



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
KAKINADA–533003, Andhra Pradesh, India
DEPARTMENT OF MECHANICAL ENGINEERING

III Year - I Semester		L	T	P	C
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MACHINE TOOLS LABORATORY					

Course objectives:

- 1) To understand general purpose machine tools in the machine shop.
- 2) To demonstrate various operations on lathe machine.
- 3) To demonstrate different operations on drilling machine.
- 4) To demonstrate basic operations on shaping machine.
- 5) To demonstrate the making of keyways on slotting machine.
- 6) To demonstrate the basic operations on milling machine.

Students are expected to perform the following experiments on different machine tools.

- 1) Introduction of general purpose machines -Lathe, Drilling machine, Milling machine, Shaper, Planing machine, Slotting machine, Cylindrical grinder, Surface grinder and Tool and cutter grinder.
- 2) Operations on Lathe machine
 - a) Step turning and Knurling
 - b) Taper turning and Knurling
 - c) Thread cutting and knurling
 - d) Drilling and tapping
- 3) Operations on Drilling machine
 - a) Drilling, reaming and tapping
 - b) Rectangular drilling
 - c) Circumferential drilling
- 4) Operations on Shaping machine
 - a) Round to square
 - b) Round to Hexagonal
- 5) Operations on Slotter
 - a) Keyway (T-slot)
 - b) Keyway cutting
- 6) Operations on milling machines
 - a) Indexing
 - b) Gear manufacturing

Course Outcomes: At the end of the course, student will be able to

- CO1: Demonstrate about general purpose machine tools in the machine shop.
 CO2: Perform various operations on lathe machine.
 CO3: Perceive different operations on drilling machine.
 CO4: Experiment with basic operations on shaping machine.
 CO5: Utilize slotting machine to make keyways.
 CO6: Experiment with the basic operations on milling machine.