p>			

Module 12

Code	Course/Module Title	ECTS	Semester
UOA003	English Language I	2	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
<p>This course is designed to enable academic writing course which provides an opportunity for the students to learn and practice the skills needed for handling topics related to the field of study. The course emphasizes the development of academic writing skills as well as the ability to read and think critically. Students will learn to use the library and appropriate online resources to find and evaluate sources to inform, develop and support their ideas in term paper writing. They will also learn skills for reading analysis, such as comprehension and inference.</p>			

Module 13

Code	Course/Module Title	ECTS	Semester
CIV002	Engineering Geology	4	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	2	78	22
Description			
<p>This course introduces the students to the Fundamental engineering geology and their applications in civil engineering. This course covers the following topics:- Introduction and Overview: engineering geology vs. geology, engineering geology and civil engineering, Introduction and Architecture of the earth surface, Minerals properties, Rocks: major rock groups Igneous, sedimentary and metamorphic, Engineering Properties of Rocks, Structural Geology and Strike and dip, Folds, Faults: types and structures, Joints, Topographic and Geologic maps, and Ground-water Geology.</p>			

Module 14

Code	Course/Module Title	ECTS	Semester
ENG008	Calculus III	6	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
This course extends the theory of differential and integral calculus to functions of many variables. Topics include the study of vectors, functions of several variables, differentials and applications, double and triple integrals.			

Module 15

Code	Course/Module Title	ECTS	Semester
CIV003	Engineering Surveying-I	4	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	22
Description			
This course introduces knowledge about Chain surveying, Compass surveying, Leveling, Theodolite surveying and Engineering surveys.			

Module 16

Code	Course/Module Title	ECTS	Semester
CIV004	Strength of Materials I	5	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
This course covers, internal loading and stresses, axial and shear stresses, thin-walled pressure vessels, material properties ,Strains, axial deformation ,Hook's law, Statically indeterminate members, Stresses due to temperature, Internal forces in beams (S.F.D & B.M.D).			

Module 17

Code	Course/Module Title	ECTS	Semester
CIV005	Properties of concrete	7	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	4	108	67
Description			
The current course is designed for the undergraduate students in order to provide them with a well understanding of both properties of concrete (in fresh and hardened stages) as well as its raw materials.			

Module 18

Code	Course/Module Title	ECTS	Semester
UOA006	The crimes of Baath regime in Iraq	2	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			

Module 19

Code	Course/Module Title	ECTS	Semester
UOA002	Arabic Language II	2	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
Arabic grammar, its importance and place in the language. Arabic grammar: subject and object, hamza linguistic differences .Common mistakes in the Arabic language . Arabic Grammar Verbs The Five Types of Noun in the Arabic Language. Advancement and delay in the Holy Qur'an Graphic touches in the Holy Qur'an. Literature and Rhetoric . Poetry and poets.			

Module 20

Code	Course/Module Title	ECTS	Semester
CIV006	Dynamics	4	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	37
Description			
<p>Fundamental concepts of kinematics and kinetics with application of particles and plane motion of rigid bodies, Rectilinear and curvilinear motion of particles. Newton's second law, impulse and momentum methods, impact, Dynamics of systems of particles, Kinematics of rigid bodies. Plane motion of rigid bodies: Forces and accelerations.</p>			

Module 21

Code	Course/Module Title	ECTS	Semester
ENG009	Calculus IV	6	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
<p>The laws of nature are expressed as differential equations. Scientists and engineers must know how to model the world in terms of differential equations, and how to solve those equations and interpret the solutions. This course focuses on linear differential equations and their applications in science and engineering.</p>			

Module 22

Code	Course/Module Title	ECTS	Semester
CIV007	Engineering Surveying II	4	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	22
Description			
<p>This course introduces knowledge about areas and volumes. Then, it moves to horizontal curves and types of horizontal curves. In addition, this course demonstrates photogrammetry, GPS measurements and GIS.</p>			

Module 23

Code	Course/Module Title	ECTS	Semester
CIV008	Strength of Materials II	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	47
Description			
This course covers, Internal forces in beams (S.F.D & B.M.D), bending stresses, Transverse shear stresses, Stress and strain transformations, Deflection in beams, Buckling of Columns.			

Module 24

Code	Course/Module Title	ECTS	Semester
CIV009	Building Construction	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	47
Description			
This course is aiming to provide student with fundamental information the basic building materials and systems used in constructing buildings, and infrastructure projects. It offers the basic understanding of the use of common systems such as land work; foundation work; brick and wall work and finishing work .			

Module 25

Code	Course/Module Title	ECTS	Semester
CIV010	Fluid Mechanics	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	63	62
Description			
This course introduces the student to fluid mechanics' concepts and fundamentals. The course also includes the topics such as Properties of fluids, Fluid Statics, Momentum and energy equations and applications. Bernoulli equation and applications, Dimensional analysis and similitude, Introduction to viscous flows and boundary layers, internal flows, laminar and turbulent flows, Head loss and friction factor, Flow over immersed bodies (external flow), and Lift and drag.			

