

ENGR 3901, 3902, 3903: Undergraduate Research in Engineering

This course is a technical elective.

Course Coordinator:

Loren Limberis

Catalog Description:

Study of an experimental or theoretical area involving engineering analysis and design. Demonstrates depth of analysis and study beyond scope of existing courses.

Course Structure:

Supervised individual research. May be repeated for credit as technical elective. This is a research experience for course credit and grade. Required participation is minimum two semesters with same faculty advisor. Students are required to perform a minimum of 4 hours of research / laboratory / computational / experimental work per week per course credit hour. (i.e. 12 credit hours per week for ENGR 3903)

Prerequisites:

Consent of instructor and chair.

Required Materials:

Laboratory Notebook per instructor requirements. Other materials determined by instructor based on research topic.

Course Learning Outcomes:

Upon completion of this course each student will be able to:

- Demonstrate the ability to state a research problem.
- Develop a realistic plan of investigation.
- Perform literature review
- Design and conduct an experiment or develop and test a design.
- Record data as appropriate in Laboratory Notebook.
- Cite references, create bibliographies, and utilize reference database systems such as RefWorks or equivalent
- Prepare technical papers and presentations based on research experience.

Laboratory/Recitation Topics:

Based on research topic.

Relevant Program Outcomes

Graduates of the engineering program will demonstrate

- a) an ability to apply knowledge of mathematics, science, and engineering
- b) an ability to design and conduct experiments, as well as to analyze and interpret data.
- e) an ability to identify, formulate and solve engineering problems

g) an ability to communicate effectively.

Professional Component Content:

Math/Science: 0; Engineering: 1-3 credits; General Education: 0

Assessment Requirements:

Student Work Samples:

- Presentations
- Technical Papers or report from research work

Targeted Exam Questions: N/A

Student Course Survey

Last Review:

April 15, 2008 by Stephanie T. Sullivan and Loren Limberis