

**UNIVERSITY OF MADRAS**  
**B.Sc. DEGREE PROGRAMME IN PHYSICS**  
 SYLLABUS WITH EFFECT FROM 2023-2024

<b>COURSE</b>	<b>SECOND SEMESTER – CORE PRACTICAL 2</b>
<b>COURSE CODE</b>	<b>137C21</b>
<b>COURSE TITLE</b>	<b>PRACTICAL 2</b>
<b>CREDITS</b>	3
<b>COURSE OBJECTIVES</b>	Apply their knowledge gained about the concept of heat and sound waves, resonance, calculate frequency of ac mains set up experimentation to verify theories, quantify and analyse, able to do error analysis and correlate results
<b>HEAT, OSCILLATIONS, WAVES and SOUND</b>	
<b>Minimum of Eight Experiments from the list:</b>	
<ol style="list-style-type: none"> <li>1. Determination of specific heat by cooling – graphical method.</li> <li>2. Determination of thermal conductivity of good conductor by Searle’s method.</li> <li>3. Determination of thermal conductivity of bad conductor by Lee’s disc method.</li> <li>4. Determination of thermal conductivity of bad conductor by Charlton’s method.</li> <li>5. Determination of specific heat capacity of solid.</li> <li>6. Determination of specific heat of liquid by Joule’s electrical heating method (applying radiation correction by Barton’s correction/graphical method),</li> <li>7. Determination of Latent heat of a vaporization of a liquid.</li> <li>8. Determination of Stefan’s constant for Black body radiation.</li> <li>9. Verification of Stefan’s-Boltzmann’s law.</li> <li>10. Determination of thermal conductivity of rubber tube.</li> <li>11. Helmholtz resonator.</li> <li>12. Velocity of sound through a wire using Sonometer.</li> <li>13. Determination of velocity of sound using Kundt’s tube.</li> <li>14. Determination of frequency of an electrically maintained tuning fork</li> <li>15. To verify the laws of transverse vibration using sonometer.</li> <li>16. To verify the laws of transverse vibration using Melde’s apparatus.</li> <li>17. To compare the mass per unit length of two strings using Melde’s apparatus.</li> <li>18. Frequency of AC by using sonometer.</li> </ol>	

**METHOD OF EVALUATION:**

<b>Continuous Internal Assessment</b>	<b>End Semester Examination</b>	<b>Total</b>	<b>Grade</b>
25	75	100	