13EE2101-ELECTROMAGNETIC FIELDS
(EEE)

Lectures/Week:4Hrs.   Max. Sessional marks: 40
End Exam. Duration:3Hrs   End Exam.Marks:60

UNIT – I

Electro static fields: Coulomb's law, Electric field Intensity, Electric flux density and Gauss's law, Gauss's law in point form, Electrostatic potential ,Potential gradient, Energy stored in Electric field

UNIT – II

Conductors and dielectrics: Current and current density, Continuity equation, Conductors – Ohm's Law, Resistance Power dissipation and Joule's Law, Dielectrics, Dipole Moment, Polarization, Bound change densities, Boundary conditions, Capacitance

UNIT – III

Magnetostatic fields: Lorentz force law, Ampere's circuital law, Ampere's force Law, Biot Savart law, Ampere's circuital law in point form, Magnetic vector potential

UNIT – IV

Magnetic field in materials: Dipole moment, Magnetization, Bound current densities, Boundary conditions, Magnetic circuits, Inductance, Energy stored in Magnetic field

UNIT –V

Maxwell's equations: Faraday's law-Motional and transformer induced E.M.F., Maxwell's equations, Faraday's law, Faraday's law in point form, Displacement current, Wave equation and its general solution for free space conditions

TEXT BOOKS:
1. "Engineering Electromagnetics" by William H. Hayt & John. A. Buck Mc. Graw-Hill Companies, 7th Editon.2006
2. "Electromagnetic Fields" by Sadiku, Oxford Publications

REFERENCES :

1. "Electromagnetics" by Joseph A.Edminister, McGraw-Hill 2nd Edition
2. " Electromagnetic waves and radiating system" byEdward C.Jordan and keith G.Balmain, prentics-hall of inndia pvt.Ltd
3. "Electromagnetics" by J P Tewari.Khanna Publishers

4. "Field Theory" by K.A.Gangadhar & PM Ramanathan Khanna Publishers New Delhi, 2005, 5th Edition