Module 26

Code	Course/Module Title	ECTS	Semester
UOA004	English Language II	2	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
<p>This course is designed to enable the students to achieve academic oral and written communication to the standard required at university level. The course integrates all the language skills with emphasis on writing, and it stimulates students' imagination, and promotes personal expression. Students, in this course, are trained to apply critical thinking skills to a wide range of challenging subjects from diverse scientific topics. Course activities include writing various types of academic essays, acquiring advanced academic vocabulary, and getting involved in group discussions and debates. In addition, the course also includes other skills to consolidate the main skills, such as further readings in mechanical engineering.</p>			

Module 27

Code	Course/Module Title	ECTS	Semester
UOA008	Computer Science II	3	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	2	48	27
Description			
<p>This course presents an overview of fundamental computer science topics. Overview topics include an introduction to computer components, computer hardware, operating systems, digitization of data, and application program (Microsoft office).</p>			

Module 28

Code	Course/Module Title	ECTS	Semester
CIV011	Structure-I	6	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
<p>This course covers internal stresses in two-dimensional linearly elastic statically determinate structures and deflections of those structures. The concepts of shear force and bending moments in transversely loaded moment-carrying members are revisited and formalized. Construction of shear and moment diagrams for the relevant structures is studied. The analysis of statically determinate trusses is also undertaken in details along with the classification of those particular structures. The concept of influence line is introduced and the construction of influence lines for different statically determinate structures is studied. The geometrical and energy methods of calculating deflections of statically determinate structures is also undertaken.</p>			

Module 29

Code	Course/Module Title	ECTS	Semester
CIV012	Reinforced concrete-I	6	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	87
Description			
<p>This course introduced Material properties, Flexural theories, Un-cracked section, Working stress method, Ultimate strength, Design and analysis of Singly Rectangular, doubly, T- section, irregular section beams, Shear analysis and design, Continuous beams, One way slab, Short columns, Long columns, Bond, anchorage, development length, Cracked and deflection.</p>			

Module 30

Code	Course/Module Title	ECTS	Semester
CIV013	Engineering management and economics	7	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	2	78	97
Description			
<p>This course inculcates the fundamental principles of construction planning and management and inculcates the fundamental principles of Engineering Economy as applicable in Civil Engineering Projects.</p>			

Module 31

Code	Course/Module Title	ECTS	Semester
CIV014	Soil Mechanics-I	6	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	3	93	57
Description			
<p>This course introduces the students to the fundamental engineering properties of soil and their applications in geotechnical engineering. This course covers the following topics:- Soil composition, physical and chemical properties, and classifications; water movement and seepage problems; effective stress concept, stress distribution in soil mass, consolidation, shear strength, compaction. Various laboratory experiments are performed to illustrate the basic principles of soil mechanics.</p>			

Module 32

Code	Course/Module Title	ECTS	Semester
CIV015	Hydrology	5	5
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
This course introduces the students to the fundamental engineering related to hydrology including: Hydrologic cycle, precipitation and runoff data, groundwater hydraulics, infiltration, peak runoff calculations, application to water resources problems.			

Module 33

Code	Course/Module Title	ECTS	Semester
CIV016	Structure-II	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
Structures II involves learning the basic principles and techniques of the analysis of linearly elastic statically indeterminate structures. The course commences by introducing the classical force methods, exemplified by the consistent deformation method, followed by the prominent classical slope-deflection equations and the iterative recast of which, the moment distribution method. Then the course closes by a primer in matrix structural analysis involving the matrix direct stiffness method for trusses and continuous beams. The course is entirely of engineering interest since engineering work for structural engineers involve a cycle of preliminary design, analysis and redesign of structural systems.			

Module 34

Code	Course/Module Title	ECTS	Semester
CIV017	Reinforced concrete-II	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
Short column analysis and design, analysis and design of two way slabs, Direct design method of two way slabs, Equivalent frame method of two way slabs, Yield line analysis and design.			

Module 35

Code	Course/Module Title	ECTS	Semester
CIV018	Soil Mechanics-II	6	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	3	93	57
Description			
<p>The first part of this course introduces the students to some practical aspects of geotechnical engineering where site soil has to be examined for potential engineering problems on the subjects of high compressibility/ collapsibility, low shear strength and liquefaction susceptibility. The second part of the course describes a number of common ground improvement techniques that are broadly practiced worldwide.</p>			

Module 36

Code	Course/Module Title	ECTS	Semester
ENG010	Engineering Statistics	4	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	0	48	52
Description			
<p>Classification of Data. Graphical representation. Arithmetical description. Probability theory, Probability of an event and composite events. Addition rule and multiplication rule, independent events. Counting techniques. Random variables and probability distributions. Expected values. Continuous and discrete random variables. Normal distribution. Binomial distribution. Poisson distribution. Joint and marginal probability distributions. Independence of random variables. Covariance and correlation. Random sampling. Unbiased estimates. Statistical intervals and test of hypothesis for a single sample..</p>			

Module 37

Code	Course/Module Title	ECTS	Semester
ENG011	Engineering Numerical Methods	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	47
Description			
<p>The numerical methods course involves solving engineering problems drawn from all fields of engineering. The numerical methods include error analysis, roots of nonlinear algebraic equations, solution of linear and transcendental simultaneous equations, matrix and vector manipulation, curve fitting and interpolation, numerical integration and differentiation, solution of ordinary and partial differential equations.</p>			

