**DESCRIPTION OF THE SKILL- WELDING**

Welding is a critical process that is controlled by both National and International standards and

specifications to control the quality of the deposited weld metal and the skill of the welder.

A welder prepares and joins a range of metals and metallic alloys using mainly processes where an

electric arc is the heat source. Electric arc processes utilize a gas shield or a flux to protect the molten

weld area from contamination by the surrounding atmosphere. A welder needs to be able to interpret

engineering drawings, standards and symbols and correctly translate these requirements into accurate

structures and fabrications.

Welders need to have a thorough knowledge and understanding of safe working practices, personal

protection equipment and the hazards and practices associated with welding and fabrication

industries. They need to gain specific knowledge of a wide range of welding equipment and processes

as well as an understanding of how welding will affect the structure of the material being welded well.

They need to be familiar with electricity and how it is utilized for welding.

Welders join sections, pipe and plate and fabricate large and small pressure vessels. A welder prepares,

assembles and joins a wide range of metals and metal alloys using various welding processes including

manual metal arc welding/shielded metal arc welding metal arc gas shielded welding/gas metal arc

welding, Tungsten arc gas shielded welding/gas tungsten arc welding and flux cored arc welding. A

welder will use mainly processes where the heat utilized for welding will be an electric arc to join a

range of materials including the commonly joined and fabricated materials – carbon steel, stainless

steels, aluminum and copper and their associated alloys. They must be able to select the correct

equipment, process variables and welding technique depending upon the material being joined.

**Tools and Equipment’s required**

Welding rectifier/ transformer 300 AMPS for GMAW, FCAW-GS and GTAW welding

Wire brush

Chipping hammer

Hacksaw Blade

Hammer

Grinder-5 inch

6 inch square

12 inch steel ruler

Cutting wheel 5 inch

Grinding wheel 5 inch

Chisel 6 inch

**Safety PPE**

WELDING HELMET

LEATHER APRON

LEATHER WELDING HAND GLOVES FOR MIG AND STICK WELDING

LEATHER HAND SLEEVES

TIG WELDING GLOVES

SAFETY SHOE STEEL TOE

**Welding Consumables**

Mig wire ER70s-6 1.2mm

FCAW wire LW-71 E71T-1C 1.2mm

Tig filler wire ER70S-2 2.4mm

Stick Electrode 7018 2.5, 3.15,4 mm Electrodes**.**

**GAS**

Argon for Tig welding

ACM 80/20 for GMAW

100% Co2 for FCAW