

PHYSICS LABORATORY

I Semester: AE / ME / CE / ECE / EEE								
II Semester: CSE / CSE (AI & ML) / CSE (DS) / CSE (CS) / CSIT / IT								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
AHSC05	Foundation	L	T	P	C	CIA	SEE	Total
		-	-	3	1.5	30	70	100
Contact Classes: Nil		Tutorial Classes: Nil		Practical Classes: 36		Total Classes: 36		
Pre-Requisites: Basic principles of Physics								
I. COURSE OVERVIEW:								
<p>This course is designed to lay a strong foundation in Engineering Physics that forms a basis to various branches of Engineering. It helps the students to perform experiments, to correlate theory with experimental data, analyse using graphical representations and present them as part of a clear, well-organized lab report. At the end of the course, students will be able to demonstrate a working knowledge of fundamentals of Physics and communicate their ideas effectively, both orally and in writing.</p>								
II. COURSE OBJECTIVES:								
The students will try to learn:								
<ol style="list-style-type: none"> 1. Experimental skills in using optical instruments to determine physical constants. 2. The real time applications of electromagnetic theory. 3. The working principles of various electronic devices. 								
III. COURSE SYLLABUS:								
Week-1: HALL EFFECT (LORENTZ FORCE)								
Determination of charge carrier density.								
Week-2: MELDE'E EXPERIMENT								
Determination of frequency of a given tuning fork.								
Week-3: STEWART GEE'S APPARATUS								
Magnetic field along the axis of current carrying coil-Stewart and Gee's method.								
Week-4: B-H CURVE WITH CRO								
To determine the energy loss per unit volume of a given magnetic material per cycle by tracing the Hysteresis loop (B-H curve).								
Week-5: ENERGY GAP OF A SEMICONDUCTOR DIODE								
Determination of energy gap of a semiconductor diode.								
Week-6: PHOTO DIODE								
Studying V-I characteristics of photo diode.								
Week-7: OPTICAL FIBER								
Evaluation of numerical aperture of a given optical fiber.								
Week-8: WAVE LENGTH OF LASER LIGHT								
Determination of wavelength of a given laser light using diffraction grating.								
Week-9: PLANCK'S CONSTANT								
Determination of Planck's constant using LED.								
Week-10: LIGHT EMITTING DIODE								
Studying V-I characteristics of LED								
Week-11: NEWTONS RINGS								
Determination of radius of curvature of a given plano-convex lens.								

Week-12: SINGLE SLIT DIFFRACTION

Determination of width of a given single slit.

IV. MANUALS:

1. C. L. Arora, "Practical Physics", S. Chand & Co., New Delhi, 3rd Edition, 2012.
2. VijayKumar, Dr.T.Radhakrishna, "Practical Physics for Engineering Students", SM Enterprises, 2nd Edition, 2014.

V. WEB REFERENCE:

<http://www.iare.ac.in>