

Module Name (General)	Total Hours
Engineering Physics	44

Sr	Topics	Suggested Activities	Hrs
1	Measurement		
	(1) Identifying suitable instruments for measurement of different physical quantities	(1) Linear Measurement of distance from micro to macro (starting from minute objects i.e. diameter of pin, nail, wire, thickness of metallic sheets to big objects like length of hall)	2
		(2) Measurement of temperatures (Atmospheric temperature, body temperature, temperature of different of liquids)	2
		(3) Measurement of Mass ranging from milligram to kilograms	
(2) Measurement of Errors	(1) Errors in linear Measurement of instruments i.e. scales, vernier calipers, micrometer screw guage	2	
	(2) Errors in temperature measurement		
2	Force and Motion	(1) Measurement of speed (with the help of simple toy car)	2
		(2) Measurement of gravitational constant (using different objects and different lengths or diameter of string)	2
3	General Properties of Materials		
	(1) Elasticity	(1) With the help of Young's Modulus for different flexible to stiff materials and identify the most flexible and stiffest object. (Graph should be provided.)	2
	(2) Surface tension	(2) Comparison of surface tension of different liquids i.e. kerosene, soap-water, salt-water	2
		(3) Real life examples of surface tension	2
(3) Viscosity	Comparison of viscosity of different liquids i.e. water, honey, oil, shampoo	2	
4	Heat Transfer	(1) Thermal conductivity through simulation	2
		(2) Practical examples of heat conduction, convection, and radiation through real life experiences and simulations	
5	Waves and Sound	Demonstration of waves through real life examples / experiences (like ripple tank, water waves, speaker waves, waves from strings of musical instruments)	2
		Finding acoustics of classroom or hall or auditorium situated in institutes, Sound intensity	2
		Measuring distance with the help of ultrasonic waves	2
6	Light and Nanotechnology		
	Properties of light	Observing refraction through glass slab	2
		Demonstration of Total Internal Reflection (TIR) through laser light	2
		Demonstration of Dispersion of light through prism	2
		Demonstration of Interference and diffraction (using toy laser beam and narrow slit)	2
		Demonstration of polarization (using polaroid sheets, polaroid goggles)	
Nanotechnology	Ninithi Application to observe types of nanomaterials	2	
7	Radioactivity	Understanding radioactivity through simulation (using Gigaphysics Simulation tool)	2
8	Visit to Regional Science Centre, Lab, industries	Learning the concepts with models, simple scientific experiments	4
9	* Understanding Physics through open source simulation (website FOSSEE, PhET, OLABS, VLABS, Molecular Workbench, Orange)		4
Total Hours:			44