

STRUCTURAL AND PIPE WELDING PROGRAM SYLLABUS ELITE WELDING ACADEMY

Term 1 Structural and Pipe Welding NCCER Modules and Lab Hours

29101-09 Welding Safety (10 class hours)

Covers safety equipment, protective clothing, and procedures applicable to the cutting and welding of metals.

29102-09 Oxyfuel Cutting (6 class hours / 10 lab hours)

Explains the safety requirements for oxyfuel cutting. Identifies oxyfuel cutting equipment and setup requirements. Explains how to light, adjust, and shut down oxyfuel equipment. Trainees will perform cutting techniques that include straight line, piercing, bevels, washing, and gouging.

29105-09 Base Metal Preparation (4 class hours / 7.5 lab hours)

Describes how to clean and prepare all types of base metals for cutting or welding. Identifies and explains joint design and base metal preparation for all welding tasks

29107-09 SMAW – Equipment and Setup (3 class hours / 2 lab hours)

SMAW and welding safety. Explains how to connect welding current and set up arc welding equipment and explain the tools used

29108-09 SMAW – Electrodes and Selection (2.5 class hours)

Explains electrode characteristics and different types of filler metals. Describes the role of the American Welding Society (AWS) and the American Society of Mechanical Engineers (ASME). Explains proper storage and control of filler metals and identifies the use of codes.

29109-09 SMAW – Beads and Fillet Welds (5 class hours / 115 lab hours)

Describes the preparation and setup of arc welding equipment and the process of striking an arc. Explains how to detect and correct arc blow. Describes how to make stringer, weave, over-lapping beads, and fillet welds.

29112-09 SMAW – Open V-Groove Welds (4 class hours / 76 lab hours)

Explains open V-groove welds and how to set up welding equipment for making open V-groove welds. Provides procedures for making flat, horizontal, vertical, and overhead open V-groove welds.

**HANDS ON WELDING TEST: Structural Plate Test, Open-V Groove 3/8” plate – 3G and 4G
(5 hours practice and testing) Total Class Hours – 34.5 Total Lab Hours – 215.5 Total Clock Hours for Term I - 250**