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
  Kirchhoff’s Laws
  Node Analysis
  Loop Analysis
  Thevenin’s and Norton’s Theorems

AC Circuit Analysis
  Energy Storage in Capacitors and Inductors
  Sinusoidal Analysis and Impedance
  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