

GOPAL KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY JEYPORE

GOURAHARI VIHAR, PO: RANIPUT, JEYPORE – 764005

LESSON PLAN

Discipline: ELECTRICAL ENGINEERING

Semester: 5TH

Name of the Teaching Faculty: JYOTIRANI CHOUDHARY

Subject: ELECTROMAGNETIC THEORY (EOPC2005)

No. of days/per week class allotted: 04

Semester From: Feb To: April

No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
1ST	1ST	Introduction to Electromagnetic Theory and Coordinate Systems
	2ND	Cartesian Coordinate System
	3RD	Cylindrical Coordinate System
	4TH	Spherical Coordinate System and Coordinate Transformations
2ND	1ST	Differential Length, Area and Volume
	2ND	Line, Surface and Volume Integrals
	3RD	Del Operator and Gradient of a Scalar
	4TH	Divergence of a Vector and Divergence Theorem
3RD	1ST	Curl of a Vector and Stoke's Theorem
	2ND	Laplacian of a Scalar
	3RD	Introduction to Maxwell's Equations
	4TH	Numerical Problems on Vector Calculus
4TH	1ST	Coulomb's Law and Electric Field Intensity
	2ND	Electric Fields due to Point and Line Charges
	3RD	Electric Fields due to Surface and Volume Charges
	4TH	Electric Flux Density and Gauss's Law
5TH	1ST	Applications of Gauss's Law
	2ND	Electric Potential and Potential Difference
	3RD	Relationship between Electric Field and Potential
	4TH	Electric Dipole and Flux Lines
6TH	1ST	Energy Density in Electrostatic Fields
	2ND	Poisson's and Laplace's Equations

	3RD	Uniqueness Theorem
	4TH	Procedures for Solving Poisson's and Laplace's Equations
7TH	1ST	Green's Functions
	2ND	Introduction to Magnetostatic Fields
	3RD	Magnetic Field Intensity
	4TH	Biot-Savart's Law
8TH	1ST	Ampere's Circuital Law
	2ND	Applications of Ampere's Law
	3RD	Magnetic Flux Density
	4TH	Maxwell's Equations for Static Fields
9TH	1ST	Magnetic Scalar and Vector Potentials
	2ND	Polarization of Waves
	3RD	Numerical Problems on Magnetostatics
	4TH	Revision of Electrostatic and Magnetostatic Fields
10TH	1ST	Faraday's Law of Electromagnetic Induction
	2ND	Transformer and Motional EMF
	3RD	Displacement Current
	4TH	Maxwell's Equations in Final Form
11TH	1ST	Time Varying Potentials
	2ND	Time Harmonic Fields
	3RD	Electromagnetic Wave Propagation
	4TH	Wave Propagation in Lossy Dielectrics
12TH	1ST	Plane Waves in Lossless Dielectrics
	2ND	Power Flow and Poynting Vector
	3RD	Numerical Problems on Electromagnetic Waves
	4TH	Tutorial and Problem Solving Session
13TH	1ST	Types of Two Conductor Transmission Lines
	2ND	Circuit Model of Uniform Transmission Line
	3RD	Uniform Ideal Transmission Line
	4TH	Wave Reflection at Discontinuity
14TH	1ST	Matching of Transmission Lines with Load

	2ND	Tutorial on Transmission Line Problems
	3RD	Previous Year Question Discussion
	4TH	Mock Test and Assignment Discussion
15TH	1ST	Revision of Important Concepts
	2ND	Viva and Doubt Clearing Session
	3RD	Final Class Test
	4TH	Course Closure and Feedback