ECE 4099W: Independent Study in ECE

Communicating Engineering Solutions in a Societal Context

Credits and contact hours: 1 Credit (One 50-minute class period)

Instructor: Team-taught (coordinator: Rajeev Bansal)

Textbook: none

Other supplemental materials: Selected Readings that discuss technology in a societal context and may serve as a source of writing samples will be posted online.

***Specific course information*:**

a. *Catalog Description*: *none*

b. *Prerequisite*: ENGL 1010 or 1011 or 2011; consent of instructor; open only to students in the School of Engineering.

c. *Required, elective, or selected elective:* Required

***Specific goals for the course*:**

a. *Specific outcomes of instruction*: Students will be able to
   - analyze and discuss engineering design solutions in a broad societal context.
   - search for, acquire, and use new knowledge from multiple sources for their papers.
   - communicate effectively, both in written and oral forms.

b. *EAC Criterion 3 Student Outcomes addressed by the course*:

(1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
n/a

(2) 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
n/a

(3) an ability to communicate effectively with a range of audiences
Students write two papers (a draft and a revised version for each) and make oral presentations.

(4) 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

Students read and discuss material addressing technological solutions in a broad context including ethical issues. The second written assignment and the oral presentation specifically address the impact of engineering solutions in ethical, global, economic, environmental, and societal contexts.

(5) 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
n/a

(6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
n/a

(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
Students use the web, library databases, and other resources to find material for their papers.

Topics covered:

- Principles of writing
- Representation of quantitative information: figures, graphs, tables
- Citations and references
- Oral presentations
- Societal context of technology