

Welding Technology

Code: DBME-103

L T P

2 0 1

Theory : 50

Practical : 50

Total : 100

Objectives:

- Student will learn about various metal joining processes used commercially & in industries for joining metals.

Learning Outcomes:

- To have understanding of various welding processes.
- Able to identify the welding process according to suitability of application of joint
- Able to read welding symbols in drawings.
- Identify type of weld defects arises while welding.

Unit-I

Metal Joining Process: Introduction, classification of welding processes. Commonly welded base metals, advantages and disadvantages of welding. Various types of weld joints & weld symbols, Heat affected zone and its properties.

Unit-II

Resistance Welding Process: Introduction, Principle, Working. Spot welding, Seam welding, Projection welding, upset welding, Flash Butt welding, Percussion welding

Unit-III

Gas Welding Process: Introduction, oxy-acetylene welding. Principle of operation, types of welding flames. Filler metals and fluxes, gas welding equipment.

Unit-IV

Arc Welding Process: Introduction, Principle, working, equipment, Flux Shielded Metal arc welding, Sub merged Arc welding, TIG and MIG, details of welding electrodes, Ingredients of coating and their functions

Unit-V

Other Welding Process & Defects: Thermit welding, Electron beam welding, Laser Beam welding, Friction stir welding, Ultrasonic welding, Friction welding, Forge welding, Roll welding. Type of defects in weldments, causes & remedies.

Text Books:

- “Welding Engineering and Technology”, by R.S. Parmar, Khanna Publishers, New Delhi, 2008.
- A Text Book on Welding Technology by G.D. Garg, S.K. Kataria & Sons

Reference Book:

- R.L. Little, “Welding and welding Technology”, Tata McGraw Hill Publishing Co., Ltd., New Delhi, 2008.

List of Experiments:

1. Practice in setting current and voltage for striking proper arc. Earthing of welding machine.
2. Practice of striking arc and tacking while using electric arc welding set.
3. Welding practices on electric arc welding for making uniform and straight weld beads
4. Preparation of butt joint by electric arc welding.
5. Preparation of lap joint by electric arc welding.
6. Preparation of corner joint by using electric arc welding.
7. Preparation of T joint by electric arc welding.
8. Exercise on gas cutting of mild steel plate with oxy-acetylene gas torch.
9. Exercise on MIG and TIG welding