

EE 547- Utilization of Electrical Energy

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

COURSE COORDINATOR

Dr Rania El Sharkawy

TEXT BOOK:

Lecturer Notes

COURSE DESCRIPTION:

Study of illumination. Electrical heating and welding, direct energy conversion, UPS standby power systems and lifts. Electrical safety engineering study.

PREREQUISITE:

EE442

RELATION OF COURSE TO PROGRAM:

Elective

COURSE INSTRUCTION OUTCOMES:

The student gains knowledge on the major utilization loads, drives and electrical safety.

TOPICS COVERED:

- Terms used in illumination and laws of illumination.
- Design of illumination schemes.
- Electric heating, arc furnaces and electric welding.
- Traction system characteristics and control.
- Electrolytic processes. Refrigeration and air conditioning.
- Electric safety engineering

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional Component Content			
Math and Basic Sciences	Engineering Topics	General Education	Engineering Design
	✓	✓	✓

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course Outcomes
a.	An ability to apply knowledge of mathematics, science, and engineering.	
b.	An ability to design and conduct experiments, analyze and interpret data.	
c.	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	✓
d.	An ability to function on multi-disciplinary teams.	
e.	An ability to identify, formulate, and solve engineering problems.	✓
f.	An understanding of professional and ethical responsibility.	
g.	An ability to communicate effectively.	
h.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal content	
i.	A recognition of the need for, and an ability to engage in life-long learning.	
j.	A knowledge of contemporary issues within and outside the electrical engineering profession.	
k.	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	✓