COURSE DESCRIPTION FORM

Course Code and Name	CENG473 INTRODUCTION TO WIRELESS AND MOBILE NETWORKS (TECH. ELECT.)
Course Semester	7
Catalogue Data of the Course (*Course Content*)	General information on wireless communication technologies, mobile network architectures, and future network technologies.
Course Textbooks	Stallings, W., "Wireless Communications & Networks (2nd Edition)", Prentice Hall, 2004.
Supplementary Textbooks	Schiller, J., "Mobile Communications Second Edition", Addison Wesley, 2003. T.S. Rappaport, ``Wireless Communications: Principles & Practice'', Second Edition, Prentice Hall, 2002. Mischa Schwartz, ``Mobile Wireless Communications'', Cambridge University Press, 2005. Andrea Goldsmith, ``Wireless Communications'', Cambridge University Press, 2005.
Credit (*ECTS*)	6
Prerequisites for the Course (*Attendance Requirements*)	-
Course Type	Elective
Language of Instruction	English
Course Objectives	To have knowledge of the fundamental concepts of wireless and mobile networks, understand topics such as cellular networks and mobile network architectures, gain knowledge about the protocols and standards used in these areas, and acquire information about future wireless communication technologies.
Course Learning Outcomes	1. Acquires basic knowledge about wireless and mobile networks. 2. Specialize the topics of cellular and mobile network architectures. 3.Grasps security issues such as wireless network security, encryption, and authentication. 4. Gains knowledge about protocols and standards used in wireless and mobile networks. 5. Possess knowledge about next-generation communication technologies.
Instruction Method (*Face-to-face, Distance education etc.*)	Face-to-face.
Weekly Schedule of the Course	Week 1. Introduction to Wireless Networks Week 2. Challenges in Wireless Network Communication Week 3. Fundamentals of Wireless Communication Week 4. Antennas Week 5. Modulation Techniques Week 6. Spread Spectrum Week 7. Error Control Mechanisms Week 8. Introduction to Cellular Networks Week 9. GSM Technology Week 10. CDMA, 802.11 Week 11. Bluetooth, Mobile IP Week 12. Introduction to Wireless Sensor Networks Week 13. Introduction to the Internet of Things Week 14. Communication Protocols of Internet of Things
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				
Application				
Project	1	30		
Practice				
Quiz				
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	2	28
Internet search and library work	14	2	28
Designing and implementing materials			
Making a report	1	10	10
Preparing and making presentations	1	10	10
Midterm and revision for midterm	1	20	20
Final exam and revision for final exam	1	20	20
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.			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.			X		
Lecturer(s) and Contact Information	Lecturer's First/Last Name: Asst. Prof. Dr. Feyza YILDIRIM OKAY E-mail address: feyzaokay@gazi.edu.tr						