

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

Course: EENG 4109 – Electronic Circuit Analysis II Laboratory (Required)

Syllabus

Catalog Description:

Frequency response and distortion in electronic circuits; operational amplifiers; feedback; digital circuits, power electronics. One three-hour laboratory per week.

Prerequisites: EENG 4309 (prerequisite or co-requisite)

Credits: (0 hours lecture, 3 hours laboratory per week)

Text(s): None

Additional Material: None

Course Coordinator: David M. Beams

Topics Covered: (paragraph of topics separated by semicolons)

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

1. Examinations / Quizzes
2. Homework
3. Reports (and laboratory notebooks)
4. Computer Programming
5. Project
6. Presentation
7. Course Participation
8. Peer Review

Course Objectives¹: By the end of this course students will be able to:

1. Measure the transfer characteristics of an MOS inverter [1,3]
2. Measure the electrical performance of a simple operational amplifier [1, 3]
3. Apply small-signal linear analysis of circuits involving active semiconductor devices to predict their performance [1, 3]
4. Analyze feedback circuits and determine when a feedback circuit will oscillate [1, 3]
5. Design and analyze active filters [1, 3]

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

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

1. have the ability to apply knowledge of the fundamentals of mathematics, science, and engineering [1-6] **(2)**
2. have the ability to use modern engineering tools and techniques in the practice of electrical engineering [1-6] **(3)**
3. have the ability to analyze electrical circuits, devices, and systems [1-5] **(2)**
4. have the ability to design electrical circuits, devices, and systems to meet application requirements [1-6] **(2)**
5. have the ability to design and conduct experiments, and analyze and interpret experimental results [1-6] **(3)**
6. have the ability to identify, formulate, and solve problems in the practice of electrical engineering using appropriate theoretical and experimental methods [1-6] **(2)**
7. have effective written, visual, and oral communication skills [1-6] **(1)**
8. possess an educational background to understand the global context in which engineering is practiced, including:
 - a. knowledge of contemporary issues related to science and engineering;
 - b. the impact of engineering on society;
 - c. the role of ethics in the practice of engineering;
9. have the ability to contribute effectively as members of multi-disciplinary engineering teams
10. have a recognition of the need for and ability to pursue continued learning throughout their professional careers.

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

Numbers in **BOLD** refer to the course-to-Program Outcome weight:

(1) = Outcome is a *minor* focus of this course;

(2) = Outcome is a *significant* focus of this course;

(3) = Outcome is a *major* focus of this course.

Program outcomes in light print have course-to-Program Outcome weights of 0.

Prepared By: David M. Beams Date: 18 January 2011