

Welding & Fabrication

Course code NARQ40009 - PROCESS : Session Plan

Days	Sessions	Subjects
01	I	Registration & Inauguration. About the institute , rules & regulation of training / institute
	II	Micro lab –ice breaking exercise
	III	Achievement Motivation –confidence building
	IV	Why self employment -Advantages over wage employment, Entrepreneurship Development-What, why &How? (introduction)
02	I & II	Entrepreneurial competencies-importance, explanation with examples , case study for identification of different competencies
	III&IV	Risk taking and goal setting –Ring toss exercise
03	I	Time management
	II	Introduction & Importance of Welding in Industry - Safety precautions in Shielded Metal Arc Welding
	III&IV	Introduction and definition of welding.- Arc and Gas Welding Equipments,tools and accessories
04	I	Problem solving explanation through case studies and exercises , creativity-creative thinking
	II & III	Oxy- Acetylene Welding and Cutting
	IV	Elementary First Aid.
05	I	Various Welding Processes and its applications
	II	Arc and Gas Welding terms and definitions
	III & IV	Boat Game – Systematic Planning, Efficiency Orientation & Concern for quality
06	I & II	Different process of metal joining methods: riveting, soldering, brazing, seaming etc.
	III & IV	Types of welding joints and its applications. Edge preparation and fit up for different thickness. Surface Cleaning – Practical
07	I&III	Basic electricity applicable to arc welding and related electrical terms &definitions.- Heat and temperature and its terms related to welding - Principle of arc welding. And characteristics of arc – Practical
	IV	Tower building- Eradicating dependency syndrome

08	I&II	Common gases used for welding & cutting, flame temperatures and uses.- Chemistry of oxy-acetylene flame.- Types of oxy-acetylene flames and uses. Oxy-Acetylene Cutting Equipment principle, parameters and application
	III& IV	Above the session practical
09	I&II	Arc welding power sources: Transformer, Motor Generator set, Rectifier and Inverter type .- Advantages and disadvantages of A.C. and D.C. welding machines
	III&IV	welding machines and its care & maintenance -Practical
10	I	Effective communication skills
	II to IV	Welding positions as per EN & ASME: flat, horizontal, vertical and over head position.- Weld slope and rotation.- Welding symbols as per BIS & AWS – practical
11	I&II	Arc length – types – effects of arc length polarity: Types and applications.
	III & IV	Arc length – types – effects of arc length polarity: Types and applications –Above the practical
12	I & II	Calcium carbide properties and uses.- Acetylene gas properties and generating methods.
	III & IV	Acetylene gas Purifier, Hydraulic back pressure valve and Flash back arrestor – Practical
13	I	Experience sharing – interaction with successful entrepreneur
	II to IV	Oxygen gas and its properties- Production of oxygen by Airliquefaction - Charging process of oxygen and acetylene gases - Oxygen and Dissolved Acetylene gas cylinders and Color coding for different gas cylinders. - Gas regulators, types and uses.
14	I & III	Oxy acetylene gas welding Systems (Low pressure and High pressure). Difference between gas welding blow pipe(LP & HP) and gas cutting blow pipe - Gas welding techniques. Rightward and Leftward techniques. –practical
	IV	Market survey theory
15	I	Arc blow – causes and methods of controlling. Distortion in arc & gas welding and methods employed to minimize distortion - Arc Welding defects, causes and Remedies –practical
	II to IV	Market Survey Collection of information and field visits
16	I & II	Market Survey –Report Writing presentation, Group Discussion & Analysis
	III & IV	Specification of pipes, various types of pipe joints, pipe welding positions, and procedure.- Difference between pipe welding and plate welding.

17	I & II	Pipe development for Elbow joint, "T" joint, Y joint and branch joint - Manifold system
	III & IV	Pipe welding –practical
	Post evening	Mid Term evaluation test
18	I & II	Gas welding filler rods, specifications and sizes.- Gas welding fluxes – types and functions
	III & IV	Gas Brazing & Soldering : principles, types fluxes & use- Gas welding defects, causes and remedies.
19	I to IV	Gas welding practical
20	I & II	Electrode : types, functions of flux, coating factor, sizes of electrode Coding of electrode as per BIS, AWS,
	III & IV	Above the session practical
21	I & II	Weld ability of metals, importance of pre heating, post heating and maintenance of inter pass temperature
	III&IV	Above the session practical
22	I&II	Classification of steel - Welding of low, medium and high carbon steel and alloy steels.
	III&IV	Effects of alloying elements on steel - Stainless steel : types- weld decay and weld ability
23	I	Human Relations
	II to IV	Steel Welding practical
24	I to IV	Brass – types – properties and welding methods. - Copper – types – properties and welding methods.
25	I	Maintenance of records & book keeping –methodology
	II to IV	Welding Practical
26	I	Aluminum and its alloys, properties and edibility, Welding methods - Arc cutting & gouging,
	II&IV	Above the session practical
27	I&II	Cast iron and its properties types. - Welding methods of cast iron.
	II&IV	Above the session practical

28	I to IV	Industrial Visit / Field visit
29	I&II	Banking –deposits & advances , lending schemes /Government schemes
	III	Costing pricing –Fixed Cost Variable Cost Break even point etc
	IV	Business Plan / project report preparation
30	I	Marketing Management
	II	Launching formalities -steps in launching of an enterprises pitfalls and their control
	III	Final Evaluation Test
	IV	Feedback & Valedictory