

WELDING TECHNOLOGY

MCE010

COURSE DESCRIPTION

This course provides the participants with the means to properly operate and support various types of welding technology and the differences between them from design, utilization and operation points of view in a way based on the good acquaintance with the modern technologies applied in this field. The course fills many gaps of knowledge they like to make it over.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to understand various types of welding technology and the differences between them from design, utilization and operation in order to do a good job.

COURSE OBJECTIVES

By the end of this course the participant will be able to:

- Understand welding processes and different welding techniques.
- Identify and select welding electrode types.
- Understand welding symbols and procedures.
- Understand welding quality.
- Understand and apply inspection procedures.

WHO CAN BENEFIT

Welding-joint designers, welding engineers, welding inspector and welding technicians of all categories.

COURSE DURATION

5 working Days

COURSE OUTLINE

1. Welding Processes and Different Welding Techniques

- Welding Principles.
- ARC Welding.
- Resistance Welding
- Flash Welding.

- Oxyfuel Gas Welding.
- Solid State Welding.
- Electron Beam Welding.
- Laser Beam Welding.
- Brazing.
- Soldering.
- Thermal Spraying.
- Thermal Cutting.

2. Welding Electrode Types & Selection

- What is SMAW (Shielded-Metal ARC Welding).
- SMAW Electrodes.
- AWS SMAW Electrodes.
- Mild Steel Electrodes.
- Low-Alloy-Steel Electrodes.
- Stainless Steels.
- Copper Alloy Electrodes.

3. Welding Symbols

- Basic Weld Symbols.
- Brazing Weld Symbols.
- Non-Destructive Examination Symbols.

4. Weld Procedures

- Code Requirements.
- Failure Mechanisms.
- Weldability.
- Repair Procedures.
- Fabrication Procedures.

5. Welding Quality

- Terminology.
- Discontinuities in fusion welded Joints.
- Causes and remedies for fusion weld discontinuities.
- Significance of weld discontinuities.
- Procedures Specifications.

6. Inspection

- Weld Testing (Mechanical vs. NDT).
- Welding Inspectors.
- Requirements for Inspectors.
- Inspection Plan.
- Non-Destructive Examination.

7. Weldability of Carbon and Low-Alloy Steels

arctic