



MEDI-CAPS
UNIVERSITY

Department of Mechanical Engineering

Skill Development in Machine Shop and CNC Simulator

Description

Machine Shop and Basic Tools is an introductory course that provides students with an understanding of the fundamentals of the duties of machinists. Students learn the use of basic hand tools, measuring tools and machine cutting tools. Many aspects in basic machine shop cover the use of the five most commonly used machine tools: precision grinders, milling machines, lathes, shapers and drilling machines.

Essentially, machining refers to the process where raw materials are forged into a final shape and design. These shops use tools to create custom parts, usually made from metal or plastic, and sell them to factories. Many companies in the manufacturing industry rely on machine shops for custom parts. Without access to machine shops, companies would need to invest in their own expensive machinery and skilled workers. Doing so would be detrimental due to the increase in expenses.

The department of mechanical engineering, through this internship course, shall make an effort to induce all basic machining skills in the students as well as students will be made well conversed with measuring instruments.

Topics will be covered:

Week 1

MEASURING INSTRUMENTS:

- Calibration and use of instruments
- Interpretation of readings.

LATHE MACHINE:

- Parts of LATHE
- Classification of LATHE
- Types of operations
- Various tools required
- Maintenance and cleaning of machine
- Precautions needed while operating
- Duties of machinist
- Live demonstration of operations
- Activities:

- Preparation of Job
- Preparation of drawing
- Completion of Job (Various Operations)
- Maintenance of machine

Week 2

Drilling MACHINE:

- Parts of Drill and drill machine
- Classification of Drilling Machine
- Various Mechanisms involved
- Types of operations
- Various tools required
- Maintenance and cleaning of machine
- Precautions needed while operating
- Duties of machinist
- Live demonstration of operations
- Activities:
 - Preparation of Job
 - Preparation of drawing
 - Completion of Job (Various Operations)
 - Maintenance of machine

SHAPING MACHINE:

- Parts of Shaper
- Classification of Shaping Machine
- Various Mechanisms involved
- Types of operations
- Various tools required
- Maintenance and cleaning of machine
- Precautions needed while operating
- Duties of machinist
- Live demonstration of operations
- Activities:
 - Preparation of Job
 - Preparation of drawing
 - Completion of Job (Various Operations)
 - Maintenance of machine

Week 3

MILLING MACHINE:

- Parts of Milling Machine
- Classification of Milling Machine

- Various Mechanisms involved
- Types of cutters
- Types of operations
- Maintenance and cleaning of machine
- Precautions needed while operating
- Duties of machinist
- Live demonstration of operations
- Activities:
 - Preparation of Job
 - Preparation of drawing
 - Completion of Job (Various Operations)
 - Maintenance of machine

SURFACE GRINDING MACHINE:

- Parts of Grinding Machine
- Classification of Grinders
- Nomenclature of Grinders
- Types of operations
- Maintenance and cleaning of machine
- Precautions needed while operating
- Duties of machinist
- Live demonstration of operations
- Activities:
 - Preparation of Job
 - Preparation of drawing
 - Completion of Job (Various Operations)
 - Maintenance of machine

Week 4

Numerical Control and CNC:

- Comparison between N.C. & C.N.C. M/c
- Introduction to CNC, Coding and Simulator
- Identifications of different parts & different drives, accessories, tools of CNC machine.
- "Absolute & Incremental Programming on CNC Mill in CNC Simulator Pro:
 - 1 Hole at Centre
 - 1 Hole at Centre & 4 Holes at Corners ($h_{\text{corner}} = 2 \times h_{\text{centre}}$)
 - L-Section, T Section, I Section, A section, O Section, C Section

Registration Details

1. Fill the Registration Form available at our website www.medicaps.ac.in.
2. Registration link: <https://forms.gle/4HXYt1fruTwt3wW36>
3. The selection of students to any training module is on first come first serve basis.

4. Maximum no. of seats: 60
5. The participants can pay registration fees through Internet transfer, the details are:
Bank: IDBI
A/C No: 0001104000600323
A/C Name: MEDI-CAPS UNIVERSITY-CEP
IFSC Code: IBKL0000001

Contact

For Summer Training Related Queries:

The candidates may mail to:

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