

Department of Electrical and Computer Engineering
520.137 Introduction to Electrical and Computer Engineering

2004-05 Catalog: An introductory course covering the principles of electrical engineering including sinusoidal wave forms, electrical measurements, digital circuits, and applications of electrical and computer engineering. Laboratory exercises, the use of computers, and a design project are included in the course. Open to freshman Engineering majors and any Arts and Sciences majors. (3 Credit Hours/Elective)

Prerequisite(s): High-school mathematics and physics

Textbook: Kuc, Roman. The Digital Information Age – An Introduction of Electrical and Computer Engineering, PWS Publishing Co.; ISBN 0534953158, 1998

Course Objectives: Introduce fundamental topics that represent the field of electrical and computer engineering; provide hands-on experience in the laboratory, discuss other topics related to the broader field of engineering.

- Topics Covered:
1. Overview of Electrical and Computer Engineering
 2. The Analog Domain
 3. Introduction to Circuits
 4. Introduction to Excel and Matlab
 5. Complex Signals
 6. Capacitors
 7. Communication
 8. Digital Domain
 9. Logic Circuits
 10. Signal Processing
 11. Information Coding and Decoding
 12. Information Transmission

Class Schedule: Three – one hour classes/week, some of which is laboratory time

Contribution of Course to Meeting the Professional Component (credit hours):

| Engineering Science | Engineering Science and Design |
|----------------------------|---------------------------------------|
| 3 | |

Relationship of Course to Program Educational Outcomes (✓ those that apply):

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| x | Apply mathematics, probability and statistics, basic science, and computer science |
| | Design and conduct experiments, analyze and interpret data |
| x | Identify, formulate and solve electrical engineering problems |
| | Use technical skills and modern engineering tools to design to meet needs |
| | Communicate effectively and work on multidisciplinary teams |
| x | Contemporary issues, ethical responsibilities, environmental, health, safety issues |
| | Engage in life-long learning |