The University of Texas at Tyler
Department of Electrical Engineering

EENG 1101 – Introduction to Electrical Engineering (Required)

Syllabus

Catalog Description:

An introduction to the Electrical Engineering profession, sub-disciplines and careers. Familiarization with basic concepts in electric circuits, digital systems, electronics, power systems, communications, and computer engineering including applications. One hour of lecture per week.

Prerequisites:	None
Credits:	1 (1 hours lecture, 0 hours laboratory per week)
Text(s): (Required)	None
Additional Material: (Recommended)	None
Course Coordinator:	Mukul Shirvaikar, Professor of Electrical Engineering

Topics Covered:

1. The Electrical Engineering Profession and Careers
2. History of Electrical Engineering
3. Electrical Concepts and Components: Direct and Alternating Voltage and Current, Resistance, Capacitance and Inductance
4. Dimensions and Units and Greek Alphabet
5. Complex Variables
6. Digital Systems
7. Power Systems
8. Electronics
9. Communication Systems
10. Computer Engineering
11. Professional Society Meetings
12. Talks by Practicing Engineers and Faculty Members

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

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

Course Learning Outcomes[1]: By the end of this course students will be able to:

1. List and describe electrical engineering careers paths and professional societies encouraging IEEE membership. [1]
2. List and describe contributions of the electrical engineering profession to society. [2]
3. List and describe basic electrical concepts, and components [1]
4. Recall dimensions and units and Greek alphabet used in electrical engineering. [3]
5. Compute resistance for series and parallel combination of resistors with real life examples. [1]
6. Perform computations with complex variables and basic phasor operations. [1]
7. Describe basic logic gates and truth tables in digital systems. [1]

8. List major components of electric power systems. [1]
9. Describe basic electronic components and circuits. [1]
10. List and describe basic concepts of communication systems. [1]
11. Describe the various topics of study in computer engineering. [1]
12. Participate in professional society meetings. [7]

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

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

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

[2]Numbers in brackets refer to course learning outcomes/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:	1.0	hours
General Education Component:	0	hours

Prepared By: Mukul Shirvaikar Date: 08/23/2021