

FACULTY OF ENGINEERING AND NATURAL SCIENCES DEPARTMENT OF COMPUTER ENGINEERING COMPUTER ENGINEERING PROGRAMME (IN ENGLISH)

2024-2025 FALL SEMESTER UNDERGRADUATE CURRICULUM

Semester 2

Document Code: FR.OGR.200
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Semester 1 Code	Common Titelo	т		c	ECTS	C tartan	Dama and de
	Course Title	1	A	С	ECIS	Status	Prerequisite
PHYS113	Physics-I	2	2	3	5	Compulsory	
MATH113	Mathematics I	3	2	4	6	Compulsory	
CENG103	Introduction to Computer Engineering	3	0	3	7	Compulsory	
CENG101	Introduction to Algorithms and Programming	2	2	3	8	Compulsory	
	Elective Foreign Language	2	2	3	4	Elective	
		Total Cred	lit	16	30		

Code	Course Title	TA	С	ECTS	Status	Prerequisite
MATH265	Probability &Statistics I	3 0	3	5	Compulsory	MATH113
MATH215	Mathematics III	2 2	3	6	Compulsory	MATH113
CENG213	Object Oriented Programming -II	2 2	3	5	Compulsory	CENG106
CENG203	Data Structures	3 0	3	5	Compulsory	CENG106
CENG215	Digital Electronics Circuits	2 2	3	4	Compulsory	
IE367	Occupational Health and Safety	3 0	3	5	Compulsory	
Semester 5		Total Credit	18	30		
	Course Title				1	Prerequisite
Code	Course Title Turkish-I	ТА		30 ECTS 2	Status	Prerequisite
Code TRD111		TA		ECTS	1	Prerequisite CENG210
Code TRD111 CENG317	Turkish-I	T A 2 0		ECTS 2	Status Compulsory	
Code TRD111 CENG317 CENG313	Turkish-I Computer Architecture	T A 2 0 3 0		ECTS 2 6	Status Compulsory Compulsory	CENG210
Code TRD111 CENG317 CENG313	Turkish-I Computer Architecture Automata Theory	T A 2 0 3 0 3 0		ECTS 2 6 5	Status Compulsory Compulsory Compulsory	CENG210
Semester 5 Code TRD111 CENG317 CENG313 CENG319	Turkish-I Computer Architecture Automata Theory Algorithm Analysis	T A 2 0 3 0 3 0 3 0 3 0	C 2 3 3 3	ECTS 2 6 5 5	Status Compulsory Compulsory Compulsory Compulsory	CENG210

Code	Course Title	т	A	С	ECTS	Status	Prerequisite
PHYS114	Physics-II	2	2	3	5	Compulsory	PHYS113
MATH114	Mathematics II	3	2	4	6	Compulsory	MATH113
CENG106	Object Oriented Programming-I	2	2	3	7	Compulsory	CENG101
CENG110	Discrete Structures	3	0	3	5	Compulsory	
CLP001	Career and Life Planning	0	2	1	3	Compulsory	
	Elective Foreign Language	2	2	3	4	Elective	
		Total Cre	dit	17	30		

Course Title	Т	А	C	ECIS	Status	Prerequisite
Mathematics IV	2	2	3	6	Compulsory	MATH114
Numerical Methods	2	2	3	4	Compulsory	MATH113
Digital Circuit Design	2	2	3	5	Compulsory	CENG110
Programming Languages and Applications	2	2	3	5	Compulsory	CENG106
Operating Systems	3	0	3	5	Compulsory	
Computer Networks - I	3	0	3	5	Compulsory	
Tot	al Cre	dit	18	30		
	Mathematics IV Namerical Methods Digital Circuit Design Programming Languages and Applications Operating Systems Computer Networks - 1	Mathematics IV 2 Numerical Methods 2 Digital Circuit Design 2 Programming Languages and Applications 2 Operating Systems 3 Computer Networks - 1 3	Mathematics IV 2 2 Numerical Methods 2 2 Digital Circuit Design 2 2 Programming Languages and Applications 2 2 Operating Systems 3 0 Computer Networks - 1 3 0	Mathematics IV 2 2 3 Numerical Methods 2 2 3 Digital Circuit Design 2 2 3 Programming Languages and Applications 2 2 3 Operating Systems 3 0 3	Mathematics IV 2 2 3 6 Numerical Methods 2 2 3 4 Digital Circuit Design 2 2 3 5 Programming Languages and Applications 2 2 3 5 Operating Systems 3 0 3 5	Mathematics IV 2 2 3 6 Compulsary Numerical Methods 2 2 3 4 Compulsary Digital Circuit Design 2 2 3 5 Compulsary Programming Languages and Applications 2 2 3 5 Compulsary Operating Systems 3 0 3 5 Compulsary Onputer Networks - 1 3 0 3 5 Compulsary

