ECE3005 Course Syllabus

ECE3005

Professional and Technical Communications for ECE (0-2-0-1)

CMPE Degree

This course is Elective for the CMPE degree.

EE Degree

This course is Elective for the EE degree.

Lab Hours

0 supervised lab hours and 0 unsupervised lab hours

Course Coordinator

Bourgeois,Christina M

Prerequisites

ECE 2031/20X2 and (ECE3020* or ECE3025* or ECE3030* or ECE3040* or ECE3056* or ECE3072* or ECE3084*) * Prerequisites indicated with an asterisk may be taken concurrently with ECE3005

Corequisites

NONE

Catalog Description

Written, oral, and visual communication skills required by electrical and computer engineers. Prepares students for advanced communication tasks required in academic and professional settings.

Textbook(s)

No Textbook Specified.

Course Outcomes

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

1. Recognize and employ the basic conventions of technical and professional writing and the discipline-specific features of engineering documents.
2. Identify structure, organization, and content of common engineering documents: proposals, technical reports, instruction guides, design reports, resumes.
3. Work individually to write documents with audience-appropriate content and proper formatting, spelling, punctuation, grammar, and usage.
4. Integrate text and visuals to clearly convey complex technical information.
5. Revise documents and presentation materials (such as slides and posters) for content, organization, and writing style.
6. Work individually and in teams to develop and deliver audience-appropriate presentations with significant technical content using presentation software.
7. Provide feedback to peers on their writing and speaking and teamwork abilities.

Student Outcomes

In the parentheses for each Student Outcome:
"P" for primary indicates the outcome is a major focus of the entire course.

"M" for moderate indicates the outcome is the focus of at least one component of the course, but not majority of course material.
"LN" for "little to none" indicates that the course does not contribute significantly to this outcome.

1. (LN) An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. (LN) An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. (P) An ability to communicate effectively with a range of audiences
4. (LN) An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. (LN) An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. (LN) An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. (P) An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Topical Outline

1.Communication: The X-Factor
   a.The role of communication in engineering
   b.Engineers as writers
2.Career Exploration, Planning, and Preparation
   a.Writing employer-focused, results-driven resumes
   c.Navigating the job search process
   d.Preparing elevator pitches
3.Technical and Professional Documentation
   a.Conventions and standards of engineering writing
   b.Document structure, formatting, and content
   c.Applying ?Design Thinking? to writing
   d.Viewing communication in terms of problem framing and problem
   e.Identifying need/purpose for communicating
   f.Understanding the end-user (audience)
   g.Prototyping documentation deliverables
   h.Technical writing style and mechanics
   i.User-testing documents and the revision/editing process
   j. Producing relevant, user-focused, results-oriented docum
4.Technical and Professional Presentations
   a.Presentation types: 3MT, TED talks, Pecha Kucha
   b.Presentation software tools
   c. Identifying and articulating the message of a presentati
   d. Developing content to meet the needs and expectations of the
   e.Effectively and strategically using visuals, graphics, images,
   f. Transforming raw data and interpreting results to emphas
   g.Presentation delivery: eye contact, voice projection, pace, bo