

**INDIAN INSTITUTE OF TECHNOLOGY MUMBAI / MECHANICAL ENGG DEPT  
CENTRAL WORKSHOP**

**ME 213: MANUFACTURING PRACTICE LABORATORY**

**Academic Year: 2022 – 23**

**[LAB: MON / TUE / THUR / 2:00 to 4.55 pm; Venue: N2 Bay (C/W), CNC Training Section]**

**A] PRACTICAL WORK**

- 1) Prepare the individual components of the **PEN** and assemble them into a workable unit. Necessary drawings will be supplied.
- 2) Make a **Charpy Test Specimen** as per drawing given.
- 3) Working in **CNC Training Section (N2 Bay & N3 Bay)**

Students will work in a group. Each group will get one Lathe and one Shaping machine, and any other machine as and when required. Students should properly plan their work and must note down the actual time utilized for each component.

**[B] REPORT WRITING**

- 1) Each group will submit a **SINGLE HAND WRITTEN FINAL** report (in clip type office file – **no plastic folders**) *during VIVA*, with **name, roll no. and signature** of all the group members on each page of the report. No Extension of last date will be possible. The report must include the following.
  - (i) Detail drawing of each component of **PEN** with all dimensions, tolerances and names on an A3 size sheet in full scale. [All drawings should be Hand Drawn]. **[See Appendix-I]**
  - (ii) Assembly drawing of **PEN** on an A3 size sheet in full scale. Plan, elevation and end-view should be drawn and suitable sections should be shown. **[See Appendix-II]**
  - (iii) Detail drawing of the Charpy Test specimen. **[See Appendix-III]**
  - (iv) Sequence of operations for each component on separate A4 pages from the raw material to the finished stage for all components of **PEN** **[See Appendix-IV]**
  - (v) Specifications of machines on separate A4 pages on which you have worked [Lathe, Shaper, Drilling, Milling]. **[See Appendix-V]**
- 2) Each group will prepare and submit a **SINGLE INSPECTION REPORT** along with the submission of the **PEN** in table format (as in sample table below) showing their respective names, actual dimensions measured on the final job, and error with respect to the drawing dimensions. Least Count of measurement should be 0.02 mm (Use vernier caliper).

**Format of Sample Inspection Table**

Component Name	Drawing Dimension (mm)	Actual Dimension (mm)	Error (mm)	Remark

**C] ASSESSMENT PLAN:**

- I. Conventional machining section: 50**
  - a) Attendance: 20**
  - a) Report writing: 10**
  - b) Viva: 10**
  - c) Fabrication and assembly: 10**
- II. CNC Training Section: 50**
  - a) Attendance and working: 30**
  - b) Endsem: 20**

**D] SAFETY INSTRUCTION:**

**Each and every student must read through the safety instructions available in central workshop and comply with the same.**

**E] QUERIES:** In the case of any query, send a common mail to  
([ashrivastava.me@iitb.ac.in](mailto:ashrivastava.me@iitb.ac.in), [yogeshrsony@iitb.ac.in](mailto:yogeshrsony@iitb.ac.in))

**F] REFERENCES**

Any standard text book on workshop technology, engineering drawing, machining processes will be helpful over and above the drawings and materials supplied in the moodle.