

Manufacturing Practices Workshop

MEBT100	Manufacturing Practices Workshop	0L:0T:2P	2 Credits
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Course Objective:

1. To provide exposure to the students with hands on experience on various basic engineering practices in Civil, Mechanical, Electrical and Electronics Engineering.
2. To have a study and hands-on-exercise on plumbing and carpentry components.
3. To have a practice on gas welding, foundry operations and fitting
4. To have a study on measurement of electrical quantities, energy and resistance to earth.
5. To have a practice on soldering.

Course Content:

Module I: Manufacturing Methods- casting, forming, machining, joining, advanced manufacturing methods.

Module II: CNC machining, Additive manufacturing.

Module III: Fitting operations & power tools.

Module IV: Electrical & Electronics.

Module V: Carpentry.

Module VI: Plastic moulding, glass cutting.

Module VII: Metal casting.

Module VIII: Welding (arc welding & gas welding), brazing.

Practicals:

1. Machine shop
2. Fitting shop
3. Carpentry
4. Electrical & Electronics
5. Welding shop (Arc welding + Gas welding)
6. Casting
7. Smithy
8. Plastic Moulding & Glass Cutting

Examinations could involve the actual fabrication of simple components, utilizing one or more of the techniques covered above.

Suggested Text/Reference Books:

1. [AICTE Prescribed Textbook: Workshop Manufacturing Practices \(with Lab Manual\), Veeran D.K., Khanna Book Publishing Co., New Delhi, 2023.](#)
2. Hajra Choudhury S.K., Hajra Choudhury A.K. and Nirjhar Roy S.K., “Elements of Workshop Technology”, Vol. I 2008 and Vol. II 2010, Media promoters and publishers private limited, Mumbai.
3. Kalpakjian S. And Steven S. Schmid, “Manufacturing Engineering and Technology”, 4th edition, Pearson Education India Edition, 2002.
4. Gowri P. Hariharan and A. Suresh Babu,” Manufacturing Technology – I” Pearson Education, 2008.
5. Roy A. Lindberg, “Processes and Materials of Manufacture”, 4th edition, Prentice Hall India, 1998.
6. Rao P.N., “Manufacturing Technology”, Vol. I and Vol. II, Tata McGraw Hill House, 2017.

EXPERIMENTS THAT MAY BE PERFORMED THROUGH VIRTUAL LABS:

S. No.	Experiment Name	Experiment Link(s)
1	Welding shop (Arc welding + Gas welding).	http://mm-coep.vlabs.ac.in/LaserSpotWelding/Theory.html?domain=Mechanical%20Engineering&lab=Welcome%20to%20Micromachining%20laboratory
2	Casting	http://fab-coep.vlabs.ac.in/exp7/Theory.html?domain=Mechanical%20Engineering&lab=Welcome%20to%20FAB%20laboratory

Course Outcomes: Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry, to fabricate components using different materials.

Laboratory Outcomes:

Upon completion of this laboratory course, students will be able:

- To fabricate components with their own hands.
- To relate practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.
- To design small devices of their interest by assembling different components
