De Anza College
Department of Engineering
Engr 37-Intorduction to Circuit Analysis

Summer 2017 Manizheh Zand
Lecture: Mon to Thurs 2:00 pm to 4:15 pm email:
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Course Description

Emphasizes practical electronics applications and products. DC and AC theory; Ohm's Law, Kirchoff's Laws, Power Lawsnetwork theorems, schematic diagrams, instrumentation and measurement, and functions of discrete components. Activity 6 hours.

Course Objectives

Upon successful completion of this course, students will be able to:

- Develop an understanding and working knowledge of the fundamentals of DC and AC theory and theorems.
- Define current, voltage, and Kirchhoff's current and voltage laws.
- Use voltage and current to calculate the power dissipated by devices in a circuit.
- Use Ohm's law to determine the voltage and current relationship in linear devices.
- Analyze series, parallel, series-parallel, and network circuits
- Apply the principle of superposition, Thevenin's equivalent circuits, and Norton's equivalent circuits.
- Analyze circuits containing independent current and voltage sources.
- Describe the properties of inductors, capacitors and obtain transient responses of circuits containing these elements.
- Identify the amplitude, frequency, and phase of a sinusoidal function.
- Transform sinusoidal current and voltage signals from time domain to frequency domain.
- Use the phasor concept to obtain the solution of first and second order transient and steady state circuits.
- Use laboratory tools such as oscilloscopes, multimeters, function generators, and power supplies.
- Assemble a circuit and perform voltage and current measurements.
- Complete a critical evaluation of the differences between analytical solutions and the experimental measurements.

Textbooks

Floyd, Thomas L. (2013). Principles of Electric Circuits. (9th Edition). Upper Saddle River, New Jersey: Prentice-Hall.

Course Evaluation

The total points earned on all the midterms, quizzes, assignments, lab project, research paper, and final exam will be divided by the total possible points and the resulting percentage will determine the course grade.

Midterms 40%
Quizzes 10%
Homework Assignments 10%
Lab Experiments 10%
Final exam 30%

The final grade will be determined according to the following scale:

A+ 97 -100%	B+ 87 - 89%	C+ 77 - 79%	D+ 66 - 69%
A 93 - 96%	B 83 - 86%	C 73 - 76%	D 60 - 65%
A- 90 - 92%	B- 80 - 82%	C- 70 - 72%	F 0 - 59%

I. **Midterms & Quizzes**

There will be two (2) midterms given. Final Comprehensive Exam will be given during final exam period. No makeup will be allowed.

There may be several quizzes given during the semester as deem necessary. No makeup will be allowed.

II. **Homework Assignments**

Homework will be assigned during class hours and can be given from textbooks or class discussions.

III. **Lab Experiments**

4 labs are scheduled for this course.

IV. **Final Exam**

On Thursday, August 8th at 2:00 pm

Academic Integrity:

Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the university's Academic Integrity Policy requires you, to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Student Conduct and Ethical Development.

Americans with Disabilities Act:

If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with DRC to establish a record of their disability.

Course Outline

Week	Date	Lecture	Topics
1	July 3rd	Chapter 1 Chapter 2 Chapter 3 Chapter 4	Orientation Quantities and Units Voltage, Current, and Resistance Energy and Power Quiz #1
2	July 10th	Chapter 5 Chapter 6 Lab 1	Series Circuits Parallel Circuits Quiz #2
3	July 17th	Midterm #1 Chapter 7 Chapter 8 Lab 2	Midterm #1- Chapters 1,2,3,4,5,6 Series-Parallel Circuits Circuit Theorems and Conversions
4	July 24th	Chapter 9 Chapter 11 Chapter 12 Lab 3	Branch, Loop, Node Analysis Introduction to Alternating Current and Voltage Capacitor Quiz #3
5	July 31st	Midterm#2 Chapter 13 Lab 4	Chapters 6, 7, 8, 9 Inductors
6	August 7th	Extra-Credit Presentation Final Exam	 Chapters 1,2,3,4,5,6,7,8.9,11,12,13