

Branch Name:	Mechanical Engineering / Civil Engineering / Electrical Engineering / Robotics & Automation
Program Code:	ET101 / ET106 / ET109 / ET113
Course Title:	Engineering Physics Practical
Course Code:	2ET1000104P
Pre-requisite Course:	Physics majors are expected to have a basic understanding of calculus, Physics and chemistry.

Course Objectives:

- CO1. To understand the semiconducting property and its application in engineering
 CO2. To understand the ultrasonic waves and its crucial application in various field
 CO3. To know Condensed matter physics and an ability to understand a Laser system and photonics.
 CO4. To comprehend the use of magnetic materials.

Teaching and Examination Scheme:

Teaching and Examination Scheme:														
Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)									
					Theory (Marks)				Practical (Marks)				Total (Marks)	
	L	T	P	Total	SEE		CCA		SEE		CCA			
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
01	-	-	02	02	-	-	-	-	10	25	10	25	50	

Course Contents:

Sr. No	Detail of Practical's	Contact Hours
1.	Characteristics of P-N Junction Diode	02
2.	Characteristics of Zener Diode	02
3.	Characteristics of Light Emitting Diode	02
4.	Optical Fiber Communication using analog link	02
5.	Numerical Aperture of Various Optical Fiber Cable	02
6.	Study the temperature dependence of resistance of a semiconductor by four probe method	02
7.	To find Ultrasonic velocity in given liquid medium by ultrasonic interferometer	02
8.	To Determine Hall Co-efficient & Mobility of Semiconductor by Hall Effect.	02
9.	Characteristics of a solar cell.	02
10.	To determine the young's modulus of elasticity of the material of a sample beam by bending.	02
11.	Hysteresis Loop of a Magnetic Material	02
12.	Determine dielectric constant of Solid Materials.	02
13.	Determine the wavelength of the laser light by diffraction grating method	02

Reference Books:

1. Sears and Zemansky University Physics Pearson Publication
2. Fundamental of Physics – Halliday, Resnick & Walker; John Wiley & Sons, Inc.

3. Concepts of modern physics by Arthur Beiser
4. University Physics with Modern Physics by Young, Freedman & Lewis Ford

List of Open-Source Software/learning website:

1. <https://vlab.amrita.edu/>
2. <http://vlabs.iitb.ac.in/vlab/labsps.html>
3. <https://www.vlab.co.in/broad-area-physical-sciences>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to

Course Outcomes	Description	Bloom's Taxonomy Level
CLO1	To understand the semiconducting property and its application in engineering	Understanding (2)
CLO2	To understand the ultrasonic waves and its crucial application in various field	Applying (3)
CLO3	To know Condensed matter physics and an ability to understand a Laser system and photonics.	Understanding (2)
CLO4	To comprehend the use of magnetic materials.	Understanding (2)

Mapping of CLO with PO and PSO:

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	H	L	H	H	L			M		M					
CLO2	H	M		H	L		M		M		L					
CLO3	M	H	L	H	M	M	L		M		L					
CLO4	H	H		H	M				M		H					
CLO5																

H: High, M: Medium, L: Low