

**Course Title:** INT 110 Fundamentals of Electricity

**Course Instructor(s):** William Bailey, Anthony Valente

**Programs:** Industrial Technology, Alternative Energy Technology,

### **Expected Learning Outcomes**

- Students will understand and be able to describe electron theory.
- Students will be able to describe the characteristics and differences between conductors and insulators.
- Students will be able to explain the concepts of current flow, AC/DC circuits and Ohms law.
- Students will be able to recognize standard schematic symbols for common electrical and electronic components.
- Students will be able to explain the operation and application of common components such as AC and DC motors, relays, switches, power supplies, overload devices and lighting.
- Students will be able to recognize and use common test equipment to evaluate electrical circuits.
- Students will be able to trouble-shoot basic electrical circuits using schematic diagrams.
- Students will be able to identify hazards of electrical circuits and be able to work safely.

### **Assessment**

Assessments will include:  
2 written test and a final exam.  
Classroom lab exercises and assignments.  
A final assignment in circuit design.

### **Validation**

1. Comparison of final exam results with national average skills in the electrical field of work.
2. The evaluation of student performance and ability to transfer knowledge to next level of class in the program.
3. Consult Advisory Committee participants as to performance of interns and hired students based on ability and knowledge gained.

## **Results**

The results of the testing and final examination will show the level of retention of the classroom materials.

The results of the lab exercises and assignments will show the ability of the student to transfer textbook information to hands-on applications.

The results of the Advisory Committee input will allow us to place a rate of success in our database for ongoing improvement to the course and advise us of changes in technology and industry standards.

*During the spring semester of 2014 it was noted that the students average grade was 80%. We continued the use of the new simulation software as well as the new theory trainers. Internship feedback indicates a rise in electrical understanding among those students given electrical task.*

## **Follow-up**

The data will be evaluated to improve teaching techniques

The data will be evaluated to help us remain up to date with technology changes.

*We decided last semester to increase the module basic controls and decrease the module time spent on series parallel circuitry. This appears to better balance the skill levels required by local businesses. Also by duplicating simulation task with hands on task, the students showed signs of better retention on exams.*

## **Budget Justification**

Update textbook to include changes in technology

Update lab equipment to keep pace with changes in technology

*No textbook changes or increase in budget required at this time.*