ALANYA HAMDULLAH EMİN PAŞA UNIVERSITY
FACULTY ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING

CURRICULUM

1ST YEAR FALL SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
TKL 101 / YTO 101	Turkish Language 1 / Turkish Language For Foreigners 1	2	0	2	2
MAT 105	Calculus 1	3	0	3	5
PHY 101	Physics 1	3	0	3	5
ENG 101	English 1	4	0	4	5
GE 101	University Culture	2	0	2	2
CSE 101	Introduction to Computer Engineering	3	0	3	5
CSE 103	Computer Programming 1	3	2	4	6
Total Credits				**22**	**30**

1ST YEAR SPRING SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
TKL 102 / YTO 102	Turkish Language 2 / Turkish Language For Foreigners 1	2	0	2	2
MAT 106	Calculus 2	3	0	3	5
PHY 102	Physics 2	3	2	4	5
ENG 102	English 2	4	0	4	5
GE 102	City Culture	2	0	2	2
CSE 102	Discrete Mathematics	3	0	3	5
CSE 104	Computer Programming 2	3	2	4	6
Total Credits				**22**	**30**

2ND YEAR FALL SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
HIST 201 / YTT 201	History of Turkey 1 / Turkish History For Foreigners 1	2	0	2	2
MAT 201	Linear Algebra	3	0	3	5
GE 201	Social Responsibility and Ethics	2	0	2	3
CSE 201	Data Structures	3	2	4	6
CSE 203	Electronics for Computer Engineers	2	2	3	5
CSE 205	Digital Circuits and Systems	3	2	4	6
ELEC 201 [A]	Social Elective	3	0	3	3
Total Credits				**22**	**30**

2ND YEAR 2. SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
HIST 202/YTT 202	History of Turkey 2 / Turkish History For Foreigners 2	2	0	2	2
MAT 202	Differential Equations	4	0	4	5
CSE 202	Programming Languages	2	2	3	6
CSE 204	Database Management Systems	3	2	4	5
CSE 206	Computer Organization	3	0	3	5
ELEC 202 [A]	Social Elective	-	-	3	3
ELEC 204 [B]	Technical Elective	2	2	3	4
Total Credits				**22**	**30**

3RD YEAR FALL SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
MAT 301	Probability Theory and Statistics	3	0	3	4
CSE 301	Algorithm Design and Analysis	3	2	4	5
CSE 303	Operating Systems	2	2	3	4
CSE 305	Microprocessors and Microcomputers	2	2	3	4
CSE 307	Data Communication and Computer Networks	3	2	4	5
ELEC 301 [A]	Social Elective	-	-	3	3
CSE 300	Internship Work 1	0	0	0	5
Total Credits				**20**	**30**

3RD YEAR SPRING SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS
CSE 302	Project Design	3	0	3	5
CSE 304	Software Engineering	3	2	4	5
CSE 306	Computer Architecture	2	2	3	5
CSE 308	Formal Languages and Automata Theory	2	2	3	4
ELEC 302 [A]	Social Elective	-	-	3	3
ELEC 304 [B]	Technical Elective 1	2	2	3	4
ELEC 306 [B]	Technical Elective 2	2	2	3	4
Total Credits				**22**	**30**

4TH YEAR FALL SEMESTER

Course Code	Course Name	Th.	Lb.	AHEP Credits	ECTS

CSE 401	Senior Design Project	0	8	4	7
ELEC 401 [A-U]	Social Elective 1	2	0	2	3
ELEC 403 [A-D]	Social Elective 2	2	0	2	3
ELEC 405 [B]	Technical Elective 1	2	2	3	4
ELEC 407 [B]	Technical Elective 2	2	2	3	4
ELEC 409 [B]	Technical Elective 3	2	2	3	4
CSE 400	Internship Work 2	0	0	0	5
Total Credits				**17**	**30**

4TH YEAR SPRING SEMESTER					
Course Code	**Course Name**	**Th.**	**Lb.**	**AHEP Credits**	**ECTS**
ELEC 4021 [A-U]	Social Elective 1	2	0	2	3
ELEC 404 [A-D]	Social Elective 2	2	0	2	3
ELEC 406 [B]	Technical Elective 1	2	2	3	6
ELEC 408 [B]	Technical Elective 2	2	2	3	6
ELEC 409 [B]	Technical Elective 3	2	2	3	6
ELEC 409 [B]	Technical Elective 4	2	2	3	6
Total Credits				**16**	**30**

Credits: 163
ECTS Total: 240

Th.: Theoretical
Lb.: Lab
AC: AHEP Credit
ECTS: European Credit Transfer System

Language of instruction: Medium of instruction is English
Education period: One-year English preparatory class + 4 years

Academic Staff:

Assist. Prof. Dr. Mehmet Karakoç
Assist. Prof. Dr. Emre Güngör
Assist. Prof. Dr. Cevdet Dengi
Assist. Prof. Dr. Hüseyin Kusetoğulları
Research Assistant Caner Songül

ELECTIVE COURSES*

Course Code	Course Name	Lec.	Lab.	Credit	ECTS
ENG 201 / ENG 301	English 3	2	2	3	4
ENG 202 / ENG 302	English 4	2	2	3	4
ELG 201	German 1	3	0	3	3
ELG 202	German 2	3	0	3	3

