

Santa Clara University
Department of Electrical Engineering
Aleksandar I. Zecevic
Summer 2022

ELEN 50: Electric Circuits I
TEXT: James Nilsson and Susan Riedel, *Electric Circuits* (11th edition), Pearson, 2018.

SYLLABUS

WEEK		TOPICS	CHAPTER
1	06/20	Basic circuit analysis (Modules 1, 2 and 3)	1, 2, 3
		Introduction to graph theory (Module 4)	Notes
		The node voltage method (Modules 5 and 5P)	4
2	06/27	Thevenin Equivalents (Modules 6 and 6P)	4
		Superposition (Module 7)	4
		The loop method (Modules 8 and 8P)	4
3	07/04	Operational Amplifiers (Modules 9 and 9P)	5
		RL and RC circuits; Review of complex numbers (Module 10)	6, 7
		MIDTERM (July 6, 6:00 – 8:00)	
4	07/11	Circuit analysis with phasors (Modules 11 and 11P)	9
5	07/18	Power calculations with phasors (Modules 12 and 12P)	9
		FINAL EXAM (July 21, 6:00 – 9:00)	

LEARNING OUTCOMES

Students who successfully complete this course should be able to:

1. Formulate Kirchoff current and voltage law equations in a systematic manner.
2. Formulate and solve node voltage and loop current equations.
3. Compute Thevenin equivalents and apply them in circuit analysis.
4. Analyze circuits with operational amplifiers.
5. Utilize phasor techniques to compute the sinusoidal steady state response of linear circuits.
6. Design and test circuits that meet a given set of specifications.

GENERAL INFORMATION

OFFICE HOURS: Mondays and Tuesdays, 5:00 – 7:00 and by appointment.
E-MAIL: azecevic@scu.edu
WEBSITE: <http://www.engr.scu.edu/~azecevic/>

GRADING

Labs 20%
Homework 10%
Midterm 30%
Final 40%

Note: The grade for the lab will be the same as the one given for the lecture portion of the course.

HOMEWORK

Homework problems will be assigned on a weekly basis.

LABORATORY

Labs will be held on Thursdays (from 6:00-9:00), and prelab work will be due at the beginning of each lab session. Note that there will be no lab in week 5.