



ESOĞÜ Electrical-Electronics Engineering Department

COURSE CODE: 151226356

COURSE TITLE: COMMUNICATIONS

Semester	Weekly Hours		COURSE			
	Theoretical	Practical	Credits	ECTS	Type	
6	0	2	1	2	Compulsory (x) Elective ()	
Write the credit (for non-credit courses weekly hours) below (If necessary distribute the credits.).						
Math and Basic Science		Electrical Engineering [mark (√) if there is high design content]		General Education	Humanities	
		1 ()				
Assessment		THEORETICAL-PRACTICAL COURSES		LABORATORY COURSES		
Midterm	Type	Number	%	Activity Type	Number	%
	Midterm			Quiz		
	Quiz			Lab performance	10	100
	Homework			Report		
	Project			Oral exam		
	Other (.....)			Other (.....)		
Final						
Makeup exam (Oral/Written)						
Prerequisites		151226356 COMMUNICATIONS (in parallel)				
Brief content of the course		Hands-on Lab experiments on fundamentals of electronic communications, signal/noise power-energy, sampling and quantization, AM, DSB-AM, FM, PSK, QPSK, PAM, ADC/DAC principles.				
Objectives of the course		Learn the modulation/demodulation techniques used in electronic communications, get familiar with the waveforms, learn how to measure and what to measure in the communication waveforms.				
Contribution of the course towards professional education		Students will get familiar with the communication blocks and generated waveforms used in electronic communication and get ready for the advanced techniques in communication.				
Outcomes of the course		1) Students get familiar with AM, FM, PSK and the techniques made up from their derivatives. They experimentally learn “how/why”s in practical communication systems 2) Gain the ability to measure fundamental quantities in communication. 3) Start building experience for advanced communication systems.				
Textbook of the course		E. Seke, Sayısal Haberleşmeye Giriş, Seçkin Yayıncılık, 2015.				
Other reference books		1) B. Sklar, Digital Communications, Fundamentals and Applications, Prentice Hall, 2000 2) J. G. Proakis, M. Salehi, Communication Systems Engineering, Prentice Hall, 2002				
Required material for the course		The course is parallel with Communication course in the curriculum which is mostly theoretical. A communication lab equipped with communication lab-kits is required for hands-on experiments.				

WEEKLY PLAN OF THE COURSE	
Week	Topics
1	Fundamentals of effective and safe handling of the lab-equipment and comm. kits.
2	Signal generators and spectrum experiments
3	Amplitude Modulation/demodulation, DSB-AM.
4	Amplitude Shift Keying
5	Frequency Modulation/demodulation
6	First midterm
7	Frequency Shift Keying
8	Phase Shift Keying modulation/demodulation
9	QPSK
10	ADC/DAC experiments
11	Second midterm
12	Digital data transmission experiments
13	Digital data transmission experiments / reception
14	Make-up for the incomplete experiments
15,16	Final

NO	OUTCOMES OF THE PROGRAMME	3	2	1	0
1	Adequate knowledge of mathematics, science and Electrical and Electronic Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems of Electrical and Electronic Engineering	X			
2	Ability to identify complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.		X		
3	Having skills to apply modern design methods to design a complex system, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.			X	
4	Having skills to develop, select and apply modern techniques and tools needed for Electrical and Electronic Engineering applications, skills to use information technology effectively.			X	
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of Electrical and Electronic Engineering problems	X			
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.		X		
7	Communicating effectively in oral and written form both in Turkish and English.				X
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing				X
9	Understanding of professional and ethical responsibility				X
10	Information on project management, change management and risk management practices, awareness on entrepreneurship, innovation and sustainable development.				X
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.				X

Scale for assessing the contribution of the course to the program outcomes:

3: Very high

2: Medium

1: Small

0: None

Name of Instructor(s): Erol Seke

Signature(s): Erol Seke

Date: 10.12.2012