
MIDDLESEX COUNTY COLLEGE

COURSE SYLLABUS

Department:	Engineering Technologies
Program:	Electrical Engineering Technology
Course Number:	ELT 223
Title of Course:	Electronic Design and Manufacturing Project
Curriculum Coordinator:	James S. Finne
Designation:	Required Course

Course Description:

Capstone Project course where students will work in teams to design, build, test and present a working prototype project using electronics and embedded computer technology. Students will use schematic capture and printed circuit board layout software. Students will develop concepts and specifications, select component, analyze costs, do scheduling and planning, fabricate and assemble printed circuit boards and do a written and oral presentation.

Prerequisite:

ELT 226 Introduction to Microprocessors

Co-requisite:

ELT 210 Electronic Circuits and Systems

Textbooks and /or other required material:

Practical Electronic for Inventors by Scherz and Monk, McGraw Hill, 4th Ed
On-line resources and manufacturers' data sheets, available on-line, are used

Course Learning Outcomes and their relationships to Student Outcomes:

1. Demonstrate proficiency using schematic capture software. **(SO b)**
2. Demonstrate proficiency using printed circuit board layout software. **(SO b)**
3. Interpret manufacturers' product data sheets and vendor catalog information. **(SO b)**
4. Estimate time schedules and present project plans. **(SO i)**
5. Manufacture and assemble a printed circuit board prototype. **(SO j)**
6. Write design proposal and specifications.
7. Prepare a detailed technical report. **(SO d, f)**
8. Make an oral presentation.
9. Recognize the need for and an ability to engage in lifelong learning. **(SO g)**
10. Understand professional, ethical and social responsibilities.
11. Respect for diversity and knowledge of contemporary professional, societal and global issues. **(SO h)**
12. Commitment to quality, timeliness, and continuous improvement.

Topics Covered:

- Schematic capture software
- Circuit board design software and practices
- Photolithographic methods of printed circuit board manufacturing
- Time planning and scheduling
- Review of interface circuits, assembly code algorithms
- Tour of a local manufacturing facility

Class/laboratory schedule, i.e., number of sessions each week and duration of each session:

1 hour of lecture per week for 14 weeks

2 hour of laboratory per week for 14 weeks

Criterion 5 Contribution:

Technical Content

Prepared By:	James Finne	Date:	3-10-2008
Rev 1:	T. Sabol	Date:	4-12-2010
Rev 2:	T. Sabol Update mapping of course outcomes to ABET 2014-2015 student outcomes	Date:	3-24-2014
Rev 3:	General Update	Date:	3/15/21