

ACADEMIC PLANNER & UNITIZATION OF SYLLABUS

Department of PHYSICS

Bankura Christian College

ACADEMIC YEAR 2022-23 (Semester -VI)

6th Semester (January to June)

Core T13 – Electromagnetic Theory (Unit 1 Unit 2)

DSE T5- Physics Earth (Unit of 1 & Unit 2)

Teacher Name : Debendranath Das

MONTH/YEAR	WEEK	PORTIONS (EM Theory)
Mar 2023	2	Maxwell's equations. Displacement current
	3	Vector and Scalar potentials. Gauge transformations: Lorentz and Coulomb gauge
	4	Boundary conditions at Interface between different media. Wave equations
MONTH/YEAR	WEEK	PORTIONS(EM Theory)
April 2023	1	Plane waves in dielectric media
	2	Poynting theorem and Poynting vector
	3	Electro magnetic energy density. Physical concept of Electromagnetic energy density, momentum density and angular momentum density
	4	Plane EM waves through vacuum and isotropic dielectric medium
	5	Transverse nature of plane EM waves , refractive index and dielectric constant, wave impedance
MONTH/YEAR	WEEK	PORTIONS (EM Theory)
May 2023	1	Propagation through conducting media, relaxation time, skin depth
	2	Wave propagation through dilute plasma, electrical conductivity of ionized gases
	3	Plasma frequency, refractive index, skin depth, application to propagation through ionosphere
	4	Physics of earth:- Origin of universe, creation of elements and earth. A Holistic understanding of our dynamic planet through Astronomy, Geology, Meteorology and Oceanography.
MONTH/YEAR	WEEK	PORTIONS(Physics of Earth)
June 2023	1	General characteristic and origin of the Universe. The Milky way of Galaxy, solar system, Earth's orbit and spin, the Moon's orbit and spin.
	2	The Terrestrial and Jovian planets, Meteorites, Asteroids. Earth in the solar system, origin, size, shape, mass, density, rotational and revolution parameters and its age. The Cosmic microwave background.
	3	The solid earth, : Mass, Dimensions, shape, and topography, internal structure, magnetic field, Geothermal energy. How do we learn about Earth's interior. The Hydrosphere, The atmosphere, The Cryosphere and The Biosphere