ELECTRICAL CIRCUIT ANALYSIS – ESE271
SPRING 2021

Harbans S. Dhadwal
E-mail: harbans.dhadwal@stonybrook.edu
Voice: 632 8396; Fax: 632 8494
Light Engineering, Room 213

SYNCHRONOUS LECTURES VIA ZOOM

LECTURE:
Tuesday and Thursday 11:30 am to 12:50 pm, via Zoom

OFFICE HOURS:
Tuesday and Thursday 9:00 am – 11:00 am, via Zoom

COURSE WEBSITE:
The course is registered with the Blackboard

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

GRADING POLICY:
The course grade will be calculated using the following weights:

Test 1	20%
Test 2	20%
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.

TEST POLICY: [REVISED FOR SYNCHRONOUS ONLINE DELIVERY]
- Students must take the tests with an operational video feed, for instructor view.
- All tests will be **open book**.
- Student photo ID must be available for inspection through the video link.
- NO make-up tests.
- Zero tolerance for academic dishonesty.

TEST SCHEDULE: Test dates are subject to change.

Test 1	Feb 25: 11:30 am 12:50 pm
Test 2	April 6: 11:30 am to 12:50 pm
Final - cumulative	May 18: 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 are confidential.

Weekly lecture topics:

ESE271 Spring 2021			
Week 1	Feb 2	Lec #1	Basic concepts: current, voltage, power
	Feb 4	Lec #2	Resistor, Ohm's law, Kirchhoff's laws
Week 2	Feb 9	Lec #3	Nodal and Mesh analysis
	Feb 11	Lec #4	Circuit theorems
Week 3	Feb 16	Lec #5	Dependent sources and operational amplifiers
	Feb 18	Lec #6	Circuits with operational amplifiers
Week 4	Feb 23	Lec #7	Material review
	Feb 25	**Test 1**	**Chapters 1 to 5**
Week 5	Mar 2	Lec #8	Capacitors
	Mar 4	Lec #9	Inductors
Week 6	Mar 9	Lec #10	First order RC and RL circuits
	Mar 11	Lec #11	Second order RLC circuits
Week 7	Mar 16	Lec #12	Second order RLC circuits
	Mar 18	Lec #13	AC circuits, sinusoids and phasors, impedance, RLC circuits
Week 8	Mar 23	Lec #14	AC steady state, nodal and mesh analysis
	Mar 25	Lec #15	AC steady state, nodal and mesh analysis
Week 9	Mar 30	Lec #16	AC power analysis, complex power
	Apr 1	Lec #17	Material review for Test 2
Week 10	**Apr 6**	**Test 2**	**Chapters 6 - 11**
	Apr 8	Lec #18	Introduction to three phase circuits
Week 11	Apr 13	Lec #19	Magnetically coupled circuits, transformers
	Apr 15	Lec #20	Frequency response function, Bode plots
Week 12	Apr 20	Lec #21	Resonant filters
	Apr 22	Lec #22	Laplace Transform - definition
Week 13	Apr 27	Lec #23	Laplace Transform - properties
	Apr 29	Lec #24	Laplace Transform - application for circuit analysis
Week 14	May 4	Lec #25	Circuits in s-domain, transfer functions
	May 6	Lec #26	Step and impulse response. Poles. Stable circuits.
Week 15	5-May	Lec #25	Two port networks
	7-May	Lec #26	Material review
FINAL – May 18: 11:15 am to1:45 pm		**CUMMULATIVE**	