



ESOGÜ Electrical-Electronics Engineering Department

COURSE CODE: 151224232 - 151244232

COURSE TITLE: Circuit Analysis II

Semester	Weekly Hours		COURSE				
	Theoretical	Practical	Credits	ECTS	Type	Language	
4	4	0	4	6	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		3 ()		0	0		
Assessment		THEORETICAL-PRACTICAL COURSES			LABORATORY COURSES		
Midterm		Type	Number	%	Activity Type	Number	%
		Midterm	1	30	Quiz		
		Quiz	3	30	Lab performance		
		Homework			Report		
		Project			Oral exam		
Final			1	40			
Makeup exam (Oral/Written)		Written					
Prerequisites		Circuit Analysis I					
Brief content of the course		Sinusoidal steady-state response, phasor, sinusoidal power calculations , three-phase circuits, transformers, Laplace transform, applications of Laplace transform in circuit analysis. Frequency response, passive and active filters, Bode diagrams.					
Objectives of the course		Teaching sinusoidal circuit response and sinusoidal power. Teaching three-phase circuits and transformers. Analysing circuits using Laplace transform. Teaching frequency response of the circuits, active and passive filters.					
Contribution of the course towards professional education		In this course students learn how to analyse sinusoidally driven circuits, using Laplace transform in circuit analysis. Also, students learn frequency response and filters. These subjects prepare a background for other subjects of the electrical engineering curriculum.					
Outcomes of the course		At the end of this course, Students 1) analyse sinusoidally-driven circuits, 2) analyse three-phase circuits and transformers, 3) know how to use laplace transform in circuit analysis, 4) analyse and design passive and active filters.					
Textbook of the course		Nilsson, J. W. and S. A. Riedel, Electric Circuits, Pearson Prentice Hall Inc., 8 th Ed. 2008.					
Other reference books		1) Hayt, W.H., Jack E. Kemmerly, Steven M. Durbin, Engineering Circuit Analysis, Mc Graw Hill, 6 th Ed. 2002 2) Richard C. Dorf, James A. Svoboda Introduction to Electric Circuits, Wiley, 7 th Ed. 2006					
Required material for the course							

WEEKLY PLAN OF THE COURSE

Week	Topics
1	Sinusoidal steady state response. Phasors.
2	Analysis of AC circuits by phasor method.
3	AC power calculations. Average power, reactive power, complex power, power factor.
4	Balanced three-phase circuits. Analysis Y-Y connected circuit.
5	Analysis Y- Δ connected circuit. Power calculations in 3-phase circuits.
6	Transformers
7	Laplace transform.
8	Midterm
9	Midterm
10	Application of Laplace transformation in circuit analysis
11	Convolution, transfer function, impulse response
12	Frequency response, resonance circuits.
13	Passive filters, Bode diagrams
14	Active filters
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):

Signature(s):

Date: 08/03/2016