ECE103
FALL 2019
General information

Instructors

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TA Carsten Dietvorst (dietvorstcj@gmail.com)

Textbook: Fundamentals of Electric Circuits by A.K. Alexander and M.N.O. Sadiku.

Grading criteria
First exam: 15%
Second exam: 15%
Quizzes: 15%
Final: 25%
Homework 15%
Laboratory 15%
Extra credit reading assignments 5%
The system +/- will be used in this class

Exams dates:

First Midterm Exam	Thursday OCTOBER 17
Second Midterm Exam	Thursday DECEMBER 5
Final	DECEMBER 20. 9:40 AM (same classroom)

Grading scale:

95+	*A+*	*75-79.99*	*B*	*40-54.99*	*D*
90-94.99	*A*	*70-74.99*	*B-*	*<40*	*F*
85-89.99	*A-*	*65-69.99*	*C+*		
80-84.99	*B+*	*55-64.99*	*C*		

IMPORTANT Miscellaneous Information

- **A passing grade requires that the average for all the exams (the 2 midterms and the final) be a passing grade, this is more than 55%**
- **Homeworks will be assigned weekly. Homeworks must be completed in the McGraw Hill website (Connect). Any HW submitted after the deadline will have a penalty. The deadline will be indicated in each homework**
- **Quiz tests: will be given in class and will be short tests multiple choice**
- **Laboratories are MANDATORY. To pass the class you must complete all laboratory experiments and present ALL your laboratory reports.**
- **For the lab activity you will use the DIGILENT package. You will be allowed to complete the lab activity at home and turn in the report with the TA in the lab section you are enrolled. The TA will be available to help you with the lab activity during the labs sections.**
- **There will be reading assignments that will count as 5 extra points towards the final grade. You will find the reading assignments in the Connect section. The extra credit points will be awarded ONLY if the assignments are completed before the deadline**
- **Buy the access code for the smart book (CONNECT) from the CSU bookstore. It provides extended access time as compared with the code acquired in the McGraw Hill website. You might have to use your CONNECT access in ECE202**

HELP

Office hours:

Marconi: Tuesdays and Thursdays 1:00 to 3:00 PM

The TA will be available for help during the Lab sections

EXTRA HELP OPTIONS WILL BE ANNOUNCED IN CLASS

TOPICS

Basic concepts
- System of units
- Charge, current and voltage
- Power and energy
- Circuit elements

Basic Laws
- Ohm's Law
- Nodes, Branches and Loops
- Kirchhoff's Law
- Series and parallel resistors
- Voltage Dividers
- Current Dividers
- Wye-Delta transformations

Methods of Analysis
- Nodal Analysis
- Nodal Analysis with Voltage Sources
- Mesh Analysis
- Mesh Analysis with Current Sources

Circuit Theorems
- Linearity
- Superposition
- Source Transformation
- Thevenin's theorem
- Norton's theorem
- Maximum Power Transfer

Operational Amplifiers
- Introduction
- Ideal Op Amp
- Inverting Amplifier
- Non-inverting Amplifier
- Summing Amplifier
- Difference Amplifier
- Cascade Op Amps circuits
- Digital to analog converter
- Instrumentation amplifiers

Capacitors and Inductors
- Introductory ideas
- Series and parallel capacitors
- Series and parallel inductors

Integrator
Differentiator
Analog Computer

First-Order Circuits

Source free RL and RC circuits
Step response for RC and RL circuits
Singularity functions
First order Op Amp circuits

Second-Order Circuits

Source free RLC circuit (series and parallel)
Step response for a RLC circuit (series and parallel)
General second order circuits
Second order Op Amp circuits

Textbook: "Fundamentals of Electric Circuits". C.K. Alexander and M.N.O. Sadiku-McGraw Hill, Chapters 1 to 8