



Fitter Fabrication

QP Code: CSC/Q0303

Full Curriculum

Module 1: Basic, Health, Safety And Security Procedures

64 hrs

This module the trainees will be guided unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment. In this module the trainees will be guided with all the health, safety & security procedures that need to be followed throughout the training period. It also covers 5S that needs to be maintained throughout to maintain a clean and safe working environment.

Topics:

- 5S
- Workshop Safety
- Welding Safety
- Fire safety
- Health and Hygiene
- Basics of electricity

Module 2: Revision Of Basics Mathematics

64 hrs

In this module the trainees will be taught the basic mathematics that will be required for workshop related calculations:

Topics:

- Units of Metric, ISO, and FPS
- Addition Subtraction Multiplication and Division
- Basic Calculation of area and volume
- Skills to solve problems in Fractions, Decimals, Percentage, and ratio
- Basics of Algebra and understand Simple algebraic equations
- Techniques of solving simple Trigonometric problems

Module 3: Material Science

40 hrs

In this module the trainees will be taught the basic identify range of materials by color, appearance, sparks Range of Materials: Ferrous metals: e.g. Carbon steels, stainless steels, cast iron, tool steel, hard metals; Non-ferrous metals: e.g. Bronze, bronze alloys, copper and copper alloys.

Topics:

- Metals and non-metals
- Ferrous and non-ferrous metals
- Steel-Properties and applications of the following
- Carbon Steels
- Alloy Steels (With Reference to welding)
- Stainless Steel
- Non-Ferrous metal-Properties and applications of the following
- Copper and its Alloys
- Aluminium and its alloys
- Weldability of Material

Module 4: Mechanical Properties Of Metals

48 hrs

In this module, trainees will be knowledge about mechanical property deferent types of materials

Topics:

- Tensile strength
- Toughness
- Hardness
- Elasticity
- Ductility

Module 5: Fitting Operations On Metal Components

88 hrs

This module covers the knowledge about the basic hand tools and power tools and their operating process with specification

Topics:

- Filing
- Hacksawing
- Marking
- Number and Letter Punching, Centre punching
- Scribing profiles
- Drilling
- Counter Boring and Counter sinking
- Tapping
- Chiselling
- Hammers
- Spanner
- Fastener

Module 6: Measuring/Checking Instruments

40 hrs

This module covers the knowledge about the basic measuring tools used in the workshop as per job role.

Topics:

- Steel rule and tape-Application, specification and care
- Inside and Outside Calliper-Application, specification, and care
- Vernier Calliper-Application, specification, and care
- Micro metre -Application, specification, and care
- Radius and Fillet Gauges, use and care
- Weld Gauges – To verify size of weld
- Bevel Protractor-Application, specification, and care

Module 7: Positioning And Holding Devices And Mechanism

56 hrs

These module trainees will learn about material handling with safety guideline of using holding device and mechanism

Topics:

- Belts
- Braces
- Clamps
- Jigs and fixtures
- Bolt straps
- Blocks and tables
- Manual lifts
- Ropes
- Jacks

Module 8: Features Of Components

48 hrs

These module trainees will learn about features of components using as per job role requirements.

Topics:

- Parallel and angular faces
- Perpendicular plates
- Radii and curved profiles
- Drilled holes
- Internal and external threads
- Sliding or mating parts
- Counter bore, counter sink or spot face

Module 9: Dimensional Parameters

48 hrs

In this module, cover the knowledge about deferent dimensional parameter of job profile as per requirement.

Topics:

- Linear dimensions
- Flatness
- Squareness
- Depths
- Angles
- Profiles
- Hole position
- Hole size/fit

- Thread size and fit

Module 10: Welding

64 hrs

This module trainees learn knowledge about introduction of welding and types of welding with uses welding equipment's as per requirement.

Topics:

- Introduction to welding process
- Types of welding
- Welding equipment's

Module 11: MMAW / SMAW

88 hrs

In this module trainees learn about MMAW process with features and advantage, disadvantages.

Topics:

- Preparation of weld work area
- Features
- Advantages and disadvantages
- Arc length and its effects
- Long arc, short arc, normal arc, their effect on weld
- Polarity in DC arc welding
- Straight polarity, Reverse polarity, their application
- Effect of angle of electrode on welding
- Types of welding joints
- Fillet weld, groove weld
- Purpose of root gap, tacking and keyhole
- Welding positions 1F to 6F and 1GR to 6GR
- Characteristics of arc and its effect on welding
- Identification of defects in welding and remedial measures

Module 12: Pipe Welding

48 hrs

This module trainees learn about different pipe welding process

Topics:

- Types of pipe welding
- Preparation of pipes
- Welding procedure in different position
- Different welding processes, their advantages and disadvantages

Module 13: Manual Cutting

48 hrs

This unit is about manual cutting using oxy-acetylene gas

Topics:

- Type of gas, its property and application
- Color coding of cylinder
- Lighting of cutting charger
- Controlling of gas
- Selection of cutting nozzle
- Welding procedure in different position
- Introduction to process
- Safety on handling gas cylinders
- Setting up cylinders and cutting torch
- Regulators flash back and backfire arrestors
- Process of cutting
- Straight cutting, bevel cutting

Module 14: Machine Cutting

120 hrs

This unit is includes cutting material with the help of Automatic Machine using oxy-acetylene gas.

Topics:

- PUG cutting machine and its parts and functions
- Setting machine and machine parameters
- Straight, Bevel and circular cutting