EET-2490: BIOMEDICAL DESIGN PROJECT

Cuyahoga Community College

Viewing: EET-2490 : Biomedical Design Project

Board of Trustees:

2015-06-25

Academic Term:

Fall 2018

Subject Code

EET - Electrical/Electronic Engineer

Course Number:

2490

Title:

Biomedical Design Project

Catalog Description:

Capstone course for Biomedical Engineering program. Designed to allow students to demonstrate and apply capabilities and skills acquired during their previous engineering technology coursework. Students are provided with a biomedical project compatible with their interest and background. Project includes research, documentation, construction and testing, and concludes 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-2220 Electronics II or concurrent enrollment, and EET-2410 Biomedical Instrumentation II or concurrent enrollment.

Outcomes

Course Outcome(s):

Perform in circuit analysis and design, analog and digital electronics, and engineering standards to the building, testing, operation, system integration and maintenance of electrical/electronics systems specific to the BMET field.

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. Independently research technical books, technical articles, and use the internet to obtain biomedical design project.
2. Present a proposal for biomedical design project.
3. Prepare and use Gantt Chart to establish timelines to complete overall project.
4. Construct and test biomedical design project circuitry.
5. Write a five-page written report describing biomedical design project.
6. Prepare a 10-minute oral presentation with 10 transparencies.

Methods of Evaluation:

1. Project notebook
2. Progress reports
3. Project report
4. Oral presentation

Course Content Outline:

1. Design project
   a. Objectives and guidelines
   b. Documentation notebook
   c. Presentation of design
   d. Periodic progress meetings
   e. System integration
   f. Grading policy
2. Research guidelines
   a. Library search
   b. Internet search
   c. Component research and selection
3. Construction and testing
   a. Block diagram
   b. Detailed electrical schematic
   c. Electronics parts list
   d. Construction of project
   e. Testing of biomedical circuitry
   f. Finalizing biomedical circuit
   g. Written project report (five pages)Table of contents
   h. System description
   i. Results obtained
   j. Conclusion
4. Oral presentation (10 minutes)
   a. Use of 8-1/2 x 11 " transparencies
   b. Block diagram
   c. 10 transparencies maximum
   d. Clarity and effectiveness of presentation
   e. Classmate evaluation and ranking of oral presentation

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