Semester 6							
Code	Course Title	Т	А	С	ECTS	Status	Prerequisite
TRD112	Turkish-II	2	0	2	2	Compulsory	
CENG318	Microprocessors	2	2	3	4	Compulsory	CENG210
CENG314	Software Engineering	3	0	3	5	Compulsory	CENG106
ECO102	Macroeconomics	3	0	3	7	Compulsory	
	Program Elective Course	3	0	3	7	Elective	
	Faculty Elective Course	3	0	3	5	Elective	
		Total Cree	dit	17	30		

Semester 7		-			nomo	-	
Code	Course Title				ECTS	Status	Prerequisite
CENG497	Computer Engineering Design	0	2	1	4	Compulsory	
BBA222	Entrepreneurship Applications	2	0	2	3	Compulsory	
ATA111	Atatürk Principles and The History of Turkish Revolution I	2	0	2	2	Compulsory	
CENG413	Software Quality Standards	3	0	3	9	Compulsory	
INT001	Internship 1	0	0	0	4	Compulsory	
	Program Elective Course	3	0	3	7	Elective	
	Total G	re	dit	11	29		
	TOTAL CREDIT		12	27			
	TOTAL ECTS		24	10			

Code	Course Title	Т	А	С	ECTS	Status	Prerequisite
CENG498	Computer Engineering Graduation Project	0	4	2	4	Compulsory	
ATA112	Atatürk Principles and The History of Turkish Revolution	2	0	2	2	Compulsory	
INT002	Internship 2	0	0	0	4	Compulsory	
	Program Elective Course	3	0	3	7	Elective	
	Program Elective Course	3	0	3	7	Elective	
	Program Elective Course	3	0	3	7	Elective	
	Total Credi		dit	13	31		

Abbreviations: T=Weekly hours: theoretical; A=Weekly hours: application; C=Credits in Turkish System; ECTS= European Credit Transfer System



ELECTIVE COURSES Semester 2

Code	Course Title		Т	Α	С	ECTS	Status	Prerequisite
	<u>.</u>	SECOND FOREIGN LANGE	JAGE					
				1				
	<u>.</u>	DEPARTMENTAL ELECT	IVE					
				1				
		FACULTY ELECTIVE						
		UNIVERSITY ELECTIV	Е					

Code	Course Title			T.	A	С	ECTS	Status	Prerequisite
	•	SECOND FORE	EIGN LANGUAGE						
		DEPARTMEN	TAL ELECTIVE						
	•	FACULTY	ELECTIVE						
		UNIVERSI	TY ELECTIVE						

Code	Course Title	TAC	ECTS	Status	Prerequisite
	SECOND FOREIGN LANGUA	GE			
	DEPARTMENTAL ELECTIV	ΈE			
CENG391	Database Management Systems	3 0 3	7	Elective	
CENG371	File Organization and Management	3 0 3	7	Elective	
CENG379	Graphical Interface Design	3 0 3	7	Elective	
CENG389	Operating Systems Applications	3 0 3	7	Elective	
CENG393	Computer Networks II	3 0 3	7	Elective	
CENG372	Object Oriented Design	3 0 3	7	Elective	
CENG374	Internet Programming	3 0 3	7	Elective	
CENG376	Image Processing	3 0 3	7	Elective	
CENG396	Artificial Intelligence	3 0 3	7	Elective	
CENG394	Data Mining	3 0 3	7	Elective	
CENG382	Computer Graphics	3 0 3	7	Elective	
CENG471	Game Software Development	3 0 3	7	Elective	
CENG473	Quantum Computer Engineering	3 0 3		Elective	
CENG475	Application Development Frameworks	3 0 3	7	Elective	
CENG485	Business Process Management	3 0 3	7	Elective	
CENG487	Advanced Computational Methods	3 0 3	7	Elective	
CENG489	Pattern Recognition	3 0 3	7	Elective	
CENG491	Computer Security	3 0 3	7	Elective	
CENG477	Analysis and Design of Computer Systems	3 0 3	7	Elective	
CENG474	Engineering and Informatics Ethics	3 0 3	7	Elective	
CENG482	Embedded Systems	3 0 3	7	Elective	
CENG476	Project Management	3 0 3	7	Elective	
CENG486	Compiler Design	3 0 3	7	Elective	
CENG488	Advanced Topics in Computer Engineering	3 0 3	7	Elective	
CENG478	Medical Informatics	3 0 3	7	Elective	
CENG484	Parallel Programming	3 0 3	7	Elective	
SWE473	Embedded Software Development	3 0 3	7	Elective	
SWE488	Advanced Topics in Software Engineering	3 0 3	7	Elective	
SWE486	Software Product Line Management	3 0 3	7	Elective	
	FACULTY ELECTIVE				
ENG301	Management for Engineers	3 0 3	5	Elective	
ENG303	Project Management	3 0 3		Elective	
ENG307	Biotechnology:Combining Engineering with the Biological Science	3 0 3		Elective	
ENG316	Introduction to Traffic Engineering	3 0 3		Elective	
ENG318	Introduction to Environmental Engineering	3 0 3		Elective	
ENG320	Agile Product Development	3 0 3		Elective	
ENG353	Electric Drives	3 0 3		Elective	
ENG341	Introduction to Epigenetic Health	3 0 3	5	Elective	
ENG343	Introduction to Forensic Science	3 0 3	5	Elective	
ENG347	Technical Writing and Literature Search	3 0 3	5	Elective	
ENG349	Introduction to Bioinformatics and Biological Data Analysis	3 0 3	5	Elective	
	UNIVERSITY ELECTIVE				

