

ELECTRICAL CIRCUIT ANALYSIS – ESE271
SPRING 2019

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LECTURE:

Tuesday and Thursday 11:30 am to 12:50 pm, Social & Behavioral Sci. S328

Recitations: R01 M 12:00 pm – 12:53 pm Physics P128
R02 W 12:00 pm – 12:53 pm Physics P128

OFFICE HOURS:

Tuesday and Thursday 9:00 am – 11:00 am, or by appointment

COURSE WEBSITE:

The course is registered with the Blackboard

TEXTBOOK:

Fundamentals of Electric Circuits, 6th edition. Charles K. Alexander and Matthew N.O. Sadiku, McGrawHill (2017) 10: 0078028221

GRADING POLICY:

The course grade will be calculated using the following weights:

Test 1	15%
Test 2	15%
CAD tool test	10%
Comprehensive Final	60%

HOMEWORK:

Homework will be assigned on a regular basis but NOT graded for credit. However, it will be collected and evaluated for common misunderstandings. You are strongly advised to do the homework assignments by the specified time.

CAD TOOLS:

PSpice and MATLAB assignments will be given on a regular basis for students to enhance proficiency in the analysis of electrical circuits and for introduction to circuit design.

Download free version of ORCAD PSpice tools from this link:

<http://www.orcad.com/resources/download-orcad-lite?downloadrequestsucces=true>

MATLAB is accessible through SINC Sites, SoftWeb, Virtual SINC Site

RECITATIONS:

Recitations are used as specific CAD tool development sessions, as well as problem solving. These sessions provide students an opportunity to interact closely with the TA to go over specific difficulties encountered with assignments.

TEST POLICY:

- Use of all electronic devices is prohibited.
- Approved calculators allowed.
- All tests will be **closed book**.
- Student photo ID must be available for inspection.
- NO make up tests.
- Zero tolerance for academic dishonesty.

TEST SCHEDULE: Test dates are subject to change.

Test 1	Feb 26
Test 2	Apr 11
Final - cumulative	May 21: 11:15 am to 1:45 pm

ACADEMIC INTEGRITY STATEMENT:

Academic Integrity: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at

<http://www.stonybrook.edu/uaa/academicjudiciary/>

Americans with Disabilities Act

Americans with Disabilities Act: If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC(Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Weekly lecture topics:

Week 1	29-Jan	Lecture 1. Basic concepts: current, voltage, power.
	31-Jan	Lecture 2. Resistor. Ohm's law. Kirchoff's laws.
Week 2	5-Feb	Lecture 3. Nodal and Mesh analysis.
	7-Feb	Lecture 4. Circuit theorems I
Week 3	12-Feb	Lecture 5. Circuit theorems II
	14-Feb	Lecture 6. Dependent sources and operational amplifiers.
Week 4	19-Feb	Lecture 7. Circuits with operational amplifiers
	21-Feb	Lecture 8. Material review.
Week 5	26-Feb	Test 1
	28-Feb	Lecture 9. Capacitors.
Week 6	5-Mar	Lecture 10. Inductors.
	7-Mar	Lecture 11. First order RC and RL circuits. Time constants.
Week 7	12-Mar	Lecture 12. Second order RLC circuits
	14-Mar	Lecture 13. AC circuits: Sinusoids and phasors. Impedance. RLC circuits.
Week 8	x	Spring recess
Week 9	26-Mar	Lecture 14. AC steady state. Nodal analysis.
	28-Mar	Lecture 15. AC steady state. Mesh analysis.
Week 10	2-Apr	Lecture 16. AC power analysis.
	4-Apr	Lecture 17. Magnetically coupled circuits. Transformers.
Week 11	9-Apr	Lecture 18. Material review.
	11-Apr	Test 2.
Week 12	16-Apr	Lecture 19. Frequency response function. Bode plots.
	18-Apr	Lecture 20. Resonant filters.
Week 13	23-Apr	Lecture 21. Laplace Transform.
	25-Apr	Lecture 22. Laplace Transform.
Week 14	30-Apr	Lecture 23. Circuits in s-domain. Transfer functions.
	2-May	Lecture 24. Step and impulse response. Poles. Stable circuits.
Week 15	7-May	Lecture 25. Two port networks.
	9-May	Lecture 26. Material review.