Lesson Plan

Name of Institute : Ambala College of Engineering and Applied Research, Devsthali.

Name of the Faculty member: Mr. Ajay Singh

Discipline : Applied Sciences and Humanities

Semester : 2nd

Subject : Applied Physics B24-BSC-103, Applied Physics Lab B24-BSC-113

Lesson Plan Duration : 15 weeks (from Jan 2026- May 2026)

Work Load : L-3, T-1, P-3

Week	Theory		Practical	
	Lecture day	Topic (including assignment/ test)	Practical day	Topic
1st	1st	**Interference:** Principle of Superposition, Conditions for interference	1st	1)To verify Newton's formula and hence to find the focal length of the given convex lens.
	2nd	Division of wave-front: Fresnel's Biprism and Applications,		
	3rd	Division of amplitude: Wedge-shaped film,		
2nd	4th	Newton's rings	2nd	2)To find the frequency of A.C. mains by using Sonometer and horse shoe magnet
	5th	Michelson Interferometer and Applications		
	6th	**Diffraction:** Types of diffraction, Fraunhofer diffraction at a single slit		
3rd	7th	, Intensity distribution due diffraction grating,	3rd	3)To find the resistance of a galvanometer by post office box
	8th	determination of wavelength		
	9th	Dispersive power of diffraction grating		
4th	10th	Resolving power of diffraction grating.	4th	4)To convert a galvanometer into an ammeter of desired range and verify the same
	11th	**Revision of 1st unit**		
	12th	**Polarization:** Polarization of transverse waves, Plane of polarization, Polarization by reflection		
5th	13th	Double refraction, Nicol Prism,	5th	**Viva Voce**
	14th	Quarter and half wave plate		

	15th	Specific Rotation, Laurent 's half shade polarimeter		
6th	**16th**	Biquartz polarimeter.	**6th**	**5)** To find the wavelength of monochromatic light by Newton's ring experiment
	17th	Ultrasonics: Ultrasonic waves, Properties of ultrasonic waves.		
	18th	Production of ultrasonic waves: Magnetostriction.		
7th	**19th**	Production of ultrasonic waves: Piezoelectric methods	**7th**	**6**)To find the wavelength of sodium light by Michelson's interferometer
	20th	Detection of ultrasonic waves, Measurement of velocity of ultrasonic waves,		
	21st	Applications of ultrasonic waves.		
8th	**22nd**	**Revision of 2nd unit**	**8th**	7)To find the resolving power of telescope.
	23rd	Laser: Einstein's theory of matter radiation interaction and A and B coefficients		
	24th	Amplification of light by population inversion		
9th	**25th**	Different types of lasers: gas lasers (He-Ne)	**9th**	**8)** To find the wavelength of sodium light using Fresnel bi-prism
	26th	CO2 Laser		
	27th	Solid-State Lasers (Ruby)		
10th	**28th**	Solid-State Lasers (Neodymium)	**10th**	**Viva Voce**
	29th	Dye lasers		
	30th	Properties of laser beams: mono-chromaticity, coherence, directionality, and brightness.		
11th	**31st**	Laser speckles	**11th**	9)To find the wavelength of various colours of white light with the help of plane transmission diffraction grating
	32nd	Applications of lasers in Science, Engineering and Medicine.		
	33rd	**Revision of 3rd unit**		
12th	**34th**	**Nuclear radiations and its Biological Effects:** Classification of nuclear radiations	**12th**	**10)** To find the specific rotation of sugar solution by using a Polarimeter.
	35th	Interaction of charged particle (light and heavy)		
	36th	gamma radiations with matter (basic concepts),		
13th	**37th**	Dosimetric units, Relative Biological Effectiveness (RBE)	**13th**	**Viva Voce**

	38th	Typical doses from commons sources in the environment		
	39th	Biological Effects		
14th	**40th**	Maximum Permissible Dose (MPD)	**14th**	**Internal Viva**
	41st	Shielding, Radiation safety in the nuclear radiation laboratory		
	42nd	**Biomaterials:** Introduction Classification of biomaterials		
15th	**43rd**	Applications.	**15th**	**Doubts/Revision**
	44th	Revision of 4th unit		
	45th	Revision/ Doubts		

Mr Ajay Singh

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