

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

## 2024-2025 SEMESTER UNDERGRADUATE CURRICULUM

Document Code: FR.OGR.200
Revision Number: 02
Publish Date: 25.06.1999
Revision Date: 25.07.2023

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Code	Course Title	Т	A	C	ECTS	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	
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TH113	Mathematics I	3	2	4	6	Compulsory		ĺ
IG103	Introduction to Computer Engineering	3	0	3	7	Compulsory		ĺ
IG101	Introduction to Algorithms and Programming	2	2	3	8	Compulsory		ĺ
	Elective Foreign Language	2	2	3	4	Elective		ĺ
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	Total C	re	dit	16	30			ĺ
ester 3								
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Semester 3							
Code	Course Title	T	A	C	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	
	Total C	re	dit	18	30		

Code	Course Title	T	A	C	ECTS	Status	Prerequisite
TRD111	Turkish-I	2	0	2	2	Compulsory	
CENG317	Computer Architecture	3	0	3	6	Compulsory	CENG210
CENG313	Automata Theory	3	0	3	5	Compulsory	CENG110
CENG319	Algorithm Analysis	3	0	3	5	Compulsory	
	Program Elective Course	3	0	3	7	Elective	
	Faculty Elective Course	3	0	3	5	Elective	
		Total Cua	111	1.7	20		

Code	Course Title	1	Г	A	C	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 Cr	ec	lit	11	29		

TOTAL CREDIT	127
TOTAL ECTS	240

Code	Course Title	T	A	C	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 Cree	dit	17	30		

Semester 4							
Code	Course Title	1	` A	C	ECTS	Status	Prerequisite
MATH216	Mathematics IV	-	2 2	3	6	Compulsory	MATH114
MATH220	Numerical Methods	-	2 2	3	4	Compulsory	MATH113
CENG210	Digital Circuit Design	- 2	2 2	3	5	Compulsory	CENG110
CENG218	Programming Languages and Applications		2 2	3	5	Compulsory	CENG106
CENG214	Operating Systems		8 0	3	5	Compulsory	
CENG216	Computer Networks - I		8 0	3	5	Compulsory	
		Total Cr	adie	19	30		

Code	Course Title	T	A	C	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		

Code	Course Title	T	A	C	ECTS	Status	Prerequisite
CENG498	Computer Engineering Graduation Project	0	4	2	4	Compulsory	
ATA112	Atatürk Principles and The History of Turkish Revoluti	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 C	re	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								
Code	Course Title			T	\ C	ECTS	Status	Prerequisite
		SECOND FOREIGN L	ANGUAGE				•	•
				П	Т			
		DEPARTMENTAL E	LECTIVE				•	
				П	Т			
		FACULTY ELEC	TIVE				•	
				П	Т			
	<u> </u>	UNIVERSITY ELE	CTIVE			•	*	•

Semester	r 2						
Code	Course Title	T	A	С	ECTS	Status	Prerequisite
	SEC	OND FOREIGN LANG	U	AGE			
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	DE	PARTMENTAL ELEC	ΤI	VE		•	•
		FACULTY ELECTIV	E				
	τ	NIVERSITY ELECTI	VE				

Semester								
Code	Course Title	T	Γ	A	С	ECTS	Status	Prerequisite
	SECO	D FOREIGN LANGUAGE					•	
			I					
	DEF	RTMENTAL ELECTIVE					•	
			I					
	•	CULTY ELECTIVE					•	
			I					
	U	VERSITY ELECTIVE						
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Semester							
Code	Course Title	T	A	C	ECTS	Status	Prerequisite
	SECO	ND FOREIGN LANG	U	AGE		•	
			Г				
	DEF	ARTMENTAL ELEC	ΤI	VE		•	•
		ACULTY ELECTIV	E			•	
			Г				
	U	IVERSITY ELECTI	VE	:		•	•

Code	Course Title	T	A	C	ECTS	Status	Prerequisite
	SECOND FOREIGN LANGUA	GE				•	•
	DEPARTMENTAL ELECTIV						
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	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		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	5	Elective	
ENG307	Biotechnology:Combining Engineering with the Biological Science	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	
ENG353	Electric Drives	3	0	3	5	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	
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Code	Course Title	T	A	C	ECTS	Status	Prerequisit
	SECOND FOREIGN	LANG	UA	GE			
	DEPARTMENTAL	LELEC	TI	VE.			
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	ECTIV	E				
ENG302	Fuzzy Logic and Its Applications	3	0	3	5	Elective	
ENG304	Technology Manangement	3	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		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	
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Code	Course Title	T	A	C	ECTS	Status	Prerequisite
	SECOND FOREIGN L.	NGUAGE	•	•			,
	DEPARTMENTAL E		_	_			
CENG371	File Organization and Management	3	0	3	7	Elective	
CENG379	Graphical Interface Design	3	0		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		3	7	Elective	
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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	
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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	1
SWE486	Software Product Line Management	3	0	3	7	Elective	1
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Code	Course Title	T	A	C	ECTS	Status	Prerequisite
	SECOND FOREIGN	LANG	UA	GE		•	•
	DEPARTMENTAL						
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	
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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	
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CENG475	Application Development Frameworks	3	0	3	7	Elective	
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CENG489	Pattern Recognition	3	0	3	7	Elective	
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CENG482	Embedded Systems	3	0	3	7	Elective	
CENG476	Project Management	3	0	3	7	Elective	
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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	
CENG490	OCOOP-I	3	0	3	7	Elective	
CENG492	OCOOP-II	3	0	3	7	Elective	
CENG494	OCOOP-III	3	0	3	7	Elective	
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