Course Description Form	
Course Code and Name	BM474 CONTROL SYSTEMS (TECH.ELECT.)
Course Semester	8
Catalog Content	Understanding the Theory and Practice of Designing Control and Control Systems
Textbook	Modern Control Systems (13th Edition) by Richard C. Dorf (Author), Robert H. Bishop (Author), Pearson, 2016
Supplementary Textbooks	Control Systems Engineering, 7th Edition by Norman S. Nise (Author), Wiley, 2015 Mechatronics: Electronic Control Systems in Mechanical and Electrical Engineering (6th Edition) by W. Bolton (Author), Pearson, 2016
Credit	6
Prerequisites of the Course (*Attendance Requirements*)	There is no prerequisite or co-requisite for this course.
Type of the Course	Elective
Instruction Language	Turkish
Course Objectives	To introduce the basic characteristics of classical control systems to
Course Learning Outcomes	1. To give students the ability to analyze and design classical control systems 2. To teach analysis and design methods of modern control systems including numerical control systems. 3. An understanding of the theory of modern control systems and their effective use in problem solving and design
Instruction Methods	The mode of delivery of this course is Face to face
Weekly Schedule	1. Process control computers 2. Process control computers 3. Process dynamic models 4. Process dynamic models 5. Back-fed control design 6. Back-fed control design 7. Forward-fed controls 8. Forward-fed controls 9. Multiple loop control systems 10. Multiple loop control systems 11. Alternative controller configurations 12. Alternative controller configurations 13. Industrial applications 14. Industrial applications
Teaching and Learning Methods *(These are examples. Please fill which activities you use in the course)*	Weekly theoretical course hours: 3 Reading Activities Internet browsing, library work Designing and implementing materials Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam

		Numbers	Total Weighting (%)	
Assessment Criteria	Midterm Exams	1	30	
	Assignment	5	30	
	Application	0	0	
	Projects	0	0	
	Practice	0	0	
	Quiz	0	0	

Percent of In-term Studies (%)		60	
Percentage of Final Exam to Total Score (%)		40	
Attendance		-	-

	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load
Workload	Weekly Theoretical Course Hours	14	3	42
	Weekly Tutorial Hours	0	0	0
	Reading Tasks	8	4	32
	Studies	9	9	36
	Material Design and Implementation	12	1	12
	Report Preparing	0	0	0
	Preparing a Presentation	0	0	0
	Presentations	0	0	0
	Midterm Exam and Preparation for Midterm Exam	1	13	13
	Final Exam and Preparation for Final Exam	1	15	15
	Other (should be emphasized)	0	0	0
	Total Workload			150
	Total Workload / 25			6
	Course Credit (ECTS)			6

	No	Program Outcomes	1	2	3	4	5
Contribution Level Between Course Learning Outcomes and Program Outcomes	1	Sufficient knowledge on mathematics, science and computer engineering; ability to apply theoretical and practical knowledge in these areas to model and solve engineering problems					x
	2	Ability to identify, define, formulate and solve complex engineering problems; ability to choose and apply appropriate analysis and modelling methods for these purposes					x
	3	Ability to design a complex system, process, device, software, algorithm, or product under realistic constraints and circumstances to meet certain requirements; ability to apply modern design techniques for this purpose					x
	4	Ability to choose, develop and use modern techniques and tools necessary for engineering applications; ability to effectively use computing technologies				x	

No	Program Outcome	1	2	3	4
5	Ability to design and implement systems or experiments to solve engineering problems, collect and interpret data to evaluate and analyze the results of solutions				x
6	Ability to work effectively in intradisciplinary and interdisciplinary teams or individually		x		
7	Ability to efficiently prepare, evaluate and interpret reports			x	
8	Ability to make presentations and conduct effective verbal and written communication in Turkish and English			x	
9	Awareness of the necessity of lifelong learning; ability to access information, follow scientific and technological developments; ability to perpetually renew oneself				x
10	Awareness of professional and ethical responsibility, ability to act in accordance with ethical principles		x		
11	Ability to apply knowledge on project management, risk management and change management			x	
12	Awareness of entrepreneurship and innovation, ability to design and build sustainable systems		x		
13	Ability to devise local and global solutions to contemporary issues considering the effects of engineering applications on health, environment and security	x			
14	Awareness of the legal consequences of engineering solutions		x		
15	Ability to apply knowledge on software development process and documentation rules	x			
16	Knowledge on standards used in engineering applications	x			
17	Awareness of occupational health and security, information security and privacy		x		

The Course's Lecturer(s) and Contact Information	Computer Engineering Department Chair bmbb@gazi.edu.tr