

The University of Texas at Tyler  
Department of Electrical Engineering

**EENG 4315 Senior Design II (Required)**

**Syllabus**

Catalog Description:

The senior design project, which was begun in EENG 4115, continues to completion. This capstone design project builds on previous course work, includes all stages of the design process, and takes into account a variety of realistic constraints such as manufacturability and sustainability; economic factors; and environmental, safety, and reliability issues. Preparation and presentation of final oral and written reports are required. Nine hours of Design Studio Lab per week.

Prerequisites: EENG 4115

Credits: ( 0 hours lecture, 3 hours laboratory)

Text(s): None

Additional Material: None

Course Coordinator: Hassan El-Kishky

Topics Covered: (paragraph of topics separated by semicolons)

This course does not include lectures or presentations of specific topics. The principal interaction between faculty and students is through project design reviews in which faculty meet with individual teams on a periodic basis to discuss design choices and progress toward the project goals.

Evaluation Methods: (only items in dark print apply):

1. Examinations / Quizzes
2. Homework
3. Report
4. Computer Programming
5. Project
6. Presentation
7. Course Participation
8. Peer Review

Course Learning Objectives<sup>1</sup>: By the end of this course students will be able to:

1. Produce a detailed design solution taking into account design specifications, appropriate engineering standards, and multiple realistic constraints [5].
2. Conduct appropriate simulations prior to design prototyping [5]
3. Construct a prototype or example of the design solution [5].
4. Devise tests to evaluate the performance of the prototype [5].
5. Measure the performance of the prototype [3]
6. Use modern engineering tools including modeling and simulation software and virtual instruments [3]
7. Perform experiments as members of a team [5,7,8]

8. Utilize engineering literature such as technical manuals and product datasheets to select components to meet experimental or prototype requirements [3]
9. Apply relevant codes and standards in the design solution [3]
10. Discuss relevant professional ethics related to the design solution e.g. product reliability, effect on environment, teamwork ethics etc. [3]
11. Describe the impact of the project technology on society [3]
12. Participate in the planning, preparation, and delivery of well-organized and logical oral presentations.[6,7]
13. Produce a final project report using appropriate style, grammar, and graphics [3].

<sup>1</sup>Numbers in brackets refer to method(s) used to evaluate the course objective.
























Relationship to Program Outcomes (only items in dark print apply)<sup>2</sup>: This course supports the following Electrical Engineering Program Outcomes, which state that our students will:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. [5]
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 [1,3,4].
3. An ability to communicate effectively with a range of audiences [12,13].
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 [9,10,11].
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 [7]
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions [2,6].
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. [8].

<sup>2</sup> Numbers in brackets refer to Course Learning Objective(s) that address the Program Outcome.

<u>Prepared By:</u>	David M. Beams	<u>Date:</u>	11 January 2018
	James A. Vasil		21 January 2019
	Prabha Sundaravadivel		January 2020

## Course Summary:

Date	Details	
Fri Jan 17, 2020	 <a href="#">Qualtrics Survey</a>	due by 5:01pm
Sun Jan 26, 2020	 <a href="#">Initial Status Report</a>	due by 11:59pm
Mon Jan 27, 2020	 <a href="#">Week 2 meeting docs submission</a>	due by 5:01pm
Thu Jan 30, 2020	 <a href="#">Unnamed plus Quiz</a>	due by 12:30pm
Mon Feb 3, 2020	 <a href="#">Week 3 meeting docs submission</a>	due by 5:01pm
Mon Feb 10, 2020	 <a href="#">Week 4 meeting docs submission</a>	due by 5:01pm
Fri Feb 14, 2020	 <a href="#">Peer Evaluation III</a>	due by 11:59pm
Mon Feb 17, 2020	 <a href="#">Week 5 meeting docs submission</a>	due by 5:01pm
Mon Mar 2, 2020	 <a href="#">Week 7 meeting docs submission</a>	due by 5:01pm
Fri Mar 27, 2020	 <a href="#">Week 9 meeting docs submission</a>	due by 5:01pm
Mon Mar 30, 2020	 <a href="#">TEMPLATE is PROVIDED Electronic Poster - One power point slide or one pdf file DUE MARCH 30</a>	due by 5:01pm
Mon Apr 20, 2020	 <a href="#">Movie or VIDEO - One File Only .. Exmple Provided</a>	due by 11:59pm
Wed Apr 22, 2020	 <a href="#">Peer Evaluation IV (Upload to Canvas - Read Instructions)</a>	due by 11:59pm
	 <a href="#">Presentation Rehearsal / Marathon</a>	due by 11:59pm
Fri Apr 24, 2020	 <a href="#">Exit Survey</a>	due by 5pm
	 <a href="#">Final Report, documentation, and Design Package</a>	due by 11:59pm
Tue Apr 28, 2020	 <a href="#">(old: Design Expo Performance) - New: Project External Evaluation</a>	due by 11:59pm
Thu Apr 30, 2020	 <a href="#">Advisor Evaluation</a>	due by 11:59pm
	 <a href="#">Engineering Ethics</a>	
	 <a href="#">Engineering Ethics Extra Credit</a>	
	 <a href="#">Makeup Quiz</a>	
	 <a href="#">Purchase Orders for Approved Teams</a>	
	 <a href="#">Sign-off completed and sheet signed by sponsor</a>	