Fall 2015

Class Schedule: 4:00 p.m. – 5:15 p.m. M/W; 08/24/15 to 12/05/15, **Classroom:** TBE B-178
Instructor: Dr. Wen Shen, **Office:** SEB 1182, **Email:** wen.shen@unlv.edu, **Phone:** 702-774-1481

Teaching Assistant: Yacouba Moumouni, **Email:** yacoubam@unlv.nevada.edu,
Phone: 702-555-6666, **Office:** TBE A-100, **Office Hours:** M/W 1:00 pm – 4:00 pm

1. Course Description

EE 220 is the first semester of one-year course to study linear circuit analysis. It covers: **a)** Kirchhoff's laws, nodal and mesh analysis, and other network theorems, **b)** Operational amplifiers, **c)** First order RC, RL circuits, and second order RLC circuits. The textbook is **Fundamentals of electric Circuits** (the 5th edition, ISBN-13: 978-0-07-338057-5) by Alexander & Sadiku. EE 220 covers the first eight chapters. The pre-requisite: MATH 182, co-requisite EE 220D. It is highly recommended PHYS 181 is taken prior to taking this course.

2. Homework

Homework assignments and due dates are pre-assigned for each chapter; these assignments are expected to turned in at the beginning of the class on the due dates. ***No late homework will be accepted.*** Each homework problem should start from a new page. Homework problems turned in without the procedure to achieve the final answers will receive no credits.

3. Exams

There will be two unit exams and a final exam during the semester. All exams are close-book type. However, one page of formula sheet is allowed. A non-programmable calculator is also allowed. Exam problems are very similar to the homework problems. Academic dishonesty during exams will result in a serious consequence.

4. Grading Policy

Homework: 8%, Exam 1: 22%, Exam 2: 30%, Final exam: 40%. Grades are determined according to the following percentages (+/- sign may be used):

A: 90% - 100%, B: 76% - 89%, C: 60%-75%, D: 50%-59%, F: <50%.

5. Course Outcomes

After students successfully finish this course they will have abilities to

1. Analyze simple resistive circuits including those containing independent sources with mesh and nodal analysis.
2. Derive simplified resistor networks.
3. Derive Thevenin and Norton equivalent circuits.
4. Apply circuit theorems (Ohms Law, Superposition, Source transformation) to simplify the analysis of electrical circuits.
5. Analyze of operational amplifiers circuits.
6. Analyze first order RL, RC circuits containing switches, independent sources, dependent sources, resistors, capacitors, inductors for transient response.

6. Course Outcomes by ABET

After students successfully finish this course they will gain the appropriate technical knowledge and skills with an ability

1. To apply mathematics through differential and integral calculus,
2. To apply advanced mathematics such as differential equations, linear algebra, complex variables, and discrete mathematics,
3. To apply knowledge of basic sciences,
4. To apply knowledge of engineering,
5. To identify, formulate, and solve engineering problems,
6. To analyze and design complex electrical and electronic devices,
7. To use the techniques, skills, and modern engineering tools necessary for engineering practice,

7. Course Outcomes by UULO

After students successfully finish this course they will meet the following objectives:

1. Intellectual Breadth and Lifelong Learning
2. Inquiry and Critical Thinking
3. Communication
4. Global/Multicultural Knowledge and Awareness
5. Citizenship and Ethics

8. Syllabus Change Disclaimer

Information contained in this syllabus, other than the grading policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

Teaching Schedule & Homework Assignments

08/24 M: Introduction
08/26 W: ***Ch. 1, Basic Concepts***
08/31 M: Ch. 1, Basic Concepts

09/02 W: ***Ch. 2 Basic Laws***
09/07 M: Labor Day Recess
09/09 W: Ch. 2, Basic Laws
09/14 M: Ch.2, Basic Laws
09/16 W: ***Ch. 3, methods of Analysis***
09/21 M: Ch. 3, Methods of Analysis
09/23 W: Ch. 3, Methods of Analysis
09/28 M: ***Ch. 4, Circuit Theorems***
09/30 W: Exam 1, (Ch. 1 through 3)

10/05 M : Ch. 4, Circuit Theorems
10/07 W: Ch. 4, Circuit Theorems
10/12 M: ***Ch. 5, Operational Amplifiers***
10/14 W: Ch. 5, Operational Amplifiers
10/19 M: Ch. 5, Operational Amplifiers
10/21 W: ***Ch. 6, Capacitors and Inductors***
10/26 M: Ch. 6, Capacitors and Inductors
10/28 W: Ch. 6, Capacitors and Inductors

11/02 M: ***Ch. 7, First-Order Circuits***
11/04 W: Exam 2, (Ch. 4 through 6)
11/09 M: Ch. 7, First-Order Circuits
11/11 W: Veteran's Day Recess
11/16 M: Ch. 7, First-Order Circuits
11/18 W: ***Ch. 8, Second-Order Circuits***
11/23 M: Ch. 8, Second-Order Circuits
11/25 W: Ch. 8, Second-Order Circuits
11/30 M: Study Week, No Class

12/02 W: Study Week, No Class
12/07 M: Final Exam (Ch. 1 through 8)

Homework 1, **Chapter 1**
2, 6, 8, 12, and 14. Due 09/02, W

Homework 2, Chapter 1
16, 18, 20, 26, and 3. Due 09/09, W

Homework 3, **Chapter 2**
12, 18, 22, 24, 42, and 46. Due 09/14, M

Homework 4, Chapter 2
52, 56, 72, 78, and 82. Due 09/21, M

Homework 5, **Chapter 3**
6, 12, 18, 24, and 32. Due 09/23, W

Homework 6, Chapter 3
44, 50, 56, 75, and 88. Due 09/28, M

Homework 7, **Chapter 4**
4, 8, 18, 32, and 36. Due 10/05, M

Homework 8, Chapter 4
42, 56, 58, 64, and 68. Due 10/12,

Homework 9, **Chapter 5**
10, 14, 20, 28, and 30. Due 10/19, M

Homework 10, Chapter 5
34, 40, 48, 62, and 78. Due 10/26, M

Homework 11, **Chapter 6**
6, 12, 18, 28, and 32. Due 10/28, W

Homework 12, Chapter 6
40, 54, 56, 62, and 72. Due 11/02, M

Homework 13, **Chapter 7**
2, 10, 14, 18, and 22. Due 11/16, M

Homework 14, Chapter 7
30, 42, 48, 62, and 70. Due 11/23, M

Homework 15, **Chapter 8**
6, 16, 20, 30, and 38. Due 11/25, W

Homework 16, Chapter 8
48, 50, 52, 60, and 66. Due 12/02, W