Module 38

Code	Course/Module Title	ECTS	Semester
CIV019	Traffic Engineering	5	6
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
<p>Traffic engineering is concerned with the safety of public, the efficient use of transportation resources, and the mobility of people and goods. Traffic engineers are called on to protect the environment while providing mobility, to preserve a scarce public resource (capacity) while working with others to assure safety and security.</p>			

Module 39

Code	Course/Module Title	ECTS	Semester
CIV020	Hydraulic Structures	5	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
<p>This course introduces the students to the Fundamental engineering design of hydraulic structures. This course covers the following topics: Importance and classification of hydraulic structures according to use, Type of dams, Selection of type of dam, Gravity dams, and Arch dams. Types of spillways, Ogee type spillway. Energy Dissipation. Channel diversion, Cross and Head regulators. Cross structures, Aqueducts and transitions, Culverts, Bridges and other Structures such as flow measurement structures.</p>			

Module 40

Code	Course/Module Title	ECTS	Semester
CIV021	Foundation Engineering-I	5	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
<p>This course introduces the students to the fundamental concepts of foundation analysis and design. This course covers the following topics: foundation selection and design criteria; Subsurface investigation; bearing capacity of shallow foundations, settlement of shallow foundations, Geotechnical design of footings and rafts, introduction to deep foundation(Single and group of piles).</p>			

Module 41

Code	Course/Module Title	ECTS	Semester
CIV022	Highway Engineering	6	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	4	93	57
Description			
<p>This course introduce various components of Highway Engineering, highway alignment (horizontal and vertical curves), design of geometric elements of highways, skill on blending of aggregate fractions by using graphical and mathematical methods and asphalt concrete mix evaluation. In addition, it includes design of flexible and rigid pavements by studying AASHTO1993 structural design method to find rigid pavement slab thickness and different layer thicknesses for flexible pavement taking in consideration studying the effects of traffic loading, environmental, and materials properties. Furthermore, an attention will be given to the pavement distress so that candidates will be able to distinguish between causes and failure of each mode.</p>			

Module 42

Code	Course/Module Title	ECTS	Semester
CIV023	Steel Structures I	4	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	37
Description			
<p>This course related to analysis and design of Steel Structures considering LRFD methods using the AISC Manual of Steel Construction.</p>			

Module 43

Code	Course/Module Title	ECTS	Semester
CIV024	Final Year Project-I	6	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	72
Description			
<p>Designation as a required course for the Civil Engineering Program. This course is continuation of work-Analytical, design, experimental, or field work carried out in accordance with a preapproved project plan under the supervision of faculty member(s).</p>			

Module 44

Code	Course/Module Title	ECTS	Semester
CIV025	Course Elective1	4	7
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	63	37
Description			
Designation as elective course for the Civil Engineering Program. The courses that addressed under this course are : Press-stressed concrete, Reinforced Concrete 3.			

Module 45

Code	Course/Module Title	ECTS	Semester
CIV026	Sanitary and Environmental Engineering	7	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	3	93	82
Description			
This course introduces fundamental concepts in the field of water supply engineering and sanitary engineering			

Module 46

Code	Course/Module Title	ECTS	Semester
CIV027	Methods of Construction and Estimation	5	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
3	1	63	62
Description			
Introduction to the various construction techniques, practices and the equipment needed for different types of construction activities. It also covers the various aspects of estimating of quantities of items of works involved in buildings, water supply and sanitary works, road works and irrigation works, the rate analysis, valuation of properties and preparation of reports for estimation of various items.			

Module 47

Code	Course/Module Title	ECTS	Semester
CIV028	Course Elective 2	5	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	63	62
Description			
Designation as elective course for the Civil Engineering Program. The topics that addressed under this course are : Foundation Engineering 2 or Highway material.			

Module 48

Code	Course/Module Title	ECTS	Semester
CIV029	Course Elective 3	5	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	63	62
Description			
Designation as elective course for the Civil Engineering Program. The topics that addressed under this course are: steel structure II.			

Module 49

Code	Course/Module Title	ECTS	Semester
CIV030	Final Year Project II	6	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	78	72
Description			
Designation as a required course for the Civil Engineering Program. This course is continuation of work-Analytical, design, experimental, or field work carried out in accordance with a preapproved project plan under the supervision of faculty member(s).			

Module 50

Code	Course/Module Title	ECTS	Semester
ENG012	Ethics and Leadership Skills	2	8
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	0	33	17
Description			
<p>This course is designed for engineering students who are interested in advancing into management and leadership roles. You will gain a perspective on what it is like to be an engineering leader. You will develop awareness of your own strengths and weaknesses as a leader when you are placed in charge of a project. You will learn how to leverage your strengths and control your weaknesses. You will also learn how to manage relationships with your team members and how to set up a creative environment for your team to motivate each team member to reach his or her potential. You will also learn how to deal with different ethical issues that are related to engineering field.</p>			

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