

The University of Texas at Tyler  
Department of Electrical Engineering

**Course: EENG 1201 – Electrical Engineering I (Required)**

**Syllabus**

**Catalog Description:**

An introduction to basic concepts in electrical engineering; elements of electric circuit design; the use of computer-based electrical engineering tools; team design project.

**Prerequisites:** ENGR 1200

**Credits:** 2 ( 1 hours lecture, 3 hours laboratory per week )

**Text(s):**

**Additional Material:**

**References:**

1. Instructor's Lecture Notes
2. Projects, workshops, and lab sheets

**Course Coordinator:** Hassan El-Kishky, Assistant Professor of Electrical Engineering

**Topics Covered:** (paragraph of topics separated by semicolons)

Introduction to Electrical Engineering  
Charge, Current, and Voltage  
Resistors and Ohm's Law  
Series Circuits, Parallel Circuits  
Series-parallel Circuits  
Voltage Dividers and Current Dividers  
Kirchhoff's Laws  
Network Theorems  
Batteries  
Alternating Voltage and Current  
Capacitance and Inductance  
Electronic Devices  
Team design project

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

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

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

1. Appreciate the value of electrical engineering profession to society [8]
2. Build a big picture of electrical engineering applications [8]
3. Build a link between math and electrical engineering [1,2]
4. Understand the basic concepts of electrical engineering [1,2]
5. Understand the basic concepts of circuits analysis [2-7]
6. Build basic electrical engineering lab skills [1,2]
7. Build basic written, visual and oral communication skills [7]
8. Apply computer-based tools (Matlab®) for circuit analysis [2]

<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. have the ability to apply knowledge of the fundamentals of mathematics, science, and engineering [3,4].
2. have the ability to use modern engineering tools and techniques in the practice of electrical engineering [4,5].
3. have the ability to analyze electrical circuits, devices, and systems [1-6].
4. have the ability to design electrical circuits, devices, and systems to meet application requirements [1-6].
5. have the ability to design and conduct experiments, and analyze and interpret experimental results.
6. have the ability to identify, formulate, and solve problems in the practice of electrical engineering using appropriate theoretical and experimental methods [1-6].
7. have effective written, visual, and oral communication skills [6].
8. possess an educational background to understand the global context in which engineering is practiced, including [1,2].:
  - 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.

<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:	0	hours
Engineering Sciences and Design:	2.0	hours
General Education Component:	0	hours

Prepared By: Hassan El-Kishky

Date: 01/10/2007