






SRI PADMAVATI MAHILA VISVA VIDYALAYAM
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SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING

Strength of Materials & Metallurgy Lab

Key Features: The Strength of Material lab is aimed to demonstrate the basic principles in the area of strength and mechanics of materials to the undergraduate students through a series of experiments. Students will be conducting experiments using UTM to calculate the tensile strength of steel samples and to measure hardness of non-heat treated and heat treated steels by using Brinels hardness testing equipments. This laboratory provides knowledge on the concepts from Strength of Materials theory course. The Metallurgy lab provides basic idea about the identification of the constitution and structure of metals and alloys by use of low magnification, optical microscopes. This lab includes all of the equipment necessary for the preparation of samples prior to analysis by microscopes. This lab contains grinding and polishing wheels to bring a particular metals into a mirror finish and chemically etch the sample to identify the grain structure.

S.No.	Name of the Experiment	Specification and Key Equipment Details	Equipment Photo														
1.	Servo Computerised Universal Testing Machine	<table border="0"> <tr> <td>Make</td> <td>Fine manufacturing industries</td> </tr> <tr> <td>Model</td> <td>TFUC-200</td> </tr> <tr> <td>Least Count</td> <td>0.02Kn</td> </tr> <tr> <td>Resolution of piston movement</td> <td>0.1mm</td> </tr> <tr> <td>Max. Clearance for Tensile Test</td> <td>700mm</td> </tr> <tr> <td>Max. Clearance for Compression Test</td> <td>700mm</td> </tr> <tr> <td>Capacity</td> <td>700mm, 200kN</td> </tr> </table>	Make	Fine manufacturing industries	Model	TFUC-200	Least Count	0.02Kn	Resolution of piston movement	0.1mm	Max. Clearance for Tensile Test	700mm	Max. Clearance for Compression Test	700mm	Capacity	700mm, 200kN	
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3.	Digital Torsion Testing Machine	<p>Make FINE MANUFACTURING INDUSTRIES</p> <p>Model FTT-100NM-D</p> <p>Maximum Torque 100 N-m</p> <p>Torsion Speed 1.5 rpm</p> <p>angle of twist resolution 0.1 degree</p>	
4.	Analogue Impact Testing Machine	<p>Make FINE MANUFACTURING INDUSTRIES</p> <p>Model FIT-300-N</p> <p>Charpy 300 Joule</p> <p>Capacity Izod 170 Joule</p> <p>Least count 1 Joule</p>	
5	Metallurgical Polishing Machine	<p>Make HITECH INDIA EQUIPMENT</p> <p>Model TDR-192-D</p> <p>Disc Diameter 8 inches</p> <p>Power 0.5 HP</p> <p>Speed 100 - 1000 RPM</p>	
6	Stir Casting Furnace And Heat Treatment furnace	<p>Make :Sri Vani Heaters</p> <p>Max Temperature : 1000 °C</p> <p>Crucible Material : Stainless Steel</p> <p>Max. Stirring Speed :1500RPM</p> <p>And</p> <p>Make :Sri Vani Heaters</p> <p>Max Temperature : 1000 °C with shutdown timer</p> <p>Type: Front Loading</p>	