COURSE DESCRIPTION FORM	
Course Code and Name	BM309 OPERATING SYSTEMS
Course Semester	5
Catalogue Data of the Course (*Course Content*)	Basic architecture of operating systems, hardware and software requirements and application areas of operating systems.
Course Textbooks	Operating System Concepts, 9th Edition by Abraham Silberschatz, Peter B. Galvin, Greg Gagne, 2012.
Supplementary Textbooks	Gary Nutt, Operating Systems. A Modern Perspective, Addison Wesley, 2004 William Stallings, Operating Systems, Prentice-Hall, 2001. Tanenbaum, Andrew S., Modern Operating Systems, Prentice-Hall, 2001.
Credit (*ECTS*)	6
Prerequisites for the Course (*Attendance Requirements*)	There is no prerequisite or co-requisite for this course.
Course Type	Compulsory
Language of Instruction	Turkish
Course Objectives	The goals of this course are to teach students the fundamental tasks of a general-purpose operating system and the main approach and algorithms which the operating system employs in order to fulfill these tasks; to allow students to get familiar with managing computer hardware and by this way to equip them with basic information which allows them to develop system programs close to computer hardware.
Course Learning Outcomes	1. Fundamental concepts of operating systems, process management, time sharing working, context changing, 2. Threads, inter processes interaction and synchronization, mutual exclusion, semaphores, classic process problems, deadlock, catching and prevention 3. Input/Output units
Instruction Method *(Face-to-face, Distance education etc.)*	The mode of delivery of this course is Face to face
Weekly Schedule of the Course	1. Week: Operating systems basic concepts 2. Week: Transaction management 3. Week: Time of shared work 4. Week: Changing Context 5. Week: Threads 6. Week: Processes and interactions between synchronization 7. Week: Mutual exclusion 8. Week: Semaphores 9. Week: Classic process problems 10. Week: Dead locks trapping and blocking 11. Week: Job Scheduling Algorithms 12. Week: Memory management, paging, 13. Week: Virtual memory, file system and management 14. Week: Input / Output units
Teaching Activities *(The time spent for the activities listed here will determine the amount of credit required)*	Weekly theoretical course hours: 3 Weekly practical course hours Reading activities Internet search and library work Designing and implementing materials 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	40
Assignment	2	20
Application		
Project		
Practice		
Quiz		
Final exam	1	40
Total	4	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	2	28
Internet search and library work	14	2	28
Designing and implementing materials	1	15	15
Making a report			
Preparing and making presentations			
Midterm and revision for midterm	1	15	15
Final exam and revision for final exam	1	15	15
Total workload			143
Total workload/ 25			5,72
Course Credit (ECTS)			6

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.					

	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 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.					
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).					
	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).					
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.					
	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.		X			

Lecturer(s) and Contact Information	Lecturer Dr. Muhammet ÜNAL muhunal@gazi.edu.tr