

Conventional Turning Syllabus

Learning Objective (LO):

The objective of this course is to understand the working mechanism of Welding Machine, Lathe Machine, Shaping machine etc.

Course Outcomes (CO):

CO No.	Expected Course Outcomes	CL
1	At the end of the course, the students will be able to : Handle Welding Machine, Lathe Machine, Shaping machine etc.	Ap
2	To make screw, threads etc.	Ap
3	Operate Drilling and Taping machine.	Ap

CL: Cognitive Levels (R-Remember; U-Understanding; Ap-Apply; An-Analyze; E-Evaluate; C-Create).

Detail Syllabus

- Trade Introduction** - Responsibilities related to tools and machines. Medical facilities.
- Occupational safety and first aid** - Importance of occupational safety and health. accidents at work place. Safety precautions while using hand tools. Storage of inflammable materials. First aid five concepts, Personal protective equipments. Power failure. Protection of body.
- Measurement and measuring instruments**- Measurement and its types, steel rule, Try Square, Callipers.
- Gauge and precision instruments** - Micrometer. Vernier Callipers. Dial test indicator. Vernier depth Gauge. Surface gauges/marketing block.
- Cutting tools** - Files and Special files, Hacksaw, Chisels.
- Striking and holding tools** - Hammer, Vice.
- Lathe machine** - Introduction and Working of lathe machine, Types of lathe machines. Constructional features of Lathe machine. Lathe machine accessories. Specification of a Lathe machine, Cutting tools, lathe operations. Alignment of Lathe machine centres. Feed mechanism and Safety precautions to be observed while working on Lathe machine. Cutting fluids and their uses. Mounting and dismounting of chuck and Face plate.
- Taper turning** - Taper, Advantages and disadvantages of Taper turning methods as compared to other methods.
- Screw threads** - Types of screw threads. Thread cutting, Change gear train, Screw Thread measurement, Measurement of minor diameter of threads., Measurement of flank angle and form of threads. Production methods of start Thread, Helix angle and its effects

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- on threading tool clearance angle. Left hand thread cutting., Square thread cutting, Setting of tool for thread cutting, feeding of tool for thread cutting.
10. **Gauges and precision instruments** – Gauges and Classification of gauges according to accuracy and use. Plug gauge, Ring gauge, Feeler gauge Angle gauge, Radius or fillet gauge, Slip gauges, Inside micrometer, Sine bar.
 11. **Shaping machine** – Classification of shaping machine, Different types of shaping machines, Main parts of shaping machines. Specifications of shaping machines, quick return mechanism. Feed mechanism, Work supporting and holding devices for shaping machines. Cutting speed and cutting time.
 12. **Drilling machine** – Drilling machines, Size and specifications of Drilling machines. Drilling machine accessories, Counter sinking and Counter boring, Soot facing, Reamers.
 13. **Milling machine** – Classification of milling machine, Specifications of milling machine. Milling cutters, Classification of standard Milling cutters, Milling cutters material. Milling machine attachments, Indexing. Milling operation, Cutting speed, feed and depth of cut.
 14. **Screw threads** – Types of screw threads, Screw pitch gauge, Taps. Tap wrenches, Die, Tap drill size, Removal of broken tap, Removal of stud or screw, Blank size for external threading.
 15. **Welding machine** – Working on welding machine.

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