

ENTRY LEVEL MULTI PROCESS WELDER- PROGRAM OUTLINE

Practical Skills Development: In Class

270 hours

Shielded Metal Arc Welding - (SMAW)

90 hours *

Students will develop knowledge and skills in Shielded Metal Arc Welding process (also known as Stick welding).

This process is the basis of all other forms of arc welding. It is relatively slow compared to other processes and requires a high degree of skill to perform.

Fundamental procedures and principles are introduced, practiced and refined. Techniques are developed for fillet and groove welds. Proficiency in flat and horizontal positions will be developed. Vertical/ Overhead positions can also be learned depending upon student capabilities. In house testing is performed to CWB / TSSA / ASME codes and specifications. On completion of the course students will test for CWB certification in SMAW Flat**.

Gas Metal Arc Welding - (GMAW)

90 hours*

This course will develop basic welding skills in Gas Metal Arc Welding process (also known as Mig welding). This process is relatively fast to use and requires moderate operator skill to perform. It is used in situations where cost effective practices and speed are paramount.

Fundamental procedures and principles are introduced, practiced and refined. Techniques are developed for fillet and butt welds. Objective will be proficiency in all positions on plate using small diameter solid wire. On completion of the course students will test for CWB certification in GMAW Flat**.

Flux Cored Arc Welding (FCAW)

30 hours*

In this course students are introduced to the Flux Cored Arc Welding. This process is similar to GMAW but uses a hollow tubular welding wire. It is used in applications where large weld deposits are required. Skills already developed for GMAW are adapted and refined for FCAW. Fillet and butt welds are practiced. Objective will be proficiency in all positions on heavy plate sections. On completion of the course students will test for CWB certification in FCAW Flat**.

Gas Tungsten Arc Welding (GTAW)

60 hours*

Students develop knowledge and skills in the Gas Tungsten Arc Welding process (also known as Tig). GTAW welding is a high quality precision process that requires excellent eye/hand coordination.

Fillet and butt welds on light gauge to 1/4" carbon steel plate are perfected. Training is completed in all positions.

Students can apply for CWB certification in GTAW Flat if they request but it is not mandatory. Aluminum GTAW welding can also be learned and tested in if the student requests.

Shop practices

20 hours

Students are introduced to shop equipment and safe operation procedures. Students become competent in use of Oxy-Fuel Cutting Torches (both manual and semi automatic), Plasma Cutters, Band saw and Electric Grinders. Safe material handling practices are also covered.

*Please note: the proportion of training hours devoted to each process depends on the trainee's learning curve.

** Additional CWB testing can be applied for after completion of the mandatory flat ticket.

Theory Development: Private study/ one-on-one tutorial as required Approximately 10 hours/ week

Welding Process Theory- SMAW, GMAW, FCAW and GTAW

This theoretical course will introduce the principles, applications and fundamentals of all four welding processes.

Students are taught how to set up welding machines, electrode classification and selection, and the technical backgrounds to each individual processes.

Health and Safety

Health and Safety issues, as they relate to welders and the welding industry, are introduced and explored.

Students learn to identify potential hazards, avoid workplace accidents and ensure the health and safety of themselves and work colleagues. Safety certifications in WHMIS, Fall Protection, Confined Space, H2S Safety, Ladder and Scaffold Safety, Lock out Tag out and Forklift are available through our affiliation with Employers First in Peterborough.

Welding Symbols and Blueprint Reading

In a module based program students are introduced to welding symbols and develop skills in interpreting blueprints. The course is designed for students to work through at their own pace. Students are given small segments of information and, building on each step, are immediately asked to apply the knowledge. At the end of the program students will be able to take this knowledge to perform basic layout and fitting.

Trades Math: One-on-one tutorial as required

Approximately 10 hours

In this component students are tutored on a one-on-one and as needed basis. An initial assessment will be conducted and individual learning needs identified. Students are coached to perform common number operations, conversion imperial/ metric and accurate measuring, as well as being able to solve trade related problems using basic algebra and trigonometry. On completion of the course students will be able to perform the basic mathematical skills and applications typically used within the welding trade.