Course Code	Course Name				
ELG 301	German 3	3	0	3	3
ELG 302	German 4	3	0	3	3

ELECTIVE COURSES**

Course Code	Course Name	Lec.	Lab.	Credit	ECTS
GE 401	Systems Thinking	2	0	2	3
GE 402	Innovation and Entrepreneurship	2	0	2	3
CSE 40X	Engineering Economics	-	-	-	-
CSE 40X	Engineering and Informatics Ethics	-	-	-	-
CSE 40X	IT Law	-	-	-	-
CSE 20X	Principles of User Interface Design	-	-	-	-
CSE 20X	Visual Programming	-	-	-	-
CSE 20X	Technical Programming	-	-	-	-
CSE 20X	Design Patterns	-	-	-	-
CSE 20X	Web Programming	-	-	-	-
CSE 20X	Mobile Programming	-	-	-	-
CSE 20X	Human-Computer Interaction	-	-	-	-
CSE 30X	Introduction to Artificial Intelligence	-	-	-	-
CSE 30X	Computer Graphics	-	-	-	-
CSE 30X	Introduction to Image Processing	-	-	-	-
CSE 30X	Introduction to Computer Vision	-	-	-	-
CSE 30X	Introduction to Pattern Recognition	-	-	-	-
CSE 30X	Introduction to Data Mining	-	-	-	-
CSE 30X	Introduction to Big Data	-	-	-	-
CSE 30X	Operations Research	-	-	-	-
CSE 30X	Project Management	-	-	-	-
CSE 30X	Software Project Management	-	-	-	-
CSE 40X	Profession Seminar 1	-	-	-	-
CSE 40X	Profession Seminar 2	-	-	-	-
CSE 40X	Systems Programming	-	-	-	-
CSE 40X	Scientific Programming	-	-	-	-
CSE 40X	Game Programming	-	-	-	-
CSE 40X	Virtual Reality	-	-	-	-
CSE 40X	Artificial Neural Networks and Its Applications	-	-	-	-
CSE 40X	Optimization Theory and Techniques	-	-	-	-
CSE 40X	Evolutionary Computing: Genetic Algorithms	-	-	-	-
CSE 40X	Introduction to Machine Learning	-	-	-	-
CSE 40X	Introduction to Deep Learning	-	-	-	-
CSE 40X	Introduction to Data Science	-	-	-	-
CSE 40X	Information Systems Security	-	-	-	-

COURSE CONTENTS

1ST YEAR FALL SEMESTER

CSE 101 Introduction to Computer Engineering
No prerequisite
Credit: (3 + 0) ECTS: 5
History of Computer Science, computer software-and-hardware, algorithm and pseudo-code concepts, flow-charts and unified modeling language (UML), program-software-programming-application concepts, computer technology, IT (information technology) systems, various programming languages and integrated development environments (IDEs), and core knowledge with applications in the field of Computer Engineering.

CSE 103 Computer Programming 1
No prerequisite
Credit: (3+2) ECTS: 6
Problem solving, hardware-software relation, algorithm concept, constants, variables and statements. Arithmetical, comparative and logical statements, I/O statements. Conditional and loop structures, arrays, character and string operations, functions.

PHY 101 Physics 1
No prerequisite
Credit: (3 + 2) ECTS: 5
Numerical approach, measurements, quantities and units; vectors and operations with vectors; kinematics of mechanical motion and movements; dynamics of mechanical motion, Newton's laws, forces, momentum, finding motion using forces; rotational motion, torque and angular momentum, rotation of objects; conservation of energy, linear and angular momentum; importance and applications of conservation laws in Physics; oscillations and resonance, basic wave motion, basic properties of waves.

MAT 105 Calculus 1
No Prerequisite
Credit: (2+0) ECTS: 5
Functions, function plots, calculating limits and derivatives, indefinite integrals.

1ST YEAR SPRING SEMESTER

CSE 102 Discrete Mathematics
No Prerequisite
Credit: (3 + 0) ECTS: 5
Definition of discrete mathematics, sets, mathematical proof methods, logical methods, Boolean algebra and functions..

CSE 104 Computer Programming 2

No prerequisite
Credit: (3 + 2) ECTS: 6
Basic concepts of object oriented programming, structures, classes, properties, methods, objects, encapsulation, inheritance, polymorphism,operator overloading, exceptions and exception handling, dynamic memory allocation and management, referencing, debugging, different integrated development environments.

PHY 102 Physics 2
No prerequisite
Credit: (3 + 2) ECTS: 5
Electric charge and electric field, capacitance, dielectrics, energy storage, circuits and resistance, direct current circuits, Kirchhoff's Laws, magnetism, magnetic field sources, electromagnetic induction and Faraday's law, induction, electromagnetic oscillations, alternative current circuits. Maxwell equations and electromagnetic waves. Light reflection and diffraction, lenses and optical instruments.

MAT 106 Calculus 2
No prerequisite
Credit: (3+0) ECTS: 5
Transcendental functions, L'Hopital rule, integral solving techniques, first order differential equations, power series, Taylor and Maclaurin series, integral calculations, polar coordinates, vector operations, partial derivatives, multiple integrals.

https://ects.ahep.edu.tr/en