

## Welding Certification

COURSE NUMBER	COURSE NAME	COURSE DESCRIPTION
WLD1-0000 WLD2-0000 WLD3-0000 WLD4-0000	Employability	Learners will gain and practice the basic skills necessary to find and maintain a job throughout the course.
WLD1-0100	Introduction to Welding	This course is designed to orient the student for entry into their welding course of study. Students will complete all required forms, read and interpret the Knox Technical Center Student Handbook. The course will provide a review of basic arithmetic skills and prepare the student with a solid understanding of the essential math functions needed. Basic explanation of the use of bench tools as related to welding. The student will identify the correct tool and the proper use of the tools. The course provides an explanation of precision and non-precision measurement and explores the proper measuring techniques used to achieve accurate measurements followed by the proper use and care of measurement instruments. Introduction to the basic skills required for visualizing and interpreting industrial blueprints. The course identifies general safety considerations that apply to welding and metal cutting. It describes the steps that must be taken to avoid job-related deaths and injuries while establishing and maintaining a safe work environment. This course matches requirements as established by American Welding Society (AWS).
WLD1-0200	Welding Fundamentals & Terminology	Topics include concepts of safety in the welding shop; welding joints, positions, and symbols; welding and cutting processes; base metal prep; fabrication fundamental techniques; and blue print reading.
WLD1-0300	Shielded Metal Arc Welding	This course is designed to cover shielded metal arc welding (SMAW) safety, types of SMAW equipment, and how to set up SMAW equipment for use. This course matches requirements as established by American Welding Society (AWS).
WLD2-0100	Gas Metal Arc Welding	This course will enable the student to recognize and apply proper fundamentals of Gas Metal Arc Welding (GMAW). The student will accomplish the following: explain the GMAW; demonstrate the safe and correct set up of the GMAW workstation; correlate GMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes in the flat and horizontal positions; produce basic GMAW welds on selected weld joints; and conduct visual inspection of GMAW welds. Safety practices are emphasized. This course matches requirements as established by American Welding Society (AWS).
WLD2-0200	Plasma Arc/Air Carbon Arc Operations	This course is designed to describe plasma arc cutting equipment; safe work area preparation; plasma arc cutting methods for piercing, slotting, squaring, and beveling metals; and proper storage and housekeeping.
WLD3-0100	Gas Tungsten Arc Welding	This course will enable the student to recognize and apply proper fundamentals of Gas Tungsten Arc Welding (GTAW). The student will accomplish the following: explain the GTAW process; demonstrate the safe and correct set up of the GTAW workstation; relate GTAW electrode and