

Module Name (General)	Total Hours
Basic Physics	52

Sr No.	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 callipers, micrometer screw gauge	2
(2)Errors in temperature measurement			
2	Static and Current Electricity	Demonstration of real life examples, rubbing plastic scale, Plastic chair, comb, glass rod with paper and wool	2
		Use of multimeter to measure resistance, capacitance, voltage, current	2
		Identifying different electronic components like diode, transistor, capacitor, types of resistors, value of resistances through colour code	2
		Demonstration of electroplating	2
		Calculation of power consumption in a given hall, auditorium, classroom	2
3	Electromagnetism	Projects based on electromagnetic induction (e.g. dynamo, electric bell)	4
		Toys working on electromagnetic induction	2
		Simulation on Electromagnetism and AC currents	2
4	Semiconductor and nanotechnology	Project- Making of rectifier (half wave, full wave, bridge rectifier)	4
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		
	(1)Properties of light	Observing refraction through glass slab	2
		Demonstration of TIR through laser light	2
		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)			

Sr No.	Topics	Suggested Activities	hrs
	(2)Nanotechnology	Ninithi Application to observe types of nanomaterials	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	52	