

EE 405, EE Senior Research Seminar

Lecturer: Dr. Jacek M. Zurada

Professor of ECE

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Class: Tuesday 11:10-12:10 CT (12:10-1:10 ET)

Office Hours: Tuesday 12:20-1:30 CT (1:20-2:30 ET), via Skype/Phone, Skype name: jacek.zurada

For a Disability Statement see the footnote

EE Senior Research Seminar, 1 credit hour, 1 contact hour, Co-requisites: EE 401 or permission of instructor

Catalog listing: Contemporary topics in electrical and computer engineering, literature surveys, requirements for scientific reporting, ethics, patent law and contract law.

The purpose of this course is to introduce students to: current research areas in electrical and computer engineering, searching the literature in electrical engineering and related fields, the requirements of scientific reporting, the peer review process, the issues of ethics, patents and copyrights

Course Objectives:

- Learn the scope and tools of engineering research, and identify selected research issues of the EE field
- Learn how to perform literature searches in EE and related fields
- Understand the differences between peer-reviewed and non-peer-reviewed technical communications
- Write a technical research paper
- Prepare and deliver orally a technical research presentation
- Acquire basic understanding of copyright, contract and patent laws
- Analyze scenarios involving ethical issues in practicing engineering
- Understand a role of professional organizations in engineering research and practice

Course Content:

- Ethics issues in practicing engineering (1 class)
- The field of electrical and computer engineering: an overview (1 class)
- Faculty presentations of research/technical topics in EE (3 classes)
- Publishing in engineering: what qualifies as a stand-alone scientific article? Types of articles and who writes them: original study, review paper, literature and reference search, online databases. Guidelines for writing a research paper; components of a scientific document; reporting a theoretical result; reporting an experimental result; surveying a topic (1 class)
- Guidelines for technical paper writing: choosing appropriate journals/conferences in a specific field of study, referencing others' works. Case studies (1 class)
- Copyright, patent, intellectual property laws (1 class)
- IEEE and professional organizations in engineering research and practice (1 class)

- Tour of laboratories in J.B. Speed School of Engineering, ECE Department, E-Library training (1 day at UofL – counts as 2 classes)
- Student presentations (3 or 4 classes), wrap-up and discussion (1 class)

Course Reading: None

Oral Assignments: Two presentations are planned for each student:

1. Short ice-breaker talk: introduce yourself and your expectations in this course (informal, not graded, 2nd class meeting of the semester)
2. *Technical Research Presentation* on a research/technical topic in electrical engineering (based on the *Technical Research Paper*)

Written Assignments:

1. *Technical Research Paper Proposal* demonstrating your motivation, interest and readiness to adequately cover the chosen topic
2. Full-length *Technical Research Paper* (companion to your Technical Research Presentation in class and to your PPT Slides). The paper needs to conform to the IEEE Manuscript Format.
3. Two additional minor written assignments that mirror class discussions

Attendance: Attendance is required and checked!

Contact with the Instructor:

Outside the office hours anytime via email to jacek.zurada@louisville.edu, always put 405 in the email Subject line

Grading:	Class Attendance:	22% (4% subtracted for each absence)
	Participation:	8% (two minor assignments)
	<i>Technical Research Paper Proposal:</i>	10% (content, writing style and format)
	<i>Technical Research Presentation:</i>	10% (oral delivery graded only)
	<i>PPT Slides:</i>	10% (style and format of slides only)
	<i>Technical Research Paper:</i>	40% (content, writing style, format)

- 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 regular assignments.
- C - Satisfies requirements of the majority of the regular assignments, with major deficiencies in remaining assignments.
- D - Major deficiencies in all regular assignments.
- F - None of the requirements are addressed.

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In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Office for Student Disability Services in Downing University Center, A-200. The phone number is (270) 745-5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.