Electromagnetism (I)

- Review of vector analysis, Coulomb's law, Electric field, Electric potential
- Solving Laplace's equation in spherical coordinates with azimuthal symmetry as well as in cylindrical coordinates with axial symmetry, Solving electrostatic problems
- Image method in electrostatic problems
- Electrostatic fields in dielectric media, Boundary conditions in electrostatics
- Electrostatic energy, Forces and torques, Electric capacitance
- Coefficients of potential, Electric current, Continuity equation
- Ohm's law, Microscopic theory of conductivity, Boundary conditions for conductivity
- Laplace's equation in steady current problems, Calculation of electric resistance
- Solving selected problems in electrostatics and steady current
- Magnetostatic fields, Biot-Savart law
- Ampere's circuital law, Magnetic vector potential, Coulomb's guage
- Magnetic dipole moment, Magnetic scalar potential
- Magnetic properties of matter, Magnetic fields produced by magnetized media
- Maxwell's equations for stationary fields, Boundary conditions in magnetostatics
- Laplace's equation in magnetostatics, Solving problems in magnetostatics
- Solving selected problems in electromagnetism