

Bhoj Reddy Engineering College for Women: Hyderabad
Department of Electrical and Electronics Engineering
Lesson plan of faculty member for the academic year 2020–21
 Class: II B Tech Branch-Section: EEE Semester: I
 Subject: Electromagnetic Fields (EMF) Lectures per week: 3

Lecture Number	Topics to be covered	Date (s)
UNIT – I: STATIC ELECTRIC FIELD		
1	Review of conversion of a vector form of one coordinate system to another coordinate system	2 September 2020
2	Coulombs law , Electric field intensity	4 September 2020
3	Electrical field intensity due to point charge	7 September 2020
4	Electrical field intensity due to line, surface and volume charge distribution	9 September 2020
5	Numericals	11 September 2020
6	Gauss law and its applications	14 September 2020
7	Absolute Electrical potential , potential difference	16 September 2020
8	Calculation of potential difference for different configurations	18 September 2020
9	Electric dipole	21 September 2020
10	Numericals	23 September 2020
11	Electrostatic energy and Energy density	25 September 2020
12	Numericals	28 September 2020
UNIT – II: CONDUCTORS,DIELECTRICS & CAPACITANCE		
13	Current and current density	30 September 2020
14	Ohm's law in point form	5 October 2020
15	Continuity equation	7 October 2020
16	Boundary conditions of conductors and dielectric materials	9 October 2020
17	Capacitance of two-wire line	12 October 2020
18	Poisson's equation and Laplace's equation	14 October 2020
19	Solution of Laplace's equation and Poisson's equation	16 October 2020
UNIT – III: STATIC MAGNETIC FIELDS AND MAGNETIC FORCES		
20	Biot-Savart law ,Ampere's law	26 October 2020
21	Magnetic flux and magnetic flux density	28 October 2020
22	Scalar and vector magnetic potentials	9 November 2020
23	Steady magnetic field produced by current carrying conductors	11 November 2020
24	Force on moving charge	13 November 2020
25	Parent –Teacher Meeting	16 November 2020
26	Force on differential current element	18 November 2020
27	Force between differential current elements	20 November 2020
28	Magnetic boundary conditions	23 November 2020
29	Magnetic circuits , self and mutual inductance	25 November 2020

UNIT-IV: TIME VARYING FIELDS AND MAXWELL'S EQUATION		
30	Faraday's law of electromagnetic induction	27 November 2020
31	Displacement current, point form of Maxwell's equation	2 December 2020
32	Integral form of Maxwell equation	4 December 2020
33	Motional electromotive force	7 December 2020
34	Numericals	9 December 2020
UNIT-V: ELECTROMAGNETIC WAVES		
35	Derivation of wave equation, uniform plane waves	11 December 2020
36	Maxwell's equations in phasor form, wave equation in phasor form	14 December 2020
37	Plane wave in free space and in a homogenous material	16 December 2020
38	Wave equation for a conducting medium, plane wave in lossy dielectrics	18 December 2020
39	Wave propagation in good conductors	21 December 2020
40	Poynting theorem	23 December 2020
41	Revision and previous question papers discussion	28 December 2020
42	Revision and previous question papers discussion	30 December 2020

TEXTBOOKS:

1. "William .Hayt" Engineering Electromagnetics", Mc-Graw Hill Education 2012.
2. " M.N.O Sadiku", "Elements of Electromagnetic Fields", Oxford Publications ,2014

REFERENCE BOOKS:

1. "W.J Duffin", "Electricity and Magnetism " Mc-Graw Hill publication 1980.
2. A.Pramanik ,"Electromagnetism –problems with solution", Prentice Hall India 2012

Name and signature of the faculty: Ravi Kumar K ----

Name and signature of Head of the Department: Manju Bhargavi R ----