

ISTANBUL AREL UNIVERSITY
FACULTY OF ENGINEERING & ARCHITECTURE
DEPARTMENT OF COMPUTER ENGINEERING

YEAR ONE

1st Semester

2nd Semester

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN101	Computer Engineering Orientation	C	3	0	3	5	
MTH111	Linear Algebra (with MATLAB)	C	2	2	3	5	
CEN103	Introduction to Information Technologies	C	2	2	3	4	
MTH101	Calculus-I	C	3	2	4	5	
MTH107	Physics-I	C	3	2	4	5	
TRL101	Turkish Language-I	C	2	0	2	3	
ENG105	Communication Skills and Academic Reporting-I	C	2	2	3	3	
Total Credits			17	10	22	30	

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN102	Algorithms and Programming	C	2	2	3	5	
CEN104	Probability and Statistics	C	3	0	3	4	
CEN106	Discrete Mathematics	C	3	0	3	5	
MTH102	Calculus-II	C	3	2	4	5	
MTH108	Physics-II	C	3	2	4	5	
TRL102	Turkish Language-II	C	2	0	2	3	
ENG106	Communication Skills and Academic Reporting-II	C	2	2	3	3	
Total Credits			18	8	22	30	

YEAR TWO

3rd Semester

4th Semester

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN201	Object Oriented Programming-I	C	2	2	3	5	CEN102
CEN203	Operating Systems	C	3	0	3	4	
EEN211	Electric Circuits Measurements and Laboratory	C	3	2	4	5	
EEN206	Digital Design-I and Laboratory	C	2	2	3	5	
MTH211	Differential Equations	C	2	2	3	5	
AHR101	Principles of Atatürk and History of Reforms-I	C	2	0	2	3	
ENG205	Professional English-I	C	2	2	3	3	
Total Credits			16	10	21	30	

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN202	Object Oriented Programming-II	C	2	2	3	4	CEN201
CEN204	Data Structures	C	2	2	3	4	CEN201
CEN206	Systems Programming	C	2	2	3	4	CEN102, CEN203
CEN208	Computer Organization	C	3	0	3	3	
EEN208	Signals and Systems	C	2	2	3	5	
EEN212	Electronic Devices, Circuits and Laboratory	C	3	2	4	4	
AHR102	Principles of Atatürk and History of Reforms-II	C	2	0	2	3	
ENG206	Professional English-II	C	2	2	3	3	
Total Credits			18	12	24	30	

YEAR THREE

5th Semester

6th Semester

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN301	Database Management Systems	C	2	2	3	5	
CEN303	Web Programming	C	2	2	3	6	
CEN305	Data Communications	C	3	0	3	5	
CEN307	Real-Time Systems	C	3	0	3	5	
EEN305	Microprocessors and Laboratory	C	3	2	4	6	EEN206
EAR101	History of Civilization	C	3	0	3	3	
CEN381	Summer Training-I	C	0	0	0	0	
Total Credits			16	6	19	30	

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN302	Computer Graphics	C	3	0	3	6	CEN201
CEN304	Computer Networks	C	3	0	3	5	
CEN306	Numerical Analysis for CEN	C	3	0	3	5	
CEN308	Information Systems Analysis and Design	C	3	0	3	6	
CEN310	Formal Languages and Automata	C	3	0	3	5	
BUS112	History and Philosophy of Science	C	3	0	3	3	
Total Credits			18	0	18	30	

YEAR FOUR

7th Semester

8th Semester

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN491	Graduation Design Project	C	1	4	3	8	
CEN401	Software Engineering	C	3	0	3	4	
CEN481	Summer Training-II	C	0	0	0	0	
	Technical Elective I	E			3	5	
	Technical Elective II	E	3	0	3	5	
	Technical Elective III	E			3	5	
BUS216	Fundamentals of Business Administration	C	3	0	3	3	
Total Credits			10	4	18	30	

Code	Course Name		T	P	C	ECTS	Prerequisite
CEN492	Graduation Project	C	1	4	3	16	CEN491
	Technical Elective IV	E			3	5	
	Technical Elective V	E			3	5	
BUS109	Economics	C	3	0	3	4	
Total Credits			4	4	12	30	

HARDWARE AND NETWORK TRACK

COURSE CODE	COURSE NAME		T	P	C	ECTS
CEN441	Advanced Computer Architecture		3	0	3	5
CEN443	Communication Techniques & Protocols		3	0	3	5
CEN445	Introduction to VLSI Design		3	0	3	5
CEN447	Wireless Communications		3	0	3	5
CEN449	Introduction to Robotics		3	0	3	5
CEN451	Parallel Computing		3	0	3	5
CEN442	Computer and Network Security		3	0	3	5
CEN444	Embedded System Design		3	0	3	5
CEN446	Network Programming		2	2	3	5
CEN448	Introduction to Cryptography		3	0	3	5
CEN452	Distributed Systems		3	0	3	5

COMPUTER VISION AND INTELLIGENT SYSTEMS TRACK

COURSE CODE	COURSE NAME		T	P	C	ECTS
CEN461	Image Processing		2	2	3	5
CEN463	Artificial Intelligence		3	0	3	5
CEN465	Image Acquisition and Reconstruction		3	0	3	5
CEN467	Neural Networks		3	0	3	5
CEN469	Introduction to Fuzzy Systems		3	0	3	5
CEN462	Speech and Audio Processing		2	2	3	5
CEN464	Medical Image Processing		2	2	3	5
CEN466	Data Mining		3	0	3	5
CEN468	Computer Vision and Pattern Recognition		3	0	3	5

2 Major Track

2 Minor Track

1 Elective List (Major)