ENEE 206: Basic Circuit Theory

Syllabus

The course introduces students to fundamental principles and analysis techniques of electrical circuits. It covers the basics of linear analog electric circuits; Kirchhoff’s laws; equivalent circuits; DC, transient and sinusoidal responses; fundamental circuit components (resistor, capacitor, and inductor); frequency-selective circuits; time-domain and frequency-domain analysis techniques, including the Laplace transform. The course includes a mandatory laboratory section in which the student performs laboratory exercises and writes associated reports. Prior knowledge of basic electrical and magnetic phenomena, calculus, and linear differential equations is required.

Prerequisites: PHYS 122, MATH 225

Topics:

- Basic Elements and Laws
- Circuit Analysis Principles
- Circuits with Inductors and Capacitors
- Circuits with OpAmps
- Transient and Steady-State Behavior
- Laplace Transform Analysis
- Circuit Design and Analysis Software


Grading:

- Homework: 10%
- Lab exercises and reports: 20%
- Interim exams: 40%
- Final exam: 30%

Course Time:

- MW 2 - 3:15pm Location: ACIV 150 (B-Wing)
- Lab Sections:
  - (1) Tu 10am-12pm Location: ITE 242
  - (2) Tu 3-5pm Location: ITE 242

Instructor: Prof. Joel M. Morris, x53503, morris@umbc.edu

ITE 308, TRC 255

Office Hours: MW 1 - 2pm, or by appointment
Policy on Turning-in Assignments

Hand-in homework on the due day at the beginning of lecture, and hand-in lab reports at the beginning of the next lab section. Late homework and reports will not be accepted. Copying homework and lab reports is not allowed, and will result in a grade of zero for both persons.

Student Academic Integrity

"By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are to be held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC Policies section of the UMBC Directory."

UMBC Rules on Cheating/Copying

You may get together and discuss homework and the lab exercises. You must do your own work, however, and not copy from anyone else! Copying/cheating will result in a minimum punishment of a zero grade for that assignment.