Faculty of Engineering and Technology
Bachelor of Technology (Semester I/ First year)
In Effect from Academic Year 2026-27

Branch Name:	Computer Engineering / Information Technology / Artificial Intelligence and Data Science / Information and Communication Technology / Artificial Intelligence and Machine Learning / Electronics and Communication Engineering
Program Code:	ET103 / ET105 / ET108 / ET107 / ET114 / ET116
Course Title:	Applied Physics Practical
Course Code:	2ET1000103P
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:

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.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Course Contents:

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

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):

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

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					

H: High, M: Medium, L: Low