|  |  |  |  |
| --- | --- | --- | --- |
| **Course Code** | | **Course Name** | **L-T-P - Credits** |
| **CE251** | | **SOLID MECHANICS LAB** | **0-0-3 : 3** |
| Prerequisite: Corequisite: | | | |
| **Course Objective:**  To study the practical behaviour of different materials when subjected to Tension, torsion & hardness | | | |
| **Syllabus (List of Experiments)** | | | |
| 1. | Hardness test: To determine the hardness of a given set of specimens by   1. Brinell 2. (ii) Vickers and 3. (iii)Rockwell hardness testing machines | | |
| 2. | Uni-axial tension test:To obtain the stress-strain relation of mild steel using a circular cylindrical Specimen and determine   1. Young’s modulus (E), 2. proportional limit (p), 3. yield stress (y), 4. ultimate tensile stress (u) and 5. percentage elongation. | | |
| 3. | Torsion test: To obtain twisting moment- twist relationship of a mild steel specimen. To determine   1. shear modulus G, 2. yield stress y in pure shear, 3. theoretical and 4. experimental ultimate torque based on elastic-perfectly plastic model of material. | | |
| **Supplementary Readings:**   1. Kazimi S.M.A., “Solid mechanics”, Tata McGraw Hill. 2. Popov E. P., “Engineering Mechanics of Solids”, Dorling Kindersley (India) Pvt Ltd. 3. “Gere & Timoshenko – Mechanics of Materials” by James M. Gere & Stephen P. Timoshenko | | | |