

Curriculum		T	P	ECTS
<b>1 st Semester</b>				
ENG101	English For Academic Purposes I	4	0	3,5
CE101	Engineering Fundamentals	1	0	2,5
MATH151	Calculus I	4	2	7
KRY111	Career Planning	1	0	1
HIST101	Principles of Atatürk and History of Turkish Revolution I	2	0	2
CHE105	General Chemistry	3	2	5
CMPE102	Computer Programming	2	2	4
PHYS101	General Physics I	3	2	6
<b>2 nd Semester</b>				
HIST102	Principles of Atatürk and History of Turkish Revolution II	2	0	2
CE110	Engineering Graphics and Design	1	3	4,5
MATH152	Calculus II	4	2	7
HIST221	History of Civilization	3	0	3
ENG102	English for Academic Purposes II	4	0	3,5
PHYS102	General Physics II	3	2	6
	General Elective	3	0	4
<b>3 rd Semester</b>				
CE201	Basic Mechanics I-Statics	4	0	7
MATH275	Linear Algebra	4	0	6
	General Elective	3	0	4
ENG201	English for Academic Purposes III	3	0	3
MATE207	Introduction to Materials Engineering	3	0	5
IE220	Probability and Statistics	3	0	5
<b>4 th Semester</b>				
CE202	Basic Mechanics II-Dynamics	3	0	5
CE210	Civil Engineering Materials	3	2	6
MATH276	Differential Equations	4	0	6
ENG202	English for Academic Purposes IV	3	0	3
MATH380	Numerical Methods for Engineers	3	1	5
CE204	Mechanics of Materials	3	0	5

<b>5 th Semester</b>				
CE307	Fluid Mechanics	3	2	5,5
CE321	Structural Analysis	3	0	5
CE399	Summer Practice I	0	0	10
CE335	Transportation Engineering	3	0	5
CE309	Geology and Surveying	2	2	6
ENG301	English for Occupational Purposes I	3	0	3
CE311	Soil Mechanics	3	2	5,5
<b>6 th Semester</b>				
CE328	Foundation Engineering	3	0	5,5
ENG302	English for Occupational Purposes II	3	0	3
CE310	Hydraulic Engineering	3	0	5,5
IE305	Engineering Economy	2	0	5
CE344	Fundamentals of Steel Design	3	0	5,5
CE342	Reinforced Concrete Fundamentals	3	0	5,5
<b>7 th Semester</b>				
TURK401	Turkish Language I	2	0	2
	General Elective	3	0	4
	Area Elective (1)	3	0	6
	Area Elective (2)	3	0	6
CE499	Summer Practice II	0	0	10
	Area Elective (4)	3	0	6
	Area Elective (5)	3	0	6
<b>8 th Semester</b>				
TURK402	Turkish Language II	2	0	2
CE402	Hydrology and Water Resources	3	0	5,5
CE490	Civil Engineering Design Project	1	4	9
	Area Elective (3)	3	0	6
CE450	Civil Engineering Seminars	0	2	2
CE430	Construction Engineering and Management	3	0	5,5

(1) CE439, AET306, AET316, AET326, AET336, AET346, AET356, AET366, AET376, AET386, AET396, AET406, AET416, AET426, AET436, CE404, CE405, CE406, CE407, CE408, CE410, CE411, CE416, CE417, CE418, CE420, CE421, CE424, CE425, CE429, CE431, CE433, CE434, CE438, CE440, CE442, CE443, CE444, CE447, CE454, CE456, CE463, CE464, CE468, CE470, CE471, CE473, CE488, CE498, CE423, CE449, CE466, CE472, CE491, CE493, CE419, CE437, CE441, CE479, CE475,

(2) CE439, AET306, AET316, AET326, AET336, AET346, AET356, AET366, AET376, AET386, AET396, AET406, AET416, AET426, AET436, CE433, CE405, CE406, CE407, CE408, CE411, CE417, CE420, CE421, CE424, CE431, CE434, CE438, CE442, CE444, CE456, CE463, CE471, CE498, CE416, CE425, CE440, CE443, CE447, CE454, CE464, CE468, CE470, CE473, CE488, CE410, CE418, CE404, CE429, CE423, CE437, CE466, CE472, CE493, CE491, CE449, CE419, CE441, CE479, CE475,

(3) CE439, AET306, AET316, AET326, AET336, AET346, AET356, AET366, AET376, AET386, AET396, AET406, AET416, AET426, AET436, CE434, CE438, CE443, CE404, CE405, CE407, CE408, CE411, CE416, CE417, CE418, CE421, CE424, CE425, CE429, CE431, CE433, CE444, CE447, CE464, CE470, CE420, CE406, CE410, CE440, CE442, CE454, CE456, CE463, CE468, CE471, CE473, CE498, CE488, CE423, CE419, CE437, CE449, CE466, CE493, CE491, CE441, CE472, CE479, CE475,

