

ECE3710C/D: Circuits and Electronics

M/W 6:05 – 6:55 PM IC 105
Instructor Douglas DesCamps
Office Hours M/W 7-8PM
Email: gtg051d@prism.gatech.edu
Textbook: Electrical Engineering by Hambley

Course Prerequisite: Phys 2122. Not for electrical or computer engineering students.

Course Objective: An introduction to electrical circuit elements and electronic devices and a study of circuits containing such devices. Both analog and digital systems are considered.

Homework: May consult other students. No homework will be collected. Quizzes will cover and reinforce concepts covered in the homework.

Exams: You may bring a one-sided 8.5" x 11" sheet to the exams. This sheet must be hand written. No printed sheets or photocopies will be allowed. An additional sheet may be added for each consecutive exam.

Final Exam: The final exam will be a three hour exam. The final will be held at 6:00PM, April 26, 2004.

Grading:

Quizzes	10%	
Exam 1	20%	Feb 4
Exam 2	20%	Feb 25
Exam 3	20%	Mar 31
Final Exam	30%	Apr 26

Make-up exams: There will be no makeup exams unless coordinated in advance with a valid reason or a note from the Georgia Tech Health Center.

Honor Code: Violations of the honor policy will result in automatic course failure. Refer to the school honor policy for further information.

Professionalism: Students are expected to maintain professionalism at all times. Unprofessional conduct will be reflected in the student's final grade.

In Conclusion: (a quote from my good friend and brilliant engineer, Alan Michaels)

“The number one concern is that you learn a working engineer's vocabulary to relate electrical engineering to your field of expertise and are subsequently able to apply it to the EIT exam and general performance in coming years as a helluva engineer ☺”

TOPIC OUTLINE

DC Circuit Analysis

Independent and Dependent Sources

- Kirchoff's Laws
- Node Analysis
- Loop Analysis
- Thevenin's and Norton's Theorems

AC Circuit Analysis

- Energy Storage in Capacitors and Inductors
- Sinusoidal Analysis and Impedence
- Resonance

Power in AC

- Effective Values
- Real, Reactive, and Apparent Power
- Power Factor
- Three-Phase Power

Introduction to Electronics

- Ideal Diodes
- p-n Junction Transistors
- BJT Switching and Amplifiers
- Junction Field-Effect Transistors
- JFET Switches and Amplifiers

Digital Electronics

- Introduction to Digital Electronics
- Logic Circuits
- Boolean Representation and DeMorgan's Theorems
- Sequential Systems

Analog Electronics

- Operational Amplifiers
- Operational Amplifier Circuits
- Filters and Communication Systems
- Transformers