

SPECIMEN OF ACADEMIC PLANNER & UNITIZATION OF SYLLABUS

Department of PHYSICS

Bankura Christian College

ACADEMIC YEAR 2023 (Semester: 2nd SEM (H))

2nd Semester (H) (March 2023 to June 2023) [C4/T4]

Submitted by: Dr. Chinmoy Taraphdar

7. Interferometer:

Michelson Interferometer-(1) Idea of form of fringes (No theory required), (2) Determination of Wavelength, (3) Wavelength Difference, (4) Refractive Index, and (5) Visibility of Fringes. Fabry-Perot interferometer.

8. Diffraction and Holography:

Fraunhofer diffraction: Single slit. Circular aperture, Resolving Power of a telescope. Double slit. Multiple slits. Diffraction grating. Resolving power of grating. Fresnel Diffraction: Fresnel's Assumptions. Fresnel's Half-Period Zones for Plane Wave. Explanation of Rectilinear Propagation of Light. Theory of a Zone Plate: Multiple Foci of a Zone Plate. Fresnel's Integral, Fresnel diffraction pattern of a straight edge, a slit and a wire. Holography: Principle of Holography. Recording and Reconstruction Method. Theory of Holography as Interference between two Plane Waves. Point source holograms.

MONTH/YEAR	WEEK	PORTIONS
March 2023	3	Michelson Interferometer-(1) Idea of form of fringes (No theory required),
	4	Michelson Interferometer - (2) Determination of Wavelength, (3) Wavelength Difference, (4) Refractive Index, and (5) Visibility of Fringes.
MONTH/YEAR	WEEK	PORTIONS
April 2023	1	Fraunhofer diffraction: Single slit. Circular aperture, Resolving Power of a telescope.
	2	Double slit. Multiple slits.
	3	Diffraction grating. Resolving power of grating.

	4	Fresnel Diffraction: Fresnel's Assumptions. Fresnel's Half-Period Zones for Plane Wave.
MONTH/YEAR	WEEK	PORTIONS
May 2023	1	Explanation of Rectilinear Propagation of Light. Theory of a Zone Plate: Multiple Foci of a Zone Plate.
	2	Fresnel's Integral, Fresnel diffraction pattern of a straight edge,
	3	Fresnel diffraction pattern of a slit
	4	Fresnel diffraction pattern of a wire.
MONTH/YEAR	WEEK	PORTIONS
June 2023	1	Holography: Principle of Holography. Recording and Reconstruction Method.
	2	Theory of Holography as Interference between two Plane Waves. Point source holograms.
	3	Practice Class Test – 1
	4	Practice Class Test – 2