Republic of Iraq

The Ministry of Higher Education

& Scientific Research

بسم الله الرحمن الرحيم

University: Diyala
College: Engineering
Department: Communications
Stage: 2nd
Lecturer name: Riyadh K. Ahmed
Academic Status: lecturer
Qualification:Ph.D.
Place of work: Communications Dept.

Flow up the implementation of course syllabus

Course Instructor	**Riyadh K. Ahmed**				
E_mail	riyadhkhalaf@engineering.uodiyala.edu.iq				
Title	Electromagnetic fields				
Course Coordinator	**3hours weekly**				
Course Objective	This course is designed to introduce to the student the fundamentals of the theory of electromagnetic fields. The course will provide in-depth knowledge of electric field, gauss law, divergence theorm, energy stored in electrostatic field, capacitance and magnetic field				
Course Description	The subject divided in to several chapters, as follow: Chapter One: vector algebra Chapter two : gauss law and divergence Chapter three: energy density in electrostatic field Chapter four: capacitor Chapter five: magnetic field, magnetic material and magnetic potential				
Textbook	Engineering Electromagnetics MC-Graw Hill; 5th Edition; 1992;7th Reprint 1995. By Willaim H. Hayt.				
Course Assessment	First Term	Mid-Year	2nd Term	Project	Final Exam
	20 %		20 %	----	60 %
General Notes	1- Elements of engineering . Electromagnetic prentice Hall; 3rd Edition; 1992 By N.N.RAO. 2- Theory and problems of electromagnetics MC.Graw Hill; 2nd Edition; 1993. By Joseph A				

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Course Weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	3/10	Vector algebra		
2	10/10	Coloumbs law		
3	17/10	Electric flux intensity		
4	24/10	Flux density		
5	31/10	Columb distribution, point charge		
6	7/11	field of line charge		
7	14/11	Volume charge		
8	21/11	field of sheet of charge		
9	28/11	Gauss law		
10	5/12	Electric flux density , Maxwell ’s first equation		
11	12/12	Gauss ‘s law – application of Gauss’s law		
12	19/12	differential Volume element – divergence		
13	26/12	Energy & potential		
14	2/1	Conductors; dielectrics; semiconductors and capacitance		
15	9/1	Conductors; dielectrics; semiconductors and capacitance		
16	16/1	Poisson's and Laplace's equations		
Half-Year Break				
17	20/2	Steady magnetic field		
18	27/3	Steady magnetic field		
19	6/3	Magnetic forces and materials		
20	13/3	Magnetic forces and materials		
21	20/3	Time- varying field and Maxwell's equations		
22	27/3	Time- varying field and Maxwell's equations		
23	3/4	forces Between differential current elements		

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24	**10/4**	**forces and torque on aclosed Circuit .**		
25	**17/4**	**inductance and mutual Inductance .**		
26	**24/4**	**inductance and mutual Inductance .**		
27	**8/5**			
28	**15/4**	**Magnetization and permeability , magnetic boundary condition**		
29	**22/5**	**the magnetic circuit**		
30	**29/5**	**potential Energy and forces on magnetic materials**		

Instructor Signature: **Dean Signature:**