

ECE4007 Course Syllabus

ECE4007

ECE Culminating Design Project (2-6-4)

Prerequisites

See topical outline

Corequisites

None

Catalog Description

Team-oriented culminating design project in electrical/computer engineering, incorporating engineering standards and realistic constraints. Requires formal reports and group presentations.

Textbook(s)

No Textbook Specified.

Course Outcomes

Upon successful completion of this course, students should be able to:

1. effectively work in teams to produce a final design project.
2. define the scope of a challenging open-ended design problem, research technical literature, and propose a design approach.
3. identify and apply appropriate engineering standards to a design and consider how multiple realistic design constraints affect design alternatives.
4. describe qualitative design goals, and determine quantitative design specifications.
5. prepare and update a project timeline in the form of a Gantt Chart, including tasks and milestones.
6. prepare and update a realistic project budget of actual development and prototyping costs; if appropriate, estimate manufacturing costs and profit.
7. reduce the design to practice in the form of a working prototype, and demonstrate performance of the prototype as compared to the quantitative specs.
8. prepare a thorough documentation package that is of sufficient detail so that other engineers could understand and recreate the project.
9. write documents with correct technical content, sufficiently detailed explanations, and proper formatting, spelling, punctuation, grammar, and usage.
10. make effective oral presentations incorporating significant technical content using standard presentation software.

Topical Outline

Prerequisites: ECE 4001* and (ECE 3005 or ECE 3006* or ECE 3042) and [all courses min C, except ECE 3005 or ECE 3006]

* Prerequisites indicated with an asterisk may be taken concurrently

ECE 4001/4007 will be replaced by ECE 4011/4012 beginning Fall 2013

This course satisfies the major design requirement for EE and CmpE

Working individually, students will research and write a topical ba

Working in teams, students will complete a semester-long project re

The course includes a weekly one-hour common lecture to provide sup

- * Course overview and deliverables
- * Proposal/PDR written report and oral presentation
- * Codes and standards
- * Project specifications
- * Project budget and schedule
- * Ordering parts
- * Intellectual property and laboratory notebooks
- * Design considerations, constraints and tradeoffs
- * Engineering documentation
- * Final written report and oral presentation
- * Project demonstration

All ECE 4007 projects must include, as a minimum, the following ele

Regular Progress Reports -- Minimum of four periodic (weekly report

Formal Written Design Proposal/Preliminary Design Review (PDR) -- E

Proposal/PDR Oral Presentation (requires significant participation

Final Written Report -- Each design team must submit a formal, writ

Final Oral Presentation (requires significant participation by each

Project Demonstration -- Prior to the end of the semester, each tea

Peer evaluation -- Each design team should participate in a formal