

Faculty of Engineering & Technology

Electromagnetic Fields

Information :

Course Code : EED331

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Biomedical Engineering

Description :

Different coordinate systems. It is divided in two parts:

Stationary electric field: force between electric charges. Coulomb's law. The electric field arising from different charge distribution- definition of electric flux and electric flux density- Gauss' law, and divergence theorem- electrostatic potential - gradient of potential electric dipole- Laplace's and Poisson's equations- stored energy and capacitors- material electrical properties.

Stationary magnetic fields: magnetic flux and flux density- Ampere' law- magnetic field intensity- field of wire carrying current- magnetic flux of solenoid- inductance- magnetic circuit- curl of a vector $\vec{r}$ curl of magnetic field- divergence of magnetic flux density- Stoke' theorem- magnetic field energy- magnetic materials.