

**The University of Texas at Tyler**  
**Department of Electrical Engineering**

**EENG 4105: Undergraduate Research Seminar**

**Syllabus**

Catalog Description:

This course focuses on preparation of students for engineering research: literature survey, generation of hypothesis, experiment design, research methodology, analysis and interpretation of data using a set of published scientific research papers.

Prerequisites:

Credits:

1 ( hours lecture, 0 hours laboratory per week )

Text(s):

None

Additional Material:

MATLAB Tools, Arduino IDE

Course Coordinator:

Premananda Indic, PhD and Prabha Sundaravadivel, PhD

Topics Covered: (paragraph of topics separated by semicolons)

Introduction to research, Literature search, Hypothesis generation, design of experiments, data collection and analysis, Interpretation of results, technical writing, poster presentation, peer review process, collaboration and conflicts .

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

1. Discuss technical literature [1]
2. Perform peer review of scientific papers [3]
3. Conduct a literature search/survey [2]
4. Hypothesis generation [1]
5. Data Collection and Analysis [6]
6. Presentation of results [7]
7. Present a research paper [3]
8. Create a poster presentation [3]
9. Write a research paper [3]
10. Peer review process [4]
11. Collaboration and conflicts [5]

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

Relationship to Program Outcomes (Student Learning Outcomes)<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; [1,4]
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; [3]
3. an ability to communicate effectively with a range of audiences; [7,8,9]
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; [10]
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; [11]
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions; [5]
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies. [6]

<sup>2</sup>Numbers in brackets refer to course objective(s) that address the Program Outcome.

Contribution to Meeting Professional Component: (in semester hours)

Mathematics and Basic Sciences:		hours
Engineering Sciences and Design:	1	hours
General Education Component:		hours

Prepared By:

Premananda Indic, PhD  
Prabha Sundaravadivel, PhD

Date:

27 May 2020  
1 January 2021

**The University of Texas at Tyler  
Department of Electrical Engineering**

**Course: EENG 4105 – Undergraduate Research Seminar**

COURSE OUTLINE

Course  
Coordinators:

**Dr. Premananda Indic**  
Assistant Professor, Department of Electrical Engineering  
**Office:** RBN 2010  
**Email:** [pindic@uttyler.edu](mailto:pindic@uttyler.edu)  
**Office Hours:** Friday 11AM - 12 PM  
Email and Discussion Boards.

**Dr. Prabha Sundaravadivel**  
Assistant Professor, Department of Electrical Engineering  
**Office:** RBN 2015  
**Email:** [PSundaravadivel@uttyler.edu](mailto:PSundaravadivel@uttyler.edu)  
**Office Hours:** M 2 -5 PM  
Email and Discussion Boards.

Class Location/Time: Friday 12:00 PM – 1 PM

Meeting ID: 946 5731 4481  
Passcode: EENG4105

Grading Policy:

Presentations	60%	No. of Presentations - 3
Final Presentation	40%	
<b>Total</b>	<b>100%</b>	

Semester Schedule:

Date	Discussion	Presentation due
January 15	Research topics	
January 22	Research topics	
January 29		Presentation -1
Feb 5	Research topics	
Feb 12	Research topics	
Feb 19		Presentation -2
Feb 26	Research topics	
March 5	Research topics	
March 12	Spring break	
March 19		Presentation – 3
March 26	Research topics	
April 2	Research topics	
April 9	Research topics	
April 16	<b>Final Presentation</b>	

### Mode of Delivery:

Hybrid Model. The semester will begin with synchronous zoom classes. Students are expected to login through zoom to attend the lectures. If the student has any concerns or would like to share their feedback on the lectures, email the Instructor anytime.

### Research Presentations:

Students are expected to conduct a literature survey based on the topics of interest and make a 15-minute presentation for each paper. This presentation can be done through zoom meeting. There will be a total of 3 presentations with a 20% weightage for each.

### Final Presentation:

This course will have a final presentation. Students are expected to give a comprehensive presentation of the journals they have read through the semester. Faculties and students from the College of Engineering will be invited to attend the presentation.

### Academic Integrity:

Students should be aware that absolute academic integrity is expected of every student in all undertakings at the University of Texas at Tyler. A plagiarism check will be done all the presentations submitted by students. Copied or unoriginal solutions will result in a “0” in that course component. An evidence of a pattern in academic dishonesty will lead to strong university-imposed penalties.

### Accommodation:

If you have a disability, including a learning disability, for which you request disability support services/accommodation(s), please contact the Disability Support Services office, so that the appropriate arrangements may be made. In accordance with the Federal Law, a student requesting disability support services/accommodation(s) must provide appropriate documentation of his/her disability to the Disability Support Services Counselor. For more information, call or visit the Student Accessibility and Resources Center located in the University Center, Room 3150. The Telephone number is 903.566.7079. Additional information may also be obtained at the following UT Tyler website: <https://www.uttyler.edu/disabilityservices/>

Happy Learning!