

ECE103

Fall 2024

General information

Instructors

Mario Marconi. (mario.marconi@colostate.edu)

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Teaching Assistants:

Nick Theobald.

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Steven.Strevell@colostate.edu

Contact the TAs only and exclusively about issues related with **Laboratory** assignments. For all other issues contact Prof. Marconi

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

Grading criteria

First exam: 15%

Second exam: 15%

Quizzes: 15%

Final: 25%

Homework 10%

Laboratory 15%

Reading assignments 5%

The system +/- will be used in this class

Quizzes dates

Quiz 1 (Chapter 1)

Thursday AUGUST 29

Quiz 2 (Chapter 2)

Tuesday SEPTEMBER 10

Quiz 3 (Chapter 3)

Tuesday SEPTEMBER 24

Quiz 4 (Chapter 4)

Tuesday OCTOBER 8

Quiz 5 (Chapter 5)

Tuesday OCTOBER 29

Quiz 6 (Chapter 6)

Tuesday NOVEMBER 12

Quiz 7 (Chapter 7)

Thursday NOVEMBER 21

Exams dates:

<i>First Midterm Exam</i>	<i>Thursday OCTOBER 10</i>
<i>Second Midterm Exam</i>	<i>Tuesday DECEMBER 3</i>
<i>Final</i>	<i>Thursday DECEMBER 10 2:00 to 4:00 PM</i>

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		

Homework Instructions.

All homeworks will be solved on line using the Connect registration

- Homeworks will be assigned periodically. Homeworks must be completed in the McGraw Hill website (Connect). Any HW submitted after the deadline automatically will have a penalty. The deadline will be indicated in each homework
- There will be reading assignments that will count as 5% towards the final grade. You will find the reading assignments in the Connect section. The credit points will be awarded ONLY if the assignments are completed before the indicated deadlines
- 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
- Two attempts are allowed to complete each homework.
- If used, in the second attempt you will be able to review the problems you solved incorrectly in your first attempt
- There is no score reduction for using the second attempt. The program will keep the best score
- Solutions to the problems will be available 12 hours after the deadline
- There is a 10% penalty for each hour late after the deadline

VERY IMPORTANT: You are responsible to submit the homework. Notice that the program DOES NOT submit automatically (you must do it manually). If you forget to submit the homework on time there it will be impossible to remove the tardiness penalty

Laboratory instructions.

- To pass the class you must complete all laboratory experiments and present all your laboratory reports. To complete the laboratory activities, you have a personal kit with all the necessary elements (DIGILENT Analog Device). Work at your own pace at home and in the lab during the lab sections to complete all the labs.
- The laboratories and the corresponding reports are mandatory. The reports are individual: each student must complete the experiments and complete the personal reports. Any plagiarism will be penalized.
- For the lab activity you will use the DIGILENT package. You can complete the lab activity at home and turn in the report uploading the file (in pdf format) in CANVAS (or any other method previously arranged with the TA). The TA will be available to help you with the lab activity during labs consultation sections. Please read the “Announcements” in CANVAS for further details
- The first 5 lab activities and reports must be completed by the 7th week of class. The week September 30-October 4 is a make up week for labs 1 to 5.
- The lab reports should be uploaded in CANVAS on a weekly basis, at the indicated deadlines. Any deviation from this policy must be arranged with the TA in advance
- For the first two laboratory activities you must have a CSU account that will allow you to access the necessary software. Please make sure you have the account activated before the second week of class. For any question regarding this issue, contact the Engineering Technology Service (ETS) [<https://www.engr.colostate.edu/ets/>]

Lectures:

- All lecture notes will be posted in CANVAS, in pdf format, in the “**Modules**” folder

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%

- Quiz tests: After completion of each chapter, there will be a quiz. The dates for all 7 quizzes are listed above. The quiz will be simultaneous for all students, and will take place in the classroom during lecture hours

HELP

- Office hours with Prof. Marconi will be held as virtual meetings. For office hours consulting please send an e-mail to professor Marconi (mario.marconi@colostate.edu) to arrange a virtual conference. We will use the video conference platform Zoom.
- When help is needed, please use the following procedure: send an e-mail to Prof. Marconi with your question. Include in the subject "ECE103 office hours".
 1. If the questions can be answered by emails, that will be the first option. Emails will be answered within 24 hours.
 2. If you need more detailed help, or the question is too complex or too long to be answered by email, you will receive an email with the invitation to join a virtual meeting
- **Office hours have an open agenda.** I will answer your requests on demand with a virtual meeting.
- Additional sources of help will be posted in "Announcements"

Video conference platforms information: Zoom [<https://zoom.us/download>].

VERY IMPORTANT!

Read the announcements in CANVAS. All news, deadlines, dates and times of the exams, etc. will be posted in Announcements and in this Syllabus. If you cannot find the answer to your question, please send us (professor Marconi or TA) an email.

Topics

Basic concepts

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

Basic Laws

Ohm's Law
Kirchhoff's Law
Series and parallel resistors
Wye-Delta transformations

Methods of Analysis

Nodal analysis

Mesh analysis

Circuit Theorems

Linearity

Superposition

Thevenin's theorem

Norton's theorem

Operational Amplifiers

Introduction

Ideal Op Amp

Capacitors and Inductors

Introductory ideas

Series and parallel capacitors

Series and parallel inductors

First-Order Circuits

Source free RL and RC circuits

Step response for RC and RL circuits