Alanya Alaaddin Keykubat University | Rafet Kayış Faculty of Engineering
Electrical-Electronics Engineering Department
2023-2024 Spring Semester

Syllabus

Code/Name	SEC 304.3 / Analog Electronics II
Type	Required
Credit/ECTS	2/2
Hour per Week	2
Level/Year	Undergraduate/3
Semester	Spring
Classroom	A103
Content	Multistage amplifiers. Bode plots. DC, RC and transformer coupled amplifiers. Differential pair stages. Current sources. Operational amplifier applications. Power amplifiers. Positive and negative feedback in amplifiers. Integrated circuit power supply regulators. Noise in amplifiers
Prerequisites	None
Textbooks	***Primary*** A. S. Sedra & A. Grabel, Microelectronic Circuits & Devices, Oxford University Press, 7tht Edition, 2014. ***Supplementary*** B. G. Streetman and S. Banerjee, Solid State Electronic Devices, Prentice Hall Series.
Objectives	• To learn the existing electronic circuit elements and their application fields • To introduce students to design analog electronic circuits
Course Outcomes	In this course you will be able to: CO1 Make DC and AC analysis of multistage BJT and FET amplifiers CO2 Know compound transistor pairs (CE-CE, CC-CC, CB-CB) CO3 Learn differential amplifier structure CO4 Know about class A, B and AB power amplifiers and can compare their gain and efficiency values CO5 Learn the concepts of negative and positive feedback amplifier circuits and their applications

Weekly Schedule of Topics

W	Topic
1	Small signal analysis of BJT and FET amplifiers
2	Frequency response of BJT and FET amlifiers
3	DC and AC analysis of multistage amplifiers.
4	Frequency anaysis of multistage amplifiers
5	Analysis of CE-CE, CC-CC, CB-CB and darlington pairs
6	Constant current sources
7	Differential amplifiers: Operation at difference and common mode.
8	Operational amplifier (OP) parameters.
9	Linear applications of Ops
10	Nonlinear applicaitons of OPs
11	Power amplifiers (Class A, B and AB), transformer coupled amplifiers

12	Designing DC power supply using OP and circuit elements
13	Negative feedback in amplifiers.
14	Positive feedback in amplifiers and noise

Contribution to Program Outcomes*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	5	5	1	5	0	5	1	3	1	3	0
CO2	5	5	1	4	0	5	4	3	4	3	0
CO3	5	5	3	5	2	5	1	3	1	3	0
CO4	5	4	3	5	0	5	2	3	1	4	0
CO5	5	4	1	4	0	5	4	3	4	1	2

* Contribution Level | 0: None | 1: Very Low | 2: Low | 3: Medium | 4: High | 5: Very High

Requirements	Basic knowledge of Electromagnetic Field Theory	
Course Policy	• Be in the class on time. • English should always be used to communicate with one another. • At least 70% attendance is required, otherwise a grade of **DZ** will be assigned.	
Cheating & Plagiarism	• Copying or letting someone copy your work on exams, assignments, or reports is cheating. • Cutting and pasting text, figures and tables from web sources or any other electronic source is plagiarism. • The consequence of academic dishonesty is to receive a grade of **FF** for the course.	
Evaluation	Midterm	40%
	Final Exam	60%
	Total	100%

Instructor

Name/Surname	Fikri Serdar Gökhan	Email	serdar.gökhan@alanya.edu.tr
Room	209	Office Hours	W 11.30-12.30 | F 13.30-14.30

Prepared by Akın Uslu on june 10th, 2024.