

**ECE 496 – PROFESSIONAL ISSUES AND CURRENT TOPICS SEMINAR (2 Credits)
Spring 2015**

Class Meets: Tue/Thu, 11:00-11:50am

Instructor: Jacek M. Zurada, Ph.D., Professor of ECE
Lutz 405, ph: 852-6314, fx: 852-3940, em: jacek.zurada@louisville.edu

References:

1. IEEE Technology and Society Magazine*
 2. Proceedings of the IEEE*
 3. IEEE Spectrum*
 4. IEEE Xplore (IEEE Electronic Library) via Uofl's Minerva, focus on IEEE Magazines
http://www.ieee.org/publications_standards/publications/journalmag/journals_magazines.html#
 5. Scientific American <http://www.scientificamerican.com/sciammag/>
 6. Codes of Ethics of:
The Institute of Electrical and Electronics Engineers (IEEE, <http://www.ieee.org/about/whatis/code.html>); and
The National Society of Professional Engineers (NSPE, <http://www.nspe.org/ethics/home.asp>)
 7. Other sources as assigned or found to be relevant to topics selected
- *) Access via UofL Library, IEEE Xplore

Catalog Description: Students receive instruction in making oral and written presentations to professional audiences. Topics include ethics issues in engineering; professionalism; a selection of technical topics of current interest that promote understanding of the global, economic, environmental, sustainability, and societal impacts of engineering; lifelong learning and critical thinking skills.

Course Objectives: To provide an opportunity and means for covering and discussions of ethical, global and societal issues in electrical engineering and for understanding of contemporary issues in the engineering profession.

General Plan of Study:

A. Reading Assignments:

Reading assignments as needed from sources dealing with topics related to the course objectives (most sources listed under References).

B. Oral Presentations:

Two main oral presentations in class are planned for each student:

1. Short talk; introduce yourself and your expectations in this course, an icebreaker Talk (1st week)
2. Presentation covering contemporary technical topic in electrical engineering discussed in global/societal context. It should include content relative to broad societal, economic, environmental and global issues.

3. Presentation covering ethical/societal responsibilities of engineers. It should demonstrate the ability to apply engineering ethics and analyze ethical issues using professional society codes of ethics.

C. Written Presentations (Papers):

Three papers will be assigned:

1. Critical Thinking Essay based upon a topic related to broad societal, economic, environmental and global issues involving electrical engineering discussed in a professional publication (listed under **References**).
2. Full-length paper covering contemporary technical topic in global/societal context (see B2 above for the co-assignment)
3. Full-length paper covering ethical/societal responsibilities of engineers (see B3 above for the co-assignment)

The IEEE Manuscript Format (posted separately) will be required for Papers 2, 3.

Other Activities: The remaining class time will be devoted to the discussion of various topics of interest, including ethics, professional societies, continuing education, lifelong learning, library and web resources, globalization, and intellectual property issues, the skills of chairing and participating in team meetings. Class participation is important and required.

Attendance: Attendance is required!

Grading:

- 1) Critical Thinking Essay or short written homework assignments: 6%
- 2) Paper and presentation covering contemporary technical topic in global/societal context: 40%
- 3) Paper and presentation covering ethical/societal responsibilities of engineers: 40%
- 4) Attendance and class activity: 14% (2% subtracted for each unexcused absence)

- A - All requirements are met or exceeded on each assignment.
- B - Substantially meets all requirements on each assignment, with only minor deficiencies in one or two assignments.
- C - Satisfies requirements of the majority of the assignments, with major deficiencies in remaining assignments.
- D - Major deficiencies in all assignments.
- F - None of the requirements are addressed.

+/- grades will be used in the top and bottom thirds of each grade level.

Academic and Professional Integrity:

I expect you to act professionally and ethically, in accordance with the **Code of Student Rights and Responsibilities** <http://louisville.edu/dos/policies-and-procedures/code-of-student-rights-and-responsibilities.html> (see especially, **Sec. 5. Academic Dishonesty**, and **Sec. 6. Discipline Procedures for Academic Dishonesty**), and relevant sections of the **Codes of Ethics** of professional societies: the *Association for Computing Machinery* ([ACM](#)), the *Institute of Electrical and Electronics Engineers* ([IEEE](#)) and the *National Society of Professional Engineers* ([NSPE](#)).

Cheating of any form, including the use of assignments from prior semesters or a work of someone else and plagiarism (defined in the Code of Student Rights and Responsibilities, Section 5.E. as "*Representing the words or ideas of someone else as one's own in any academic exercise, ...*") can result in disciplinary action, including an F in the course and suspension/expulsion from the School and University.

Disabilities:

The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. Students with disabilities, who need reasonable accommodation to complete assignments successfully and otherwise satisfy course criteria, are encouraged to meet with the instructor during the first week of the semester to identify and plan specific accommodations. Students are asked to supply a letter from the Disability Resource Center, certifying their eligibility, and other documentation, as needed, which will assist in planning of modifications. Students may also contact the Disability Resource Center at <http://louisville.edu/disability/> for information, verification of eligibility and auxiliary aid.

COURSE LEARNING OUTCOMES

1. The ability to analyze and understand ethical principles related to the electrical engineering profession, as exemplified by the IEEE Code of Ethics.
2. The ability to analyze and understand ethical issues involved in the engineering profession by participating in class discussion on topics dealing with engineering ethics.
3. The ability to organize and present oral presentations on a (a) technical topic, and on (b) ethics-societal responsibilities topic.
4. An understanding of global and societal issues in electrical engineering through independent research and learning resources, as demonstrated by written documentation, including both presentation slides and papers.
5. Acquire and improve skills in written communication through completion of the above four activities