ECG 220 - ELECTRIC CIRCUITS I
SPRING 2006

Instructor: Dr. Y. Baghzouz
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Office Hours: 10:00-11:30 and 2:30-4:00 on Tuesdays and Thursdays.


References:

Prerequisites:
MAT 182.

COURSE OBJECTIVES
- to familiarize students with basic concepts in electrical devices, circuits, voltage and current, reference directions, power and energy
- to develop the students' ability to apply Ohm's Law, Kirchhoff's Laws, Nodal analysis technique, and Mesh analysis technique in circuit analysis problems.
- to develop the students' ability to apply linearity property, superposition, source transformation in circuit analysis problems.
- to develop the students' ability to derive Thevenin's and Norton's equivalent circuits
- to develop the students' ability to conduct analysis on Op Amp-based circuits.
- to develop the students' ability to analyze and solve the first- and second-order R-L-C circuits with appropriate mathematical tools.
- to develop the students' ability to conduct circuit analysis using SPICE

COURSE OUTCOMES
Upon completion of the course, students should be able to:
- analyze simple resistive circuits including those containing operational amplifiers and controlled sources with loop and nodal analysis
• analyze first and second order R-L-C circuits containing switches, independent sources, dependent sources, resistors, capacitors, inductors, and operational amplifiers for transient response using loop and nodal and node analysis
• derive Thevenin and Norton equivalent circuits
• apply circuit theorems to simplify the analysis of electrical circuits

Tests & Homework:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Value</th>
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<tbody>
<tr>
<td>Test 1  Chapters 1, 2, 3, 4</td>
<td>20 Points</td>
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<tr>
<td>Test 2  Chapters 5, 6, 7</td>
<td>20 Points</td>
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<tr>
<td>Test 3  Chapters 8, 9</td>
<td>20 Points</td>
</tr>
<tr>
<td>Final  Chapters 1-9</td>
<td>30 Points</td>
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<tr>
<td>Homework 10 problems/chapter (avg.) incl. PSpice Problems</td>
<td>30 Points</td>
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<tr>
<td>Total</td>
<td>120 Points</td>
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Grading:
A ≥ 90 > B ≥ 75 > C ≥ 60 > D ≥ 50 > F

Notes:
• Late homework will not be accepted.
• There will be no make-up tests.
• Class attendance and participation is highly encouraged.
• PSpice homework problems count twice as much as other problems.
• At least 75% of all PSpice homework problems must be turned in prior to receiving a grade.

Learning Enhancement Services:
If you a documented disability that may require assistance, you will need to contact LES for coordination in you academic accommodations. LES is located in the Rynolds Student Services Complex, Suite 137 (tel. 895-0866). You may also visit the website at http://www.unlv.edu/studentlife/les

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