

## WELDING SKILL DEVELOPMENT MODULE: BASEWELD – 2

### BASE WELD TRAINING PROGRAM IN SMAW, GMAW, OXFW/OXFB WITH SIMULATOR PRACTICE

Course Code: BW- 2

No. Of Seats: 12 per Batch

DURATION: 480 Hrs (12 weeks)

Date & Fees: See Course Schedule

#### COURSE OBJECTIVE/CONTENT

This Basic welding course will provide opportunity to fresh employment aspirants for careers in welding. They will be provided information on welding practice fundamentals, receive guided and independent practice for the use of various techniques for developing basic skills for welding in GMAW, SMAW & Oxy Acetylene welding process. This program will enable them to become welders for employment in Auto shops and general fabrication shops.

#### THEORY – 120 Hrs

*Including self-learning with a Digital Module on GMAW basic level.*

- Role of welders in Industry and career options
- Introduction & applications of commonly used metal –in cutting /welding/brazing processes
- Safety precaution in Welding & Cutting
- GMAW Process fundamentals overview
- GMAW set up, installation, maintenance & review
- GMAW process related defects, causes and remedies
- SMAW Process fundamentals overview
- SMAW set up, installation, maintenance & review
- SMAW process related defects, causes and remedies
- Oxy Acetylene welding process fundamentals overview
- Oxy Acetylene welding set up, installation, maintenance & review
- Oxy Acetylene welding related defects, causes & remedies.

## **PRACTICAL- 360 Hrs**

### ***Including practice over several lessons on a welding Simulator.***

- Developing hand skills related to Position, Speed, Stick-out/ Arc length and angle.
- Learning to observe the impact on weld of Gaps, weld bead shape & size, spatters, weld penetration and porosity etc.
- Practicing over various Welding Positions: 1G, 2G, 3G, 1F, 2F, and 3F for Mild Steel up to 3mm.

After successful practical in every lesson on the Simulator (GMAW), candidate goes for actual arc welding practice in the shop, where:

- He is required to prepare weld pieces for executing different types of weld joints as per the curriculum. The practice curriculum is adequate to provide opportunity for the trainee to be as below
  - Able to reach a level of competency for the specific weld joint. The standard module limits the practice on MS material.
  - Develop the know-how for creating a correct weld set up, including the welding equipment, gas manifold/ cylinder and other accessories; correct choice of welding electrodes and knowledge about their codes and types; understanding of power supply accessories for correct connectivity; etc.
  - How to choose appropriate welding parameters and also relate these to weld quality;
  - How to self-analyse weld quality and decide on corrective action.
  - How to measure productivity and prevent waste/ rework.

### **ELIGIBILITY**

- ITI Welder,
- Welder's Helper with 1-2 years work experience,
- Non –SSC fresh candidates with aptitude for welding as career.

### **COURSE EVALUATION**

After every Theory lesson, there is an assessment of learning level on E module

During Simulator-based practice, the trainee has to go through a Multi-level graded learning Lesson plan (comprising of 125 lessons). For every lesson he has to achieve the minimum qualification criterion, before he gets to use the next (level) or final lesson. There is a separate LOG for each student to track individual's progress.

During actual arc-welding practice, every trainee has to successfully complete the assignments as per the WORK-BOOK. The Instructors closely monitor the level of competence each trainee develops and take corrective measure to help laggards also acquire minimum level competencies, through repetitive practice.

At the end of the curriculum, OBJECTIVE-type test on fundamentals and a PRACTICE TEST on the full scope of the skill curriculum is executed and assessed by a competent team of assessors.

Certificates will be issued to successful all trainees which are qualified with levels of attainment-Excellent/ Good/ Satisfactory.

### **OUTCOMES**

Trainee will be good welder and able to perform GMAW, SMAW & Oxy Acetylene welding processes at entry level production in auto ancillaries and general fabrication shops.

**NOTE:** The above course can be delivered in English, Hindi and Marathi