

Course Title: INT 110 Fundamentals of Electricity

Course Instructor(s): Anthony Valente

Programs: Industrial Technology, Alternative Energy Technology, ADM

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.

Students performed well during the spring of 2016 with an average class grade of 82%. During classroom and lab activities the students were able to perform exercises with minimal errors as expected with most students being exposed to electricity for the first time. The smaller class size the semester allowed for more one-on-one help with the materials. Students still tend to struggle a little with calculating combination circuits, but perform better when given an option as to which equation or process to use once exposed to multiple methods. More attention was given to practical applications due to noticing some shortcomings in upper classes that involve more application. It was reported by Mountain View solar management that one of our student graduates hired full-time has been given primary electrical responsibilities and is performing at an above-average level. It was also reported by millennium three energy who has one of our students full-time, that he is working part-time with an MEC electric in Hagerstown, when no solar projects are active. The student also performs at an above average level.

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

No follow-up required at this time.

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.