Physics-II
(Common to all branches, June 2019 onwards)

Course Type ***:*** *General Institute Requirement (GIR)*	***Pre-requisites:*** *Nil*
Course Code: *PHIR12*	***No. of Credits:*** *02*

Course Objectives

1. *To introduce the spirit of experiments to verify physics concepts such as reflection, refraction, diffraction and interference on light matter interaction.*

2. *To perform experiments to estimate the materials properties and to check their suitability in science and engineering.*

3. *To familiarize physics concepts and to design instruments and experimental set up for better and accurate measurements.*

4. *To teach and apply knowledge to measure and verify the values of certain constants in physics.*

LABORATORY

1. Determination of rigidity modulus of a metallic wire
2. Conversion of galvanometer into ammeter and voltmeter
3. Wavelength of laser using diffraction grating
4. Dispersive power of a prism – Spectrometer
5. Radius of curvature of lens-Newton's Rings
6. Numerical aperture of an optical fiber
7. Field along the axis of a Circular coil
8. Wavelengths of white light – Spectrometer
9. Calibration of Voltmeter – Potentiometer
10. Thickness of a thin wire – Air Wedge
11. Specific rotation of a liquid – Half Shade Polarimeter
12. Photoelectric effect – Planck's constant

References

1. Physics Laboratory Manual, Department of Physics, National Institute of Technology Tiruchirappalli (2018).
2. Practical Physics, R.K. Shukla, Anchal Srivastava, New age international (2011).
3. B.Sc. Practical Physics, C.L Arora, S. Chand & Co. (2012).

Course Outcomes

On completion of this course, the students will be able to

1. *calibrate and operate voltmeter, ammeter, potentiometer and galvanometer.*
2. *demonstrate the principle of dispersion, diffraction, interference and polarization using optical instruments like spectrometer, travelling microscope and polarimeter.*
3. *design experimental setup in order to verify concepts of wave and particle nature of light.*
4. *explain the principle of light propagation in fibers and light matter interaction using lasers and conventional light sources.*
5. *acquire knowledge of electricity, magnetism and mechanics to estimate the fundamental constants in Physics*

Laboratory *PHIR12*		**Aligned Programme Outcomes (PO) with level of correlation** **Programme Outcomes (COs)**											
Course Outcomes(Cos)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12
	CO1	H	-	-	H	M	-	-	-	-	M	-	M
	CO2	H	-	-	H	M	-	-	-	-	M	-	M
	CO3	M	H	H	H	-	-	-	-	-	M	-	M
	CO4	H	-	M	H	H	-	H	-	-	M	-	M
	CO5	H	M	-	H	-	-	H	-	-	M	-	M