

**Course-2 Title: Physics 1 Sessional****Course Code: PHY 112****Credit: 0.75****Contact Hour: 1 per week****Total marks: 100****11.1 Rationale:**

Learning basic laws and principles of physics experimentally, develops practical basics of a student and prepares a student for his further practical works of engineering studies.

**11.2 Objectives:**

At the end of the course students should be able to:

1. Apply the concepts, ideas and methods of Physics required to solve problems in engineering studies.
2. Acquire knowledge experimentally about different laws and models of Physics, which will develop design skills among them.
3. Apply the laws and skills in higher studies or research areas.

<b>11.3 Learning Outcomes</b>	<b>11.4 Course Content</b>	<b>11.5 Teaching / Learning Strategy</b>	<b>11.6 Assessment Strategy</b>
<ol style="list-style-type: none"><li>1. Define specific heat, latent heat.</li><li>2. Differentiate between latent heat and specific heat.</li><li>3. Deduce Newton's method of cooling.</li></ol>	<b>Heat and Thermodynamics</b> <ol style="list-style-type: none"><li>1. To determine the specific heat of a liquid by the method of cooling.</li><li>2. To determine the latent heat of ice by the method of cooling.</li></ol>	<ol style="list-style-type: none"><li>1. Lecture</li><li>2. Exercise</li><li>3. Assignment</li><li>4. Group discussion</li></ol>	<ol style="list-style-type: none"><li>1. Short answer</li><li>2. Viva Voce</li><li>3. Practical exam</li><li>4. Reports</li></ol>
<ol style="list-style-type: none"><li>1. Define S.H.M., gravity, acceleration.</li><li>2. Explain why mass is constant but weight is variable on earth and in space.</li><li>3. Justify the value of "g".</li></ol>	<b>Simple Harmonic Motion</b> <ol style="list-style-type: none"><li>1. To determine the value of gravity of earth or gravitational acceleration constant "g" with simple harmonic pendulum.</li></ol>	<ol style="list-style-type: none"><li>1. Lecture</li><li>2. Exercise</li><li>3. Assignment</li><li>4. Group discussion</li></ol>	<ol style="list-style-type: none"><li>1. Short answer</li><li>2. Viva Voce</li><li>3. Practical exam</li><li>4. Reports</li></ol>
<ol style="list-style-type: none"><li>1. Interpret diffraction, interference of waves.</li><li>2. Describe Young's single slit experiment.</li></ol>	<b>Wave Motion</b> <ol style="list-style-type: none"><li>1. Diffraction from a single slit: Young's experiment</li></ol>	<ol style="list-style-type: none"><li>1. Lecture</li><li>2. Exercise</li><li>3. Assignment</li><li>4. Group discussion</li></ol>	<ol style="list-style-type: none"><li>1. Short answer</li><li>2. Viva Voce</li><li>3. Practical exam</li><li>4. Reports</li></ol>
<ol style="list-style-type: none"><li>1. Define resonance tube.</li><li>2. Calculate velocity of sound using resonance tube experiment.</li></ol>	<b>Sound Waves</b> <ol style="list-style-type: none"><li>1. Finding the velocity of sound with the help of a tuning fork and resonance tube.</li></ol>	<ol style="list-style-type: none"><li>1. Lecture</li><li>2. Exercise</li><li>3. Assignment</li><li>4. Group discussion</li></ol>	<ol style="list-style-type: none"><li>1. Short answer</li><li>2. Viva Voce</li><li>3. Practical exam</li><li>4. Reports</li></ol>

1. Explain Ohm's law. 2. Illustrate the variation of resistance with temperature. 3. Outline the laws of resistance.	<b>Electrostatics</b> <ol style="list-style-type: none"> <li>To determine the specific resistance of a wire using meter bridge.</li> <li>Evaluate Ohm's law.</li> </ol>	1. Lecture 2. Exercise 3. Assignment 4. Group discussion	1. Short answer 2. Viva Voce 3. Practical exam 4. Reports
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### RECOMMENDED BOOKS AND PERIODICALS

**Text Books:**