(4) CE439, AET306, AET316, AET326, AET336, AET346, AET356, AET366, AET376, AET386, AET396, AET406, AET416, AET426, AET436, CE407, CE410, CE416, CE411, CE417, CE420, CE425, CE431, CE433, CE440, CE454, CE464, CE468, CE470, CE471, CE473, CE488, CE498, CE404, CE405, CE406, CE408, CE418, CE421, CE424, CE429, CE434, CE438, CE442, CE443, CE444, CE447, CE456, CE463, CE423, CE419, CE437, CE441, CE449, CE466, CE491, CE493, CE472, CE479, CE475,

(5) CE439, AET306, AET316, AET326, AET346, AET356, AET366, AET376, AET386, AET396, AET406, AET416, AET426, AET436, AET336, CE411, CE416, CE417, CE418, CE420, CE425, CE429, CE433, CE434, CE438, CE443, CE444, CE405, CE406, CE407, CE408, CE410, CE421, CE424, CE431, CE440, CE442, CE447, CE454, CE456, CE463, CE464, CE468, CE470, CE471, CE473, CE488, CE498, CE404, CE423, CE419, CE437, CE466, CE491, CE493, CE441, CE449, CE472, CE479, CE475,

## General Electives

HUM322, HUM204, HUM323, ENG395, HUM319, MAN313, MAN408, ART228, PR419, GET304, GET305, GET306, GET314, GET315, GET316, GET324, GET325, GET326, GET334, GET335, GET336, GET344, GET345, GET346, GET354, GET355, GET364, GET374, GET384, GET394, GET404, GET405, GET406, GET414, GET415, GET416, GET424, GET425, GET426, GET434, GET436, ART271, ART201, ART221, ART222, ART223, ART224, ART225, ART251, ART252, ART291, ART292, FRE201, FRE202, FRE301, FRE302, FRE401, FRE402, GER201, GER202, GER301, GER302, GER401, GER402, HUM201, HUM211, JAP201, JAP202, JAP301, JAP302, RUS201, RUS202, RUS301, RUS302, SPAN201, SPAN202, SPAN301, ART202, ART294, CHIN201, CHIN301, MAN409, MAN415, ART235, ART293, CHIN202, PR491, PR492, MAN428, LAW250, CHIN302, HUM321, HUM331, HUM360, ART282, ART284, HUM312, HUM316, ECON442, IR423, HUM320, SPAN302, HUM212, ART287, CE495, KOR201, SPAN402, RUS402, ART285, ART286, RUS401, SPAN401, ART288, ECON325, ART297, ART289, HUM203, MAN374, KOR202, HUM291, ART295, ART261, ART298, ECON318, ART266, ART267, KOR301, HUM310, ART226, HUM202, ART262, ART264, ART227, HUM412, HUM105, MAN328, MAN414, MAN412, MAN437, ART268, ART265, ART269, ART270, PR414, ART263,

## Area Elective Course List

AET 306	Area Elective Course	(0-0)6
AET 316	Area Elective Course	(0-0)6
AET 326	Area Elective Course	(0-0)6
AET 336	Area Elective Course	(0-0)6
AET 346	Area Elective Course	(0-0)6
AET 356	Area Elective Course	(0-0)6

AET 366	Area Elective Course	(0-0)6
AET 376	Area Elective Course	(0-0)6
AET 386	Area Elective Course	(0-0)6
AET 396	Area Elective Course	(0-0)6
AET 406	Area Elective Course	(0-0)6
AET 416	Area Elective Course	(0-0)6
AET 426	Area Elective Course	(0-0)6
AET 436	Area Elective Course	(0-0)6
CE 404	Occupational Safety and Health	(3-0)6
CE 405	Design of Dams	(3-0)6
CE 406	Urban Hydraulics	(3-0)6
CE 407	Highway Materials and Mixture Design	(3-0)6
CE 408	Computer Aided Highway Design	(3-0)6
CE 410	Advanced Structural Steel Design	(3-0)6
CE 411	Design and Construction of Transportation Facilities	(3-0)6
CE 416	Geotechnical Site Characterization	(3-0)6
CE 417	Rock Mechanics	(3-0)6
CE 418	Slope Stability	(3-0)6
CE 419	Deep Excavations and Retaining Structures	(3-0)6
CE 420	Tunnelling	(3-0)6
CE 421	Applied Solid Mechanics	(3-0)6
CE 423	Structural Optimization	(3-0)6
CE 424	Structural Systems	(3-0)6
CE 425	Construction Planning and Cost Estimating	(3-0)6
CE 429	Irrigation and Drainage	(3-0)6
CE 431	Computer Applications in Structural Engineering	(3-0)6
CE 433	Design of Coastal Structures	(3-0)6
CE 434	Advanced Transportation Engineering	(3-0)6
CE 437	Structural Dynamics	(3-0)6
CE 438	Prestressed Concrete Fundamentals	(3-0)6
CE 439	Introduction to Pavement Design	(3-0)6

