

COURSE DESCRIPTION FORM		
Course Code and Name	CENG353 FUNDAMENTALS OF COMMUNICATION (TECH.ELECT.)	
Course Semester	5	
Catalogue Data of the Course <i>(Course Content)</i>	Learning signs and linear systems, amplitude and angle modulation, learning the effect of noise on analog communication systems, learning analog-digital conversion and developing computer applications in communication.	
Course Textbooks	Fundamentals of Analogue and Digital Communication Systems, Springer, 2022.	
Supplementary Textbooks	Fundamentals of Communication Systems, Pearson, 2014.	
Credit (ECTS)	6	
Prerequisites for the Course <i>(Attendance Requirements)</i>	There is no prerequisite or co-requisite for this course.	
Course Type	Technical Elective	
Language of Instruction	English	
Course Objectives	<ol style="list-style-type: none"> 1. Teaching analyzing signals and analog or continuous wave modulation methods 2. Teaching the basics of digital communication 	
Course Learning Outcomes	<ol style="list-style-type: none"> 1. Represents signals mathematically. 2. Explains the techniques used in signal modulation. 3. Explains the foundations of digital communication and information theory. 4. Develops computer applications on communication. 	
Instruction Method <i>(Face-to-face, Distance education etc.)</i>	This course will only face-to-face training.	
Weekly Schedule of the Course	<ol style="list-style-type: none"> 1. Week: Mathematical representation of the message signal 2. Week: Mathematical representation of the message signal 3. Week: Amplitude and angle modulation techniques: Amplitude modulation 4. Week: Amplitude and angle modulation techniques: Double side-band, single side band 5. Week: Now side-band modulation, frequency modulation 6. Week: Now side-band modulation, frequency modulation 7. Week: Phase-locked loops 8. Week: Phase-locked loops 9. Week: Frequency division multiplexing 10. Week: Frequency division multiplexing 11. Week: Amplitude and angle modulation systems noise 12. Week: Amplitude and angle modulation systems noise 13. Week: Computer applications in communications 14. Week: Computer applications in communications 	
Teaching Activities <i>(The time spent for the activities listed here will determine the amount of credit required)</i>	Weekly theoretical course hours: 3 Reading activities Internet search and library work Midterm and revision for midterm Final exam and revision for final exam	
Assessment Criteria	Number(s)	Weight (%)
	Midterm exam	30
	Assignment	30
	Application	0
	Project	0
	Practice	0
	Quiz	0
	Final exam	40

	Total	7	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	0	0	0							
	Reading activities	14	3	42							
	Internet search and library work	14	3	42							
	Designing and implementing materials	0	0	0							
	Making a report	0	0	0							
	Preparing and making presentations	0	0	0							
	Midterm and revision for midterm	1	12	12							
	Final exam and revision for final exam	1	12	12							
	Total workload			150							
	Total workload/ 25			6							
	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.						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 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. Bilgehan Arslan bilgehanarslan@gazi.edu.tr						