

Course Outcomes Guide

Course/Program Title: ELE 103 Analog and Digital Electronics

Date: 8/22/2012

Course/Program Team: Robert Fergesen & TCS

Expected Learning Outcomes

- Demonstrate knowledge of digital and analog electronics including dedicated microcomputers in instrumentation and control systems
 - Evaluate circuits involving inductors, capacitors, and transformers.
 - Investigate various semiconductor devices by building and testing circuits using such components as diodes, scr's, triacs, high speed solid state switches used in A.C. and D.C. power applications
 - Describe Digital Electronics and the relationship to Analog circuits
 - Interface simple micro-processor based controls
- Knowledge of Instrumentation and Process Control hardware and software
 - Select and implement various instrumentation devices required to accomplish a task within a control system
- Knowledge of Instrumentation troubleshooting, repair and maintenance
 - Troubleshoot, isolate and fix electronic instrumentation problems
 - Carry out simple repair procedures for the correction of faults on instrument systems
- Exhibit professional/occupational behavior and work habits

Assessment (How do or will students demonstrate achievement of each outcome?)

- Exams
- Exercises and Assignments

Validation (What methods have you used or will you use to validate your assessment?)

The assessments will be validated by review from the following sources:

1. Faculty Peer validation
2. Industry validation through the Advisory Committee.

Results (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

The assessment will be planned at the end of the first semester this course will be offered: Fall 2012.

Follow-up (How have you used or how will you use the data to improve student learning?)

Assessment data will be gathered to be sure students are retaining key knowledge as required by future jobs in the industry. Additional course material or time will be added if scores do not show retention.

Budget Justification (What resources are necessary to improve student learning?)

No additional dollars will be required for the first semester we run this course because we will use materials already purchased for the Energy House and various electronic equipment currently in inventory at the college. Additional equipment may be required in semester 2 depending on the results.