Code	Course Title	Т	А	С	ECTS	Status	Prerequisite
	SECOND FOREIGN	LANGUAGE					
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	DEPARTMENTAI		_		r	T	Т
CENG371	File Organization and Management		0	3	7	Elective	
CENG379	Graphical Interface Design	3	0	3	7	Elective	
CENG389	Operating Systems Applications	3	0	3	7	Elective	
CENG393	Computer Networks II	3	0	3	7	Elective	
CENG372	Object Oriented Design	3	0	3	7	Elective	
CENG374	Internet Programming	3	0	3	7	Elective	
CENG376	Image Processing	3	0	3	7	Elective	
CENG396	Artificial Intelligence	3	0	3	7	Elective	
CENG394	Data Mining	3	0	3	7	Elective	
CENG382	Computer Graphics	3	0	3	7	Elective	
CENG471	Game Software Development	3	0	3	7	Elective	
CENG473	Quantum Computer Engineering	3	0	3	7	Elective	
CENG475	Application Development Frameworks	3	0	3	7	Elective	
CENG485	Business Process Management	3	0	3	7	Elective	
CENG487	Advanced Computational Methods	3	0	3	7	Elective	
CENG489	Pattern Recognition	3	0	3	7	Elective	
CENG491	Computer Security	3	0	3	7	Elective	
CENG477	Analysis and Design of Computer Systems	3	0	3	7	Elective	
CENG474	Engineering and Informatics Ethics	3	0	3	7	Elective	
CENG482	Embedded Systems	3	0	3	7	Elective	
CENG476	Project Management	3	0	3	7	Elective	
CENG486	Compiler Design	3	0	3	7	Elective	
CENG488	Advanced Topics in Computer Engineering	3	0	3	7	Elective	
CENG478	Medical Informatics	3	0	3	7	Elective	
CENG484	Parallel Programming	3	0	3	7	Elective	
SWE473	Embedded Software Development	3	0	3	7	Elective	
SWE488	Advanced Topics in Software Engineering	3	0	3	7	Elective	
SWE486	Software Product Line Management	3	0	3	7	Elective	
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Code	Course Title	Т	A	C	ECTS	Status	Prerequisite
	SECO	ND FOREIGN LANG	U	\GE			•
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Course Title	1	r []	A	c	ECTS	Status	Prerequisite
•	SECOND FOREIGN LANC	GU	JA	GE			
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Code	Course Title	Т	Α	С	ECTS	Status	Prerequisite
	SECOND FOREIGN	LANG	UA	GE			
	DEPARTMENTAL	LELEC	ΓIV	/E			
CENG391	Database Management Systems	3		3	7	Elective	
CENG371	File Organization and Management	3	0	3	7	Elective	
CENG379	Graphical Interface Design	3	0	3	7	Elective	
CENG389	Operating Systems Applications	3	0	3	7	Elective	
CENG393	Computer Networks II	3	0	3	7	Elective	
CENG372	Object Oriented Design	3	0	3	7	Elective	
CENG374	Internet Programming	3	0	3	7	Elective	
CENG376	Image Processing	3	0	3	7	Elective	
CENG396	Artificial Intelligence	3	0	3	7	Elective	
CENG394	Data Mining	3	0	3	7	Elective	
CENG382	Computer Graphics	3	0	3	7	Elective	
CENG471	Game Software Development	3	0	3	7	Elective	
CENG473	Quantum Computer Engineering	3	0	3	7	Elective	
CENG475	Application Development Frameworks	3	0	3	7	Elective	
CENG485	Business Process Management	3	0	3	7	Elective	
CENG487	Advanced Computational Methods	3	0	3	7	Elective	
CENG489	Pattern Recognition	3	0	3	7	Elective	
CENG491	Computer Security	3	0	3	7	Elective	
CENG477	Analysis and Design of Computer Systems	3	0	3	7	Elective	
CENG474	Engineering and Informatics Ethics	3	0	3	7	Elective	
CENG482	Embedded Systems	3	0	3	7	Elective	
CENG476	Project Management	3	0	3	7	Elective	
CENG486	Compiler Design	3	0	3	7	Elective	
CENG488	Advanced Topics in Computer Engineering	3	0	3	7	Elective	
CENG478	Medical Informatics	3	0	3	7	Elective	
CENG484	Parallel Programming	3	0	3	7	Elective	
SWE473	Embedded Software Development	3	0	3	7	Elective	
SWE488	Advanced Topics in Software Engineering	3	0	3	7	Elective	
SWE486	Software Product Line Management	3	0	3	7	Elective	
	FACULTY EL	ECTIVI	E				
ENG302	Fuzzy Logic and Its Applications	3	0	3	5	Elective	
ENG304	Technology Manangement		0	3	5	Elective	
ENG308	Energy Policy	3	0	3	5	Elective	
ENG316	Introduction to Traffic Engineering	3	0	3	5	Elective	
ENG318	Introduction to Environmental Engineering	3	0	3	5	Elective	
ENG320	Agile Product Development	3	0	3	5	Elective	
ENG368	Wireless Network	3	0	3	5	Elective	
ENG310	Sustainable Energy & Environment	3	0	3	5	Elective	
ENG370	Principles of Machine Learning	3	0	3	5	Elective	
	UNIVERSITY E	LECTI	VE				

Code	Course Title				ECTS	Status	Prerequisite
	SECOND FOREIGN	LANG	UA	GE			
		PV DG					
CENG371	DEPARTMENTAL				7	Elective	1
CENG371 CENG379	File Organization and Management Graphical Interface Design	3	0	3	7	Elective	
CENG379 CENG389		3		3	7	Elective	
CENG389 CENG393	Operating Systems Applications Computer Networks II	3		3	7	Elective	
CENG393 CENG372	Object Oriented Design	3		3	7	Elective	
CENG372 CENG374		3		3	7		
CENG374 CENG376	Internet Programming	3		3	7	Elective	
	Image Processing			3	7	Elective	
CENG396	Artificial Intelligence	3	0	3	7	Elective	
CENG394	Data Mining	3		3	7	Elective	
CENG382	Computer Graphics	3				Elective	
CENG471	Game Software Development	3		3	7	Elective	
CENG473	Quantum Computer Engineering	3		3	7	Elective	
CENG475	Application Development Frameworks	3		3	7	Elective	
CENG485	Business Process Management	3		3	7	Elective	
CENG487	Advanced Computational Methods	3		3	7	Elective	
CENG489	Pattern Recognition	3		3	7	Elective	
CENG491	Computer Security	3		3	7	Elective	
CENG477	Analysis and Design of Computer Systems	3		3	7	Elective	
CENG474	Engineering and Informatics Ethics	3		3	7	Elective	
CENG482	Embedded Systems	3		3	7	Elective	
CENG476	Project Management	3		3	7	Elective	
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CENG488	Advanced Topics in Computer Engineering	3		3	7	Elective	
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CENG484	Parallel Programming	3		3	7	Elective	
SWE473	Embedded Software Development	3		3	7	Elective	
SWE488	Advanced Topics in Software Engineering	3		3	7	Elective	
SWE486	Software Product Line Management	3		3	7	Elective	
CENG490	OCOOP-I	3		3	7	Elective	
CENG492	OCOOP-II	3		3	7	Elective	
CENG494	OCOOP-III	3	0	3	7	Elective	
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