

Electric Circuits

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Lecture 1 (Intro)

Outline

- What to expect from the course
- Evaluation
 - Homework
 - Study Session
 - Midterm
 - Final exam

Instructor

- ✓ Raised in British Columbia, Canada.
- ✓ Completed Ph.D. in August of 2010, at Queen's University.
- ✓ Completed Post-Docs at Chalmers University of Technology and the University of Luxembourg.
- ✓ Assistant professor at CSUB for the past 3 years.
- ✓ Now an assistant professor at Boise State.
- ✓ Research Interests:
 - Millimeter wave communication systems
 - Large-scale multiple antenna wireless systems
 - Application of signal processing algorithms in communication systems
 - Cooperative communication systems
 - Heterogeneous networks
 - Synchronization and channel estimation

Lectures

Mondays, Wednesdays,
1:30-2:45 PM

Mission

To get clear understanding and knowledge of principles of circuits, nodal analysis, power transfer, operational amplifiers, capacitors, inductors, circuit analysis, natural/step response of circuits.

Text Books

- **Supplementary book:** “Fundamentals of Electric Circuits”, 5th or lower editions, by Charles Alexander and Matthew Sadiku, McGraw-Hill Education
 - A lot of examples
- **Supplementary book:** “Schaum’s Outline of Electric Circuits, 6th edition (Schaum’s Outlines)” 6th Edition, Mahmood Nahvi and Joseph Edminister, McGraw-Hill Education
 - Lots of solved problems which is key to grasping the topics

Means of Communication

➤ Website

- Lectures related to the course will be posted here www.mehrpouyan.info
- The slides are posted and videos are on their way.

➤ Office hours

- They are scheduled for 1:30-2:30 on Tuesdays.

➤ Email

- You can email me at any time and I will try to do my best to answer your question or schedule you in for a meeting hani.mehr@ieee.org

Homework

- 20% of your total grade.
- **Written Homework Assignments and Projects** are to be turned in at the beginning of the class on Wednesdays.
- Late homework will not be accepted no exceptions applied. I am sorry but we need to be fair. The following constitutes as a late submission :
 - Hand-in your homework at the end of the lecture on Monday.
 - Hand-in your homework at the end of the day.
 - Hand-in your homework because you are sick with no Dr.'s note.

Time line

Semester Week	Calendar Week of	Reading Assignments from Textbook	Material Covered in Class
1	Jan 9	Chapters 1.1-1.6	Electric Circuit Variables and Concepts, Circuit Elements, Ohms law
2	Jan 16	Chapter 2.1-2.6	Kirchoff's laws, nodes, series/parallel
3	Jan 23	Sections 3.1-3.3	Nodal Analysis;
4	Jan 30	Sections 3.4-3.5	Mesh Analysis
5	Feb 6	Sections 3.6-3.8	Mesh and Nodal Analysis
6	Feb 13	Sections 4.1-4.4	Circuit Theorems, linear properties and superposition EXAM1: Chapters 1-3, Wednesday
7	Feb 20	Sections 4.5-4.6, & 4.9	Thevenin's Theorem and Norton's Theorem

Time line

8	Feb 27	Sections 5.1-5.4	Amplifiers, ideal, inverting, non inverting, summing, and difference amplifiers
9	Mar 6	Sections 5.1-8.9	Amplifiers, ideal, inverting, non inverting, summing, and difference amplifiers
10	Mar 13	Sections 6.1-6.5	Capacitors and Inductors
	Mar 20	Spring Break	No classes
11	Mar 27	Sections 7.2, 7.3, 7.5, and 7.6	First Order circuits, source free RC, RL, and Step response of RC and RL circuits
12	Apr 3	Sections 7.2, 7.3, 7.5, and 7.6	First Order circuits Exam2: Chapters 5-8, Wednesday
13	Apr 10	Sections 8.2-8.4	Second Order Circuits, Source free series and parallel RLC
14	Apr 17	Sections 8.5-8.6	Step Response of Series RLC and parallel RLC circuits
15	Apr 24	Section 8.7	General second order circuits; Final Exam review
16	May 1		Comprehensive Final Exam; Monday May 1st, 3:00-5:00 PM

Grading

- Here is the outline for the grading process:
 - Written HW and Projects 20%
 - Attending Study Sessions 10%
 - Midterm Exam 1 15%
 - Midterm Exam 2 15%
 - Final 40%
- If your Final exam grade is better than any of your Midterm exam grades it will replace that midterm's grade. Hence, the final has the possibility of counting for 55% of your grade
- Please do not worry about grades leave that to me