

1st SEMESTER
WELDING TECHNOLOGY
SKILL ENHANCEMENT COURSE (SEC)

WTC122S: WELDING TECHNOLOGY-I

CREDITS: THEORY: 2, PRACTICAL: 2

THEORY (2 CREDITS)

UNIT-I

Introduction and definition of welding and weldability; safe working practices; elementary first aid; welding equipment, tools, accessories, electrodes and filler rods; types of welding joints and its applications; temporary and permanent metal joining methods; classification of welding and allied processes.

UNIT-II

Allied Processes: material joining processes- soldering, brazing, adhesive bonding, surfacing and thermal spraying.

Arc welding: equipment for arc welding, tungsten arc welding (TIG), metal arc welding (MIG), shielded metal arc welding, submerged arc welding and their applications, advantages and limitations.

LIST OF PRACTICALS (2 CREDITS):

- 1) Introduction to welding equipment.
- 2) Introduction to safety devices for welding processes.
- 3) Jigs and fixtures used during welding processes.
- 4) Basic sample preparation for welding.
- 5) Setting up of arc welding machine and accessories, and striking an arc.
- 6) Deposit straight line bead on MS plate in flat position.
- 7) Deposit bead with filler rod on MS sheet 2 mm thick in flat position.
- 8) Use arc welding to make basic welded joints (Lap and Butt joint).

LIST OF RECOMMENDED BOOKS

1. Welding Engineering and Technology by Dr. R.S. Parmer, 2nd Edition, Khanna Publishers.
2. Welding Technology and Design by V. M. Radakrishnan, New age internationals.
3. Materials and Processes in Manufacturing by E. Paul Degarmo, J.T. Black, Ronald A. Kohser. Eighth Edition, Prentice Hall India.
4. Elements of Workshop Technology Vol. I and II by S. K. Hajra Choudhury, A.K. Hajra Choudhury, Nirjhar Roy, Media Promoters & Publishers Pvt. Ltd.