

Course code.	Course Name	L-T-P - Credits	Year of Introduction
ME236	Machine shop	0-0-3-1	2016
<b>Prerequisite: ME220 Manufacturing Technology</b>			
<b>Course Objectives</b> <ul style="list-style-type: none"> <li>• To acquaint with the basic operations of lathe, shaping, slotting, grinding and milling machines.</li> <li>• To conduct the exercise involving plane turning, groove cutting, taper turning, facing, thread cutting, gear cutting and grinding operations.</li> </ul>			
<b>List of exercises</b> <ol style="list-style-type: none"> <li>1. Demonstration of construction and operations of general purpose machines :- lathe, drilling machine, milling machine, shaper, planing machine, slotting machine, cylindrical grinder, surface grinder, and tool and cutter grinder.</li> <li>2. Plane turning and Step turning on lathe.</li> <li>3. Groove turning (cup and ball) and taper turning on lathe.</li> <li>4. Thread cutting and knurling operations on lathe.</li> <li>5. Exercise on machining flat surfaces, grooving keyways using shaping machines.</li> <li>6. Machining of V –block using shaper machines.</li> <li>7. Machining grooves and key slots using slotting machine.</li> <li>8. Experiment on drilling machines –drilling and boring operations.</li> <li>9. Reaming, counter sinking and tapping operations using drilling machines.</li> <li>10. Experiment on milling machine – Plane milling, keyway cutting, and cutting of splines.</li> <li>11. Experiment on vertical milling.</li> <li>12. Cutting of spur gear on milling machine.</li> <li>13. Grinding of plane surface using surface grinding machine.</li> <li>14. Cylindrical grinding using cylindrical grinding machine.</li> </ol>			
<b>Expected outcome.</b> The students will be able to <ol style="list-style-type: none"> <li>i. operate different machine tools using proper work holders</li> <li>ii. produce different part features to the desired quality.</li> </ol>			
<b>Text Books:</b> <ol style="list-style-type: none"> <li>1. R.K. Jain, Production Technology, Khanna Publishers.</li> <li>2. HMT, Production Technology, Tata McGraw Hill.</li> <li>3. Chapman, Workshop Technology Vol II, ELBS.</li> <li>4. S.K. Hajra Choudhury, Workshop Technology Vol II, Media Promoters &amp; Publishers.</li> </ol>			