ELEN 100: Electric Circuits II  

## SYLLABUS

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPICS</th>
<th>CHAPTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Circuit analysis using phasors.</td>
<td>9, 10</td>
</tr>
<tr>
<td>2</td>
<td>Power calculations and RMS values</td>
<td>9, 10</td>
</tr>
<tr>
<td>3</td>
<td>Op-amps and phasors. Frequency selective circuits.</td>
<td>7, 9</td>
</tr>
<tr>
<td>4</td>
<td>Transfer functions Bode plots</td>
<td>Appendix E, 9</td>
</tr>
<tr>
<td>5</td>
<td>Mutual inductance</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>MIDTERM 1</strong></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Linear and ideal transformers</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Natural and step response of second order circuits Switching and initial conditions.</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>Fund. of Laplace transforms <strong>MIDTERM 2</strong></td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>s-domain circuit analysis</td>
<td>13</td>
</tr>
<tr>
<td>10</td>
<td>s-domain circuit analysis</td>
<td>13</td>
</tr>
</tbody>
</table>
LEARNING OUTCOMES

Students who successfully complete this course should be able to:

1. Use phasor techniques to compute sinusoidal steady-state currents and voltages in linear circuits.
2. Use Bode plots to analyze frequency dependent circuits.
3. Use Laplace transforms to analyze time dependent circuits.
4. Design and test circuits that meet a given set of specifications.

GENERAL INFORMATION

OFFICE: Engineering Center, Room 223
OFFICE HOURS: Tuesdays and Thursdays, 4:00-5:00, and by appointment.
PHONE: (408) 554-2394
E-MAIL: azecevic@scu.edu
WEBSITE: http://www.engr.scu.edu/~azecevic/

GRADING

The course grade will be based on three criteria – homework, midterms and the final exam. This grade is worth 4 units, and will be calculated in the following way:

Homework: 10%
Midterm 1: 25%
Midterm 2: 25%
Final Exam: 40%

LABS

The lab component of this course consists of two projects, and is worth 1 unit. The projects will be graded separately from the rest of the course work, and each one will be worth 50% of the lab grade.

Project 1 begins in week 4, and must be completed in two weeks. The design is demonstrated in the laboratory in week 6.

Project 2 begins in week 8, and must be completed in two weeks. The design is demonstrated in the laboratory in week 10.

The work should be done by teams of two students. Each team should submit a single project report.
Academic Integrity Pledge:

“I am committed to being a person of integrity. I pledge, as a member of the Santa Clara University community, to abide by and uphold the standards of academic integrity contained in the Student Conduct Code.”

Disabilities Resources:

To request academic accommodations for a disability, students must be registered with Disabilities Resources, located in Benson, room 216. In order to register, please go online to www.scu.edu/disabilities. You will need to register and provide professional documentation of a disability prior to receiving academic accommodations. It is best to read “Required Documentation” on the website before starting the registration process in order to determine what is needed. You may contact Disabilities Resources at 408-554-4109 if you have questions.

To be in compliance with Title IX and the ADA/Section 504, a school must offer appropriate accommodation to a student whose absence is related to pregnancy or childbirth. If you are in need of an accommodation, contact the professor at the beginning of the course so that arrangement can be made. The student must also contact Disability Resources (DR) at (408) 554-4109 or www.scu.edu/disabilities to register for accommodations.

Santa Clara University upholds a zero tolerance policy for discrimination, harassment and sexual misconduct. If you (or someone you know) has experienced discrimination or harassment including sexual assault, domestic and dating violence or stalking, we encourage you to tell someone what happened promptly. For more information, please go to www.scu.edu/studentlife or contact the university's EEO and Title IX Coordinator, Belinda Guthrie at 408-554-4113 or by email at bguthrie@scu.edu. Look at: http://www.scu.edu/affirmativeaction/compliancelinks.cfm.