

EEEN 202
Electrical and Electronic Circuits II, Spring 2019
(6 ECTS)

Instructor Information:

Instructor: Prof. Dr. Alpaslan Parlakçı
E-mail: aparlakci@bilgi.edu.tr
Office Hours: Mon, Wed 15:00-16:00

Office Location: E3-220
Office Phone: X7427

Instructor: Dr. Revna Acar Vural
E-mail: racar@yildiz.edu.tr

Instructor: Dr. Mustafa Berke Yelten
E-mail: yeltenm@itu.edu.tr

Laboratory Teaching Assistants: Hilmi Artun Oyman, Zeynep Ayaz

Course description:

This course is addressed to the engineering sophomores who have successfully completed Electrical & Electronics Circuits I. The course provides the students with an exposure to essential principles and practices of fundamental electrical and electronic circuits.

Course objectives:

This course is designed to enable the students to complete foundation courses for the Electrical and Electronics education of the succeeding years. After completion the student will be furnished with a sound background to be enhanced with more specialized courses in the subject areas into which an introduction is made.

Course Learning Outcomes:

Following the successful completion of this course work, students will be able to:

1. Attain a working knowledge of operational amplifiers
2. Comprehend frequency selective circuits
3. Grasp active filter circuits
4. Perceive Fourier series
5. Gain an insight into Fourier transform
6. Build-up a comprehensive knowledge about two-port circuits.

Prerequisites: EEEN 201

Text Books:

Electric Circuits

James W. Nilsson, Susan A. Riedel

Publisher: Pearson Prentice Hall, ISBN: 0-13-127760-X

Additional Reference:

Circuits, Devices and Systems

Ralph J. Smith, Richard C. Dorf

Publisher: Wiley, ISBN: 0471-83944-2

Requirements

1. Students must attend at least 70 % of the lectures, labs and tutorial sessions. Otherwise they may not be able to enter the final exam.
2. Students who miss a lecture or lab are completely responsible for obtaining the material they missed.
3. No make-up exams or labs will be given.
4. Excused absences must be documented for which their legitimacy is determined by the instructor
5. Late assignments will be reduced 20 % of its total points for each day late, not more than 3 days
6. Adherence to the University Academic Integrity policy is a necessity.

Exams and Grading:

<u>Evaluation Type</u>	<u>Number</u>		<u>Percentage</u>
Laboratory/Homeworks	5/4		20
Midterm	1		30
Final Comprehensive Exam	1		50
TOTAL			100

Tentative Lecture Schedule

Date	Subject
Week 1	Laplace transform and its properties, inverse Laplace transform and
Week 2	Laplace transform in circuit analysis, Thévenin's equivalent circuit in s-domain, transfer function and steady-state sinusoidal response
Week 3	Operational amplifiers, terminal voltages and currents
Week 4	Operational amplifier circuits
Week 5	Frequency selective circuits, some preliminaries
Week 6	Low-pass, high-pass, bandpass and bandreject filters
Week 7	Active filter circuits
Week 8	MIDTERM EXAM
Week 9	First-order filters, higher order Op Amp filters
Week 10	Fourier series, analysis and overview
Week 11	Application of Fourier series, amplitude and phase spectra,
Week 12	Fourier transform
Week 13	Circuit applications of the Fourier transform
Week 14	Terminated two-port circuits, Interconnected two-port circuits
Week 15	FINAL EXAM