



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Generic Elective (GE) From Physics for First Sem

(2022-2023)

Subject Code	Category	Subject Name	Teaching and Evaluation Scheme								
			Theory			Practical		Th	T	P	CREDITS
			End Sem University Exam	Two Term Exam	Teachers Assessment	End Sem University Exam	Teachers Assessment				
GUPH102	GE	Fundamentals of Physics	60	20	20	0	0	4	0	0	4

Abbreviation		Teacher Assessment (Theory) based on following components: Quiz / Assignment / Project / Participation in class (Given that no component shall exceed 10 Marks).
Th	Theory	
T	Tutorial	Teacher Assessment (Practical) based on following components: Viva/ File/ Participation in Lab work (Given that no component shall exceed 50% of Marks).
P	Practical	

Course Objectives

- To understand basic principles of physics and its application.
- The students will learn basic concepts of Fuses and circuit breakers, Fire extinguishers, Electric iron, toaster, geyser, Microwave Oven, Solar cookers, solar cells, Refrigerator.

GUPH102: FUNDAMENTALS OF PHYSICS

UNIT I: General Properties of Matter and Mechanics -Matter and energy, Different types of energy, Systems of unit, Fundamental and derived units – Length, Mass, time, area, volume, density, velocity etc. Mass and weight, Density and specific gravity.

UNIT II: Force & Pressure -Liquid pressure, Atmospheric pressure, Friction, its causes, advantages and disadvantages, Electromagnetic radiation and its properties, Elasticity, Viscosity, Surface tension.

UNIT III: Heat- Heat and temperatures, Expansion, Different scales of temperature, Different types of thermometers, conversions from one scale to another, Specific heat, Latent heat.



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UNIT IV: Heat contd- Solid, liquid, gas – inter conversions, Melting, Boiling and evaporation, Effect of pressure and impurity on boiling point and melting point, Freezing mixtures, Vacuum pans, Pressure cookers, Modes of transfer of heat, Household applications of the knowledge.

UNIT V: Principles of electricity and working of appliances-Sources of electricity, Alternate and direct current, Ohm's law, Calculation of cost of using electrical energy, Fuses and circuit breakers, Fire hazards, Fire extinguishers, Electric iron, toaster, geyser, cooking range, Microwave Oven, Solar cookers, solar cells, Refrigerator.

Reference Books:

- Mathur, D.S. : Mechanics (S. Chand)
- Mechanics, Berkeley Physics, vol.1, C.Kittel, W.Knight, et.al. 2007, Tata McGraw-Hill.
- Berkley Physics Course vol. I (Mechanics)
- Madalyn Avery Digitized 2011 – Bound Volume 1955: Household Physics : A textbook for college students of Home Economics, Macmillan Publisher
- Peet LJ (1979) Household Equipment (6th ed.), New York: John Wiley & Sons
- Van Zante J (1970) Household Equipment Principles, New York; Prentice Hall