Electrical Engineering (EE)

Electrical Engineering (EE) Classes

EE 160 : Programming for Engineers

Credits: 4
Class Hours: 3 lecture and 3 lab
Prerequisites: Qualified for MATH 241.
Description: This is an introductory course on computer programming and modern computing environments with an emphasis on algorithm and program design, implementation and debugging. Designed for engineering students, this course includes a hands-on laboratory to develop and practice programming skills.
Semester Offered: Fall, Spring
Course Student Learning Outcomes (CSLOs):

1. Demonstrate structures and unions types.
2. Write algorithms and code in a top-down manner.
3. Write functions and use pointers.
4. Work with characters and strings.
5. Demonstrate arrays in searching and sorting applications.
6. Work in a text-based environment like UNIX.
7. Explain the steps involved in the programming process.
8. Use the fundamental techniques of selection, looping, assignment, input, and output to describe the steps the computer takes to solve a problem.
9. Write, test, and debug small programs.
10. Interface with text base using a GUI interface.
11. Solve simple problems and express those solutions as algorithms.

EE 211 : Basic Circuit Analysis I

Credits: 4
Class Hours: 3 lecture and 3 lab
Prerequisites: Concurrent enrollment in MATH 243 or qualified for MATH 244.
Description: This course studies linear passive circuits, time domain analysis, transient and steady-state responses, phasors, impedance and admittance; power and energy, frequency responses, and resonance.
Semester Offered: Fall, Spring
Course Student Learning Outcomes (CSLOs):

1. Design and test R, RC, and op amp circuits.
2. Analyze and solve RLC and basic op amp circuits.
3. Conduct experiments to test and verify theory.

EE 213 : Basic Circuit Analysis II

Credits: 4
Class Hours: 3 lecture and 3 lab
Prerequisites: "C" or higher EE 211. "C" or higher or concurrent enrollment in MATH 244.
Description: This course studies Laplace transforms, Fourier transforms, convolution and the applications to circuits, frequency selective circuits, design of active filters, and state space analysis of circuits.
Semester Offered: Fall, Spring
Course Student Learning Outcomes (CSLOs):

1. Perform nodal, loop, and state formulations and analysis of sinusoidal steady state circuits.
2. Represent circuit responses in terms of sinusoidal phasor notation, Laplace transformations, convolutional determination, and Fourier representations.
3. Design simple filters including a Butterworth filter.
4. Build and measure circuits, and work in a team.

5. Write clear and complete laboratory reports.
6. Apply Matlab or similar math analysis software to analyze and design circuits.

EE 296 : Sophomore Project

Credits: 1
Class Hours: 1 lecture
Prerequisites: Approval of instructor.
Comments: May be repeated for a maximum of 4 credits.
Description: Sophomore level individual or team project under EE faculty direction and guidance. The project provides design experience and develops practical skills.
Semester Offered: Fall, Spring
Course Student Learning Outcomes (CSLOs):

1. Prepare clear written reports.
2. Orally communicate design and engineering concepts effectively.
3. Accomplish beginning-level design with respect to engineering standards and practical constraints.
4. Learn new design methodologies; tools; techniques for data collection and analysis; and/or instruments with minimal instruction from the faculty advisor.