EET-2290: ELECTRICAL DESIGN PROJECT

Cuyahoga Community College

Viewing: EET-2290 : Electrical Design Project
Board of Trustees:
2018-01-25

Academic Term:
Fall 2018

Subject Code
EET - Electrical/Electronic Engineer

Course Number:
2290

Title:
Electrical Design Project

Catalog Description:
Capstone course for Electrical-Electronic Engineering program. Designed
to allow students opportunity to demonstrate and apply capabilities and skills
acquired during their previous engineering technology coursework. Students will choose an approved electronic project compatible
with their interest and background. Project will include research, documentation, construction and testing, and conclude with a report
and presentation of results.

Credit Hour(s):
2

Lecture Hour(s):
1
Lab Hour(s):
3

Other Hour(s):
0

Requisites

Prerequisite and Corequisite
EET-2242 C and ASM Programming with Embedded Applications.

Outcomes

Course Outcome(s):
Demonstrate various skill sets used in the EET program to design, debug and demonstrate a project.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in
innovative or imaginative ways.

Objective(s):
1. Present a proposal for electrical design project that will serve as the prototype for a marketable project.
2. Determine wholesale and retail costs for the project.
3. Estimate the lifetime of the product
4. Independently research technical books, technical articles, or use the Internet to find electronic design project that meets course
expectations, or use default course project.
5. Construct and test electrical design project circuitry.
6. Use the internet to determine regulatory and safety standards.
7. Program the microprocessor in the project using C programming language or a similar structured language.
8. Design a case/container for the project.
9. Develop a marketing strategy for the project.

Course Outcome(s):

Use written and oral skills to present the project.

Essential Learning Outcome Mapping:

Oral Communication: Demonstrate effective verbal and nonverbal communication for an intended audience that is clear, organized, and delivered effectively following the standard conventions of that language.

Objective(s):

1. If a display is used, use English and a foreign language, like Spanish, to converse with the user.
2. Write a formal report describing the electrical design project.
3. Prepare a 10-minute oral presentation using presentation software.

Methods of Evaluation:

1. Working Project
2. Periodic progress reports
3. Written project report
4. Oral presentation

Course Content Outline:

1. Design project
   a. Use microcontroller and LCD display as core of project
   b. Establish objectives for the project
   c. Establish guidelines
   d. Timelines as determined to complete project
   e. Documentation notebook
   f. Presentation of design
2. Research guidelines
   a. Library search
   b. Internet search
3. Construction and testing
   a. Block diagram
   b. Detailed electrical schematic
   c. Electronics parts list
   d. Construction of project
   e. Testing of electronic circuitry
   f. Finalizing electronic circuit
4. Written project report
   a. Table of contents
   b. System description
   c. Results obtained
   d. Conclusion
5. Oral presentation (10 minutes)
   a. Use of presentation software
   b. Create block diagram
   c. Demonstrate clarity and effectiveness of presentation
   d. Complete classmate evaluation and ranking of oral presentation

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Resources

Floyd. *Digital Fundamentals.* 11th edition,. Pearson, 2014.

Boylestad. *Introductory Circuit Analysis.* 13 th edition,. Pearson, 2016.

Deitle. *C++ How to Program.* 10th edition,. Prentice Hall, 2016.

Duech, Reid. *Digital Electronics.* 1st edition,. Delmar, 2012.

Nilsson, Riedel. *Electric Circuits.* 6th edition,. Pearson, 2015.

Jim Heidenreich. *Microprocessors, Programing in C.* {ts '2008-01-01 00:00:00'}.

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