

University of Arkansas - Fort Smith
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General Syllabus

EETE 40003 Electronic System Design

Credit Hours: 3

Lecture Hours: 2

Laboratory: 2

Prerequisite: EETE 39503 Power Electronics

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

The synthesis of modern electronics, integrated circuits (ICs), and software into usable products.

B. Additional Information

This course will contain a practical element emphasizing Printed Circuit Boards (PCBs) design, selecting reliable electrical connections and switches, eliminating programming glitches, and evaluation of overall system performance. A semester long design project will be used to facilitate this outcome.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Design a four layer PCB.
2. Test reliability of electrical connectors and switches.
3. Program with faults in mind, and analyze complete systems for reliability and efficiency.
4. Design and build a faculty approved electronic system which integrates components from different manufacturers into one product hence gaining a better understanding of system integration.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Communication Skills (written and oral)

Students will write and present papers dealing with electronic system failures.

Ethical Decision Making

Students will research and present to the class a paper on engineering ethics related to system design. The paper should highlight an electronic system failure that has harmed the public.

III. Major Course Topics

- A. System analysis
- B. Stability
- C. Feedback control
- D. System malfunction
- E. Accommodation to failure
- F. PCB design
- G. Manufacturability