



ESOGÜ Electrical-Electronics Engineering Department

COURSE CODE: 151226357 - 151246357 **COURSE TITLE:** Electronics Laboratory

Semester	Weekly Hours		COURSE			
	Theoretical	Practical	Credits	ECTS	Type	Language
5	0	2	1	2	Compulsory (x) Elective ()	Turkish () English (x)
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 (x)				
Assessment		THEORETICAL-PRACTICAL COURSES			LABORATORY COURSES	
		Type	Number	%	Activity Type	Number %
Midterm		Midterm			Quiz	
		Quiz			Lab performance	7 50
		Homework			Report	7 30
		Project			Oral exam	
		Other (.....)			Other (.....)	7 20
Final						
Makeup exam (Oral/Written)						
Prerequisites						
Brief content of the course		Semiconductor Diodes and Power Supply, A Battery Charger, BJT and BJT Biasing, Amplifiers with BJT, Wideband Amplifiers, Printed Circuit Board (PCB) Circuit Project				
Objectives of the course		Introducing basic electronic components, Analyzing amplifiers Designing basic amplifier circuits with transistors				
Contribution of the course towards professional education		Basic laboratory skills are emphasized, Basic electronic components are introduced, Amplifier design procedures are practiced, Printed circuit boards and their importance is explained, A circuit is built on printed circuit board.				
Outcomes of the course		Students completing the course successfully will 1) Gain good laboratory skills 2) Learn how to write experiment reports 3) Design a power supply circuit 4) Design amplifier circuits 5) Make printed circuit boards.				
Textbook of the course		Laboratory data sheets				
Other reference books		Microelectronics Circuits by Sedra & Smith, (3rd or later edition)				
Required material for the course		Electronic Experiment Unit, Oscilloscope, Voltmeter, Signal Sources, circuit components				

WEEKLY PLAN OF THE COURSE	
Week	Topics
1	Introduction to the course
2	Introduction to the lab
3	Semiconductor Diodes
4	Power Supply
5	A Battery Charger
6	BJT and BJT Biasing
7	Amplifiers with BJT
8	Midterm
9	Midterm
10	Wideband Amplifiers
11	Wideband Amplifiers
12	Printed Circuit Board (PCB) Circuit Project
13	Printed Circuit Board (PCB) Circuit Project
14	Printed Circuit Board (PCB) Circuit Project
15,16	Final

NO	OUTCOMES OF THE PROGRAMME	4	3	2	1
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 complex 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, process, 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 to analyze and solve complex applications in Electrical and Electronic Engineering, 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 complex problems in Electrical and Electronic Engineering		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. Effective report writing and understanding written reports, preparing design and manufacturing reports, making effective presentations, skills to give and receive clear and concise instructions.				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 and innovation, knowledge on 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:

4: High

3: Medium

2: Low

1:None

Name of Instructor(s):

H H Erkaya

Signature(s)

Date: March 11, 2016