

EE 442- Power System Protection I

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

COURSE COORDINATOR

Dr Rania El Sharkawy

TEXT BOOK:

A.T Johns and S.K. Salman, "Digital Protection for Power System", Peter Peregrinus, Latest Edition

COURSE DESCRIPTION:

General principles of protection. Types of relays and construction of over current relays. Instrument transformers. Fuses and Circuit breakers. Over-current relay settings. Directional relays. Protection of lines and distance protection Differential protection. Protection of transformers. Protection of motors. Protection of generators.

PREREQUISITE:

EE 441

RELATION OF COURSE TO PROGRAM:

Required

COURSE INSTRUCTION OUTCOMES:

The student gains knowledge on principles of operation of the different types of relays, circuit breakers and fuses in power system protection and the appropriate circuit for the protection of the various components of power system.

TOPICS COVERED:

- General principles of protection.
- Operation of the different types of relays.
- Circuit breakers and fuses.
- Protection of the various components of power system.

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.	✓