CE 440	Earthquake Engineering	(3-0)6
CE 441	Earthquake Resistant Design	(3-0)6
CE 442	Advanced Materials of Construction	(3-0)6
CE 443	Advanced Concrete Materials	(3-0)6
CE 444	Analysis of Framed Structures	(3-0)6
CE 447	Computer Aided Analysis and Design in Structural Engineering	(3-0)6
CE 449	Computer Aided Analysis and Design of Reinforced Concrete Structural Members	(3-0)6
CE 454	Computer Applications in Geotechnical Engineering	(3-0)6
CE 456	Design and Construction of Tall Building Systems	(3-0)6
CE 463	International Construction Contracts	(3-0)6
CE 464	Construction Scheduling and Cost Control	(3-0)6
CE 466	Construction and Design of Renewable Energy Projects	(3-0)6
CE 468	Emerging Technologies in Civil Engineering	(3-0)6
CE 470	Open Channel Hydraulics	(3-0)6
CE 471	Integrated Coastal Zone Management	(3-0)6
CE 472	Dimensional Analysis and Hydraulic Modeling	(3-0)6
CE 473	Coastal Hydraulics	(3-0)6
CE 475	Porous Media Flow	(3-0)6
CE 479	Applied Water Resources Engineering	(3-0)6
CE 488	Airport Planning and Design	(3-0)6
CE 491	CO_OP Practice I	(3-0)6
CE 493	CO_OP Practice II	(3-0)6
CE 498	Undergraduate Research Project	(3-0)6

## Course Descriptions

CE 101	Engineering Fundamentals	(1-0)2.5
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Introduction, historical development of science, engineering and industry, definitions and methodologies of engineering and science, functions of engineers, roles and types of engineers, engineering, society and environment, engineering and mathematics, safety in engineering, design and applications in engineering, research in

CE 110	Engineering Graphics and Design	(1-3)4.5
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Introduction to engineering drawing, CAD systems and CAD software, geometrical constructions, orthographic projections, first and third angle projections of principal views from 3D models, orthographic projections: projections of the third principal view from two given principal, auxiliary and detail viewing















Rigorous scholarly research, research methodologies, review of background knowledge, academic reading.

CE 499 Summer Practice II (0-0)10

Following the procedures used during the design phase of various types of civil engineering projects for a period of 30 days and preparing a report at the end of this period.

CHE 105 General Chemistry (3-2)5

Matter and measurement, atoms, molecules and ions, stoichiometry: calculations with chemical formulas and equations, oxidation-reduction reactions, thermochemistry, electronic structure of atoms, periodic properties of the elements, basic concepts of chemical bonding, molecular geometry and bonding theories, gases, intermolecular forces, liquids and solids, chemical kinetics, chemical thermodynamics, electrochemistry.

CMPE 102 Computer Programming (2-2)4

The objective of this course is to provide the basics of programming concepts using Python programming language and enable students to gain experience in laboratory environment.

ENG 101 English For Academic Purposes I (4-0)3.5

English language skills, especially academic skills, such as reading comprehension, vocabulary building and critical analysis of texts; listening and note-taking, class discussions, presentations, writing, research assignments and use of technology.

ENG 102 English for Academic Purposes II (4-0)3.5

Academic skills such as reading comprehension, class discussions, use of academic vocabulary and critical analysis of texts; research assignments and review of the English language structure; skills such as listening and note-taking, analysis of written products, writing, presentation and use of technology.

ENG 201 English for Academic Purposes III (3-0)3

Advanced reading and writing skills, applying critical reading skills and strategies, identifying the organization of a reading text, main ideas of the texts, and the author's main purpose, summarizing a given text, outlining and writing an argumentative essay.

ENG 202 English for Academic Purposes IV (3-0)3

Preparing and writing research reports and delivering effective oral/written informative and persuasive presentations; gathering information, organizing data, outlining, using appropriate techniques in presentation and delivering for a maximum impact, using visual aids and citation effectively.

ENG 301 English for Occupational Purposes I (3-0)3

Job-related communication skills; the functions such as describing relationships at work, discussing performance reviews and giving feedback, discussing plans and arrangements, using social media for professional communication, discussing on recruitment tests and job interviews, presenting a service or product, writing reviews on websites

ENG 302 English for Occupational Purposes II (3-0)3

More detailed job-related communication skills;describing and organising meetings,developing communicational styles in various cultural settings,handling mistakes and apologizing,getting familiar with marketing styles and advertising,deciding how to adapt and market a product in different countries,

HIST 101 Principles of Atatürk and History of Turkish Revolution I (2-0)2

French Revolution; structure and geopolitic positioning of Ottoman Empire, reasons of its decline; Westernization movements, First and Second Constitutional Monarchy declarations; Libya and Balkan wars; First World War; period before the War of Independence, congresses, National Pact, establishment of Turkish Grand National Assembly.

HIST 102 Principles of Atatürk and History of Turkish Revolution II (2-0)2

War of Independence; Lausanne Treaty; declaration of the Republic; removal of sultanic rule and caliphate; Atatürk's revolutions; establishment of national economy; Second World War, before and after; Turkish Republic after 1960.

HIST 221 History of Civilization (3-0)3

A chronological order of the rise of civilizations from Sumer until the Scientific Revolution.

IE 220 Probability and Statistics (3-0)5

Introduction to probability and statistics; random variables and probability distributions; expected value; sampling distributions; one and two sample estimation problems; test of hypotheses; simple linear regression.

IE 305 Engineering Economy (2-0)5

Economic analysis for engineering and managerial decision-making; cash flows, effect of time and interest rate on money and physical assets; methods of evaluating alternatives: present worth, future worth, annual worth, rate-of-return and benefit/cost ratios; depreciation and taxes; effects of inflation.

KRY 111 Career Planning (1-0)1

Being a student at Atilim University, Student-centered programs at Atilim University, Faculty, Department presentations, Career Planning and Coop Program, Erasmus, CV writing types, Interview techniques, Effective Communication and presentation techniques, Intelligence and Personality

MATE 207 Introduction to Materials Engineering (3-0)5

Historical perspective and classification of materials; atomic structure and theory; bonding in solids; the structure of crystalline solids; fundamental mechanical properties of materials; phase diagrams; thermal processing of metal alloys; properties and use of ceramics, glasses and composites; material selection; design and economical considerati

MATH 151 Calculus I (4-2)7

Preliminaries, limits and continuity, differentiation, applications of derivatives, L'Hopital's Rule, integration, applications of integrals, integrals and transcendental functions, integration techniques and improper integrals, squences.

MATH 152 Calculus II (4-2)7

Infinite series, vectors in the plane and polar coordinates, vectors and motions in space, multivariable

functions and their derivatives, multiple integrals: double integrals, areas, double integrals in polar coordinates, triple integrals in rectangular, cylindrical and spherical coordinates, line integrals, Independence of path, Green's theorem.

MATH 275      Linear Algebra      (4-0)6

Linear equations and matrices, real vector spaces, inner product spaces, linear transformations and matrices, determinants, eigenvalues and eigenvectors.

MATH 276      Differential Equations      (4-0)6

First-order, higher-order linear ordinary differential equations, series solutions of differential equations, Laplace transforms, linear systems of ordinary differential equations, Fourier analysis and partial differential equations.

MATH 380      Numerical Methods for Engineers      (3-1)5

Solution of nonlinear equations, solution of linear systems, eigenvalues and eigenvectors, interpolation and polynomial approximation, least square approximation, numerical differentiation, numerical integration.

PHYS 101      General Physics I      (3-2)6

Measurement, motion along a straight line, vectors, motion in two and three dimensions, force and motion I, force and motion II, kinetic energy and work, potential energy and conservation of energy, center of mass and linear momentum, rotation, rolling, torque, and angular momentum, equilibrium and elasticity.

PHYS 102      General Physics II      (3-2)6

Electric charge, electric fields, Gauss' law, electric potential, capacitance, current and resistance, circuits, magnetic fields, magnetic fields due to currents, induction and inductance.

TURK 401      Turkish Language I      (2-0)2

Languages and their classification; history of Turkish language, its spread over the world and its place among other languages; Turkish language in the republic era; orthography; expressions; foreign words, suffixes and prefixes; punctuation; language and verbalism.

TURK 402      Turkish Language II      (2-0)2

Written expression and its genres; bibliography; sentence structure and types; misexpression; verbal expressions.