



University of Asia Pacific

Department of Basic Sciences & Humanities

Courses Title: Physics II (EEE)

Course Code: Phy 103

Credit: 02 (Two)

Course Outline:

Electrostatics: Electric charge Coulomb's law Electric Forces Electric field intensity Electric potential and potential difference Electric flux and electrostatic induction Equipotential and equipotential surfaces Gauss's theorem and its applications; calculation of electric field and flux densities Dielectric dielectric constant permittivity Capacitors: parallel plate cylindrical and spherical Capacitors in series and in parallel ceramic mica and electrolytic capacitors.

Electromagnetics: Magnetic field field strength magnetic induction and permeability magnetic effect of electric current Force and torque Ampere's law and its application magnetizing field of a long straight conductor a long solenoid Law of electromagnetic induction and Lenz's law with applications inductance and coefficient of coupling inductance in series and in parallel and their combination energy stored in inducts lifting power of magnets Magnetic circuits: composite magnetic circuits linkage leakage and fringing flux Hysteresis and eddy current loss.

Modern Physics: Theory of Relativity Mass-Energy Relation Photo Electric Effect Quantum Theory X-rays and X-ray Diffraction Compton Effect Dual Nature of Matter Statistical Physics Fundamentals of Solid State Physics



University of Asia Pacific

Department of Basic Sciences & Humanities

Courses Title: Physics II (CSE)

Course Code: Phy 103

Credit: 03 (Three)

Course Outline:

Electrostatics Electric Charge Coulomb's Law Electric field & Electric Potential Electric Flux Density Gauss's Law Capacitors and Dielectrics Steady Current Ohm's Law Magnetostatics Magnetic field Biot - savart Law Ampere's Law Electromagnetic Induction Faraday's Law Lenz's Law Self Inductance and Mutual Inductance.

Magnetic Properties of Matter Permeability Susceptibility Diamagnetism Paramagnetism & Ferromagnetism.

Maxwell's equations of Electromagnetic Waves Waves in Conduction & Non-Conduction Media Total Internal Reflection Transmission along wave Guides.

Special Theory of Relativity Length Contraction & Time Dilation Mass-Energy Relation.

Photo Electric Effect Quantum Theory X-rays and X-ray Diffraction Compton Effect Dual Nature of Matter & Radiation Atomic Structure Nuclear Dimensions Electron Orbits Atomic Spectra Bohr Atom Radioactive Decay half-life (and Rays Isotopes Nuclear Binding Energy).

Fundamentals of Solid State Physics Lasers Holography.