

## **ME110 Workshop I (0-0-3-3)**

*Prerequisite: Nil*

Familiarization with workshop practice, safety, health and environmental issues, demonstrations in machine, carpentry, fitting, welding and foundry shops. Introduction to different welding processes, demonstration of gas, TIG, MAG and submerged arc welding processes, simple exercises in shielded metal arc welding. Introduction to wood working, hand tools and machines, simple exercises in wood working including making of a simple pattern for foundry. Introduction to foundry shop, exercises in green sand molding and CO2 molding, demonstration of shell molding; familiarization with melting and pouring practices. Introduction to bench work and fitting, simple exercises involving filing, sawing, drilling and tapping. Assembly of the models of CNC machines and exposure to part programming. Practice on working with sheet-metal/ plastic/ glass/ composite.

### **Texts:**

[1] Department of Mechanical Engineering, IIT Guwahati, Workshop Practice Manual, Vidya Mandir, Guwahati, 2018.

### **References:**

[1] S. K. H. Choudhury, A. K. H. Choudhury and N. Roy, Elements of Workshop Technology, Volume I: Manufacturing Processes, Media Promoters, 2008.

[2] H. Gerling, All About Machine Tools, 2nd Edition, New Age International, 2006.

[3] W. A. J. Chapman, Workshop Technology, 4th Edition, Viva Books, 1998.

[4] HMT, Mechatronics, McGraw Hill Education, New Delhi, 2017.