

University of Arkansas - Fort Smith
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General Syllabus

ELEC 1242 Introduction to Electronics Technology

Credit Hours: 2

Lecture Hours: 1

Laboratory Hours: 2

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Introduces the basic terms, powers of ten usages, component identification, and fundamental circuit building required to be successful in the pursuit of electronics technology.

B. Additional Information

The Electronics technician must understand how to read the labeling on devices in order to properly select the correct valued component for circuit building, testing and repair. In order to troubleshoot effectively, the electronics technician needs a comfortable working knowledge of the common test equipment available in order to narrow down the faulty section needing repair. And to complete the process, the electronics technician must understand and be able to perform many complex manipulative steps involved in soldering and desoldering circuit board mounted components, wiring harnesses, coaxial cable assemblies, and other electronic components in accordance with recognized international standards that can lead to certification.

II. Student Learning Outcomes

A. Subject Matter

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

1. Identify resistors using the Resistor Color Code.
2. Identify capacitors and inductors using the labeling techniques provided by the manufacturer.
3. Using common test equipment, measure and verify the labeled tolerance of resistors, capacitors and inductors.

4. Calculate series/parallel resistance problems using electronic calculator and then measure with appropriate test equipment and compare for accuracy.
5. Use the correct power of ten designations as required for components.
6. Correctly select components and build a circuit on a bread board by following a schematic diagram.
7. Demonstrate the proper use of common test equipment by successfully passing a competency exam.
8. Demonstrate soldering and desoldering skills by successfully completing 1 20-hour session on international soldering techniques which could lead to certification.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking - Students will draw conclusions and/or solve problems.

Quantitative Reasoning- Students will assign and use numbers, read and analyze data, create models, draw inferences, and support conclusions based on sound mathematical reasoning as it applies to the electronics technician.

III. Major Course Topics

- A. Resistor Color Code
- B. Capacitor and Inductor labeling
- C. Powers of ten
- D. Schematic reading and interpretation
- E. Circuit Bread Board building
- F. Common Electronic Test equipment use
- G. Apply international soldering/desoldering applications