

EE 333- Electric & Magnetic Field II

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2; Tutorial: 2

COURSE COORDINATOR

Prof. Yasser Galal

TEXT BOOK:

W. J. Hayt and J.E. Kemmerly, " Engineering Electro Magnetics", latest Edition, Mc Gram – Hill , 1989

COURSE DESCRIPTION:

The steady magnetic field. Analogy between steady magnetic field and Electrostatic field. Magnetic forces. Magnetic Materials and Inductance. Time varying fields. Maxwell's four equations. The uniform plane wave.

PREREQUISITE:

EE331

RELATION OF COURSE TO PROGRAM:

Required

COURSE INSTRUCTION OUTCOMES:

The student gains knowledge on basic theory of steady magnetic, electrostatic fields and time varying fields. He/ She is capable of solving different problems in time varying fields and waves using four Maxwell's equations.

TOPICS COVERED:

- The steady state magnetic field
- Electro static field
- Magnetic forces
- Magnetic materials and inductances
- Time varying fields
- Maxwell's four equations
- The uniform phase wave.

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.	