

COURSE DESCRIPTION FORM			
Course Code and Name	BM103 FUNDAMENTALS OF COMPUTER ENGINEERING		
Course Semester	1		
Catalogue Data of the Course (Course Content)	Fundamental concepts in computer software and hardware, algorithm design, software development process, well-known operating systems, data structures and databases, and knowledge about emerging technologies.		
Course Textbooks	Bilgisayar Mühendisliğine Giriş, Çölkesen, R. 2018. Introduction to Computing Systems: From Bits and Gates to C and Beyond, 2nd Edition by Yale N. Patt (Author), Sanjay J. Patel (Author), McGraw-Hill Education, 2003		
Supplementary Textbooks	Introduction to Computer Engineering: Hardware and Software Design 3rd Edition by T. L. Booth (Author), Wiley, 1984 The Beginner's Guide to Engineering: Computer Engineering by James Lance (Author), CreateSpace Independent Publishing Platform, 2013		
Credit (ECTS)	4		
Prerequisites for the Course (Attendance Requirements)	-		
Course Type	Compulsory		
Language of Instruction	Turkish		
Course Objectives	To emphasize technical subjects within the scope of Computer Engineering and provide enduring foundational knowledge about related topics.		
Course Learning Outcomes	1.Provides information about fundamental concepts in computer engineering. 2.Understands the processes and models of software and hardware development. 3.Learns the requirements and foundational knowledge specific to computer engineering. 4.Acquires knowledge about various methods applied in software and hardware development.		
Instruction Method (Face-to-face, Distance education etc.)	Face-to-face.		
Weekly Schedule of the Course	Week 1. Basic Concepts in Computer Engineering Week 2. Boolean Algebra Week 3. Algorithms Week 4. Programming Languages Week 5. Operating System Week 6. Microprocessors Week 7. Computer Networks Week 8. Binary Systems Week 9. Software Engineering Week 10.Data Structures Week 11. Database Management Week 12. Artificial Intelligence Week 13. Internet of Things Week 14. Ethics in Computer Engineering		
Teaching Activities (The time spent for the activities listed here will determine the amount of credit required)	Weekly theoretical course hours: 3 Reading activities Internet search and library work Making a report Preparing and making presentations Midterm and revision for midterm Final exam and revision for final exam		
Assessment Criteria		Number(s)	Weight (%)
	Midterm exam	1	30

	Assignment	0	0						
	Application	0	0						
	Project	1	30						
	Practice	0	0						
	Quiz	0	0						
	Final exam	1	40						
	Total	3	100						
Workload of the Course	Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload					
	Weekly theoretical course hours	14	3	42					
	Weekly practical course hours								
	Reading activities	14	1	14					
	Internet search and library work	14	1	14					
	Designing and implementing materials								
	Making a report	1	8	8					
	Preparing and making presentations	1	6	6					
	Midterm and revision for midterm	1	8	8					
	Final exam and revision for final exam	1	8	8					
	Total workload			100					
	Total workload/ 25			4					
Course Credit (ECTS)			4						
Contribution Level between Course Outcomes and Program Outcomes	No	Program Outcomes			1	2	3	4	5
	1	Knowledge of mathematics, science, basic engineering, computing, and computer engineering; ability to use this knowledge in solving complex engineering problems.							X
	2	Ability to define, formulate and analyze complex engineering problems using basic science, mathematics and engineering knowledge and considering the UN Sustainable Development Goals relevant to the problems addressed.						X	
	3	Ability to design creative solutions to complex engineering problems; ability to design complex systems, processes, devices, software, algorithms or products to meet current and future requirements, considering realistic constraints and conditions.						X	
	4	Ability to select, use and develop appropriate techniques, resources and modern engineering and informatics tools, including estimation and modeling, for the analysis and solution of complex engineering problems while being aware of their limitations.					X		
	5	Ability to use research methods to examine complex engineering problems or research topics in computer engineering, including reviewing the literature, designing experiments, conducting experiments, collecting data, analyzing and interpreting results.				X			
	6	Knowledge of the effects of engineering practices and the standards used in these practices on society, health and safety, economy, sustainability and environment within the scope of the UN Sustainable Development Goals; awareness of the						X	

		consequences of engineering solutions in the fields of information security and law.					
	7	Acting in accordance with engineering professional principles and knowledge on ethical responsibility; awareness of acting impartially, without discrimination on any issue, and being inclusive of diversity.				X	
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).				X	
	9	Ability to conduct effective verbal and written communication on technical issues in Turkish or English, prepare reports, make effective presentations and prepare software documentation, considering the various differences of the target audience (such as education, language, profession).					X
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.					X
	11	Lifelong learning skill that includes the ability to learn independently and continuously, to adapt to new and developing scientific practices and technologies, and to think inquisitively about technological changes.					
Lecturer(s) and Contact Information	Lecturer's First/Last Name: Asst. Prof. Dr. Feyza YILDIRIM OKAY E-mail address: feyzaokay@gazi.edu.tr						