	National Institute of Technology Meghalaya An Institute of National Importance	CURRICULUM

Programme	**Bachelor of Technology**	Year of Regulation	**2018**
Department	**Physics**	Semester	**I/II**

Course Code	Course Name	Pre-Requisite	Credit Structure				Marks Distribution		
			L	T	P	C	Continuous Evaluation		Total
PH 151	**Engineering Physics Laboratory**	**NIL**	**0**	**0**	**2**	**1**	**01 Experiment**	**10**	**100**

Course Objectives		Course Outcomes		
	To understand the fundamentals of electromagnetism		CO1	Able to gain the concept of electromagnetism applied to Engineering
	To understand various concepts of optical phenomena in Physics and Engineering		CO2	Able to gain information about Geometrical and Physical Optics
	To understand the transition from classical to quantum mechanics		CO3	Able to understand the concepts of general Physics and its applications.
	To understand the fundamentals of general physics		CO4	Able to apply lasers in engineering

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2	CO2	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
3	CO3	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
4	CO4	**3**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

SYLLABUS

No.	Content	Hours	COs
I	To determine the wavelength of sodium light by measuring the diameters of Newton's rings.	**02**	**CO1** **CO2** **CO3** **CO4**
II	To find the refractive index of prism by measuring angle of prism and angle of minimum deviation.	**02**	
III	To verify inverse square law (using a point source of light).	**02**	
IV	Determination of wavelength of monochromatic light (LASER) using Fresnel Biprism.	**02**	
V	To determine the wavelength of LASER using Diffraction grating.	**02**	
VI	To verify Coulomb's Law of force between two magnetic poles.	**02**	
VII	To find resonance frequency in series RLC circuit.	**02**	
VIII	To determine frequency of A.C. Mains using sonometer.	**02**	
IX	To determine the Young's modulus of elasticity of the material of a sample beam by bending.	**02**	
X	To draw the V-1/λ characteristic for Light Emitting Diode (LED) and determine the value of Planck's constant.	**02**	
	Total Hours	**20**	

Essential Readings

1. R. A. Serway and J. W. Jewett, "Physics for Scientists and Engineers with Modern Physics", CENGAGE Learning Custom Publishing.
2. D. J. Griffiths, "Introduction to Electrodynamics", Prentice-Hall of India.
3. A. Ghatak, "Optics", Tata McGraw-Hill.

Supplementary Readings

1. D. Kleppner, and R. J. Kolenkow, "An Introduction to Mechanics", Tata McGraw
2. R. Eisberg, and R. Resnick, "Quantum Physics of Atoms, Molecules, Solids, Nuclei and Particles", John

Essential Readings