Units: 3.0

Schedule/Location: TR, 17:25–18:40 / Salazar 2025

Instructor: Mohamed Salem
Office: Salazar 2010B
Phone: (707) 664-3543
Email: mohamed.salem@sonoma.edu (Please add [EE220] to email subject)
Hours: MT, 12:00–14:00; R, 16:00–17:00 (drop by/email)

Tutor: TBD
Class: TBD
Email: tbd@sonoma.edu
Hours: TBD

Prerequisites: MATH 211, EE 110.

Corequisites: EE 221, PHYS 214.


Web: https://moodle.sonoma.edu/C/

Description: Review of Kirchhoff’s laws, circuit design, node and mesh analysis, etc.; Thevenin’s theorem, Norton’s theorem, steady state and transient analysis, transfer function. AC power and three-phase circuits, Y-Delta equivalents. Multi-port networks, two-port networks with energy storage, ideal transformers. Amplifiers and frequency response, filters.
Course Policies

Homework:

- Approximately one homework assignment every week.
- Homework is due by 17:25 one week after its assignment.
- Each assignment has 3-6 problems. Total points are scaled to 10.
- Assignments must be completed neatly in pen or pencil, preferably on engineering paper.
- Illegible, stained, or scribbled on assignments may receive partial or no credit.
- Late assignments will be awarded up to 5 points if received within five days of due date.
- No late work will be accepted after 18:40, Thursday, Dec. 07, 2017.
- It is the student's responsibility to communicate late submission with instructor.

Exams:

- Two mid-term exams scheduled after completing Chapter 4, and after completing Chapter 8.
- Each mid-term exam will contain 4-6 problems. Total points are scaled to 100.
- One comprehensive final exam scheduled between 17:00-18:50 on Tuesday, Dec. 12, 2017.
- Final exam will contain 5-7 problems. Total points are scaled to 200.
- No exam may be taken outside scheduled time without prior arrangement with instructor.
- No exams can be made up if student does not show up at the scheduled or arranged time.
- No electronic devices other than an approved calculator may be used while taking any exams.

Quizzes:

- Quizzes may be given at instructor's discretion and cannot be made up.
- Quizzes are 5 points each.

Assessment and Grading:

Final grade is based on the weighting shown below

<table>
<thead>
<tr>
<th>Performance in class:</th>
<th>10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework:</td>
<td>20%</td>
</tr>
<tr>
<td>Quizzes:</td>
<td>15%</td>
</tr>
<tr>
<td>Mid-term exam 1:</td>
<td>15%</td>
</tr>
<tr>
<td>Mid-term exam 2:</td>
<td>15%</td>
</tr>
<tr>
<td>Final exam:</td>
<td>25%</td>
</tr>
</tbody>
</table>

Grade scale for total percentage points and corresponding letter grade is given below

<table>
<thead>
<tr>
<th>0</th>
<th>60</th>
<th>63</th>
<th>67</th>
<th>70</th>
<th>73</th>
<th>77</th>
<th>80</th>
<th>83</th>
<th>87</th>
<th>90</th>
<th>95</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>D-</td>
<td>D</td>
<td>D+</td>
<td>C-</td>
<td>C</td>
<td>C+</td>
<td>B-</td>
<td>B</td>
<td>B+</td>
<td>A-</td>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

**Note:** This course is a prerequisite for EE 230 and EE 231 – you must complete the course with grade C or better.
Academic Integrity

You are responsible to behave ethically and honestly. Copying, cheating, forgery, and other unethical or dishonest actions are not tolerated, will result in a zero grade, and may be reported to SSU authorities. For more information on SSU policy on academic cheating and plagiarism please refer to: http://www.sonoma.edu/uaffairs/policies/cheating_plagiarism.htm

Classroom Learning Civility Clause

In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning.

Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. For additional information and resources, please refer to SSU policy on civility and tolerance at: http://www.sonoma.edu/students/civility_tolerance.pdf

Disability Support Services

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in Salazar Hall, Room 1049 in order to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course.

- Phone: (707) 664-2677
- Email: disability.services@sonoma.edu
- Web: http://www.sonoma.edu/dss/students/dss_services.html

For more information on SSU policy on disability access for students, please refer to: http://www.sonoma.edu/uaffairs/policies/disabilitypolicy.htm

Other Policies

Be sure you understand the policies that specifically affect you as a student of this course, such as:

- Add/Drop Policy: http://www.sonoma.edu/catalog/08-10/17regulations.pdf#adddrop
- Grade Appeal Policy: http://www.sonoma.edu/uaffairs/policies/grade_appeal.htm
Course Learning Objectives (CLOs)

By the end of this course, the student should be able to:

A. apply the underlying principles of basics circuit analysis
B. perform mesh and nodal analysis
C. use simulation software to better understand circuit design
D. demonstrate understanding of the principles of high-pass and low-pass filters
E. analyze linear circuits with ideal Operation Amplifiers
F. use phasors for steady-state sinusoidal circuit analysis
G. Develop critical thinking skills through circuit analysis and design

Student Learning Outcome vs Course Learning Objectives

<table>
<thead>
<tr>
<th>ABET Students Outcomes</th>
<th>CLOs</th>
<th>Level of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) an ability to apply knowledge of mathematics, science, and engineering</td>
<td>A-G</td>
<td>4</td>
</tr>
<tr>
<td>(b) an ability to design and conduct experiments, as well as to analyze and interpret data</td>
<td>A-F</td>
<td>4</td>
</tr>
<tr>
<td>(c) an ability to design a system, component, or process to meet desired needs</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(d) an ability to function on multi-disciplinary teams</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(e) an ability to identify, formulate, and solve engineering problems</td>
<td>A-G</td>
<td>4</td>
</tr>
<tr>
<td>(f) an understanding of professional and ethical responsibility</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(g) an ability to communicate effectively</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(i) a recognition of the need for, and an ability to engage in life-long learning</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>(j) a knowledge of contemporary issues</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice</td>
<td>C, G</td>
<td>2</td>
</tr>
</tbody>
</table>

Level of support (0-5): 0=No support, 1=Lowest support, 5=Highest support

Assessment Methods

Assessment of student learning:

1. Examination (mid-term and final exams)
2. Homework assignments
3. Quizzes

Assessment of course quality:

1. Student survey
2. Student verbal and peer instructor feedback