

**University of Arkansas - Fort Smith**  
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## **General Syllabus**

### **EET 4003 Electronic System Design**

Credit Hours: 3

Lecture Hours: 2

Laboratory: 2

Prerequisite: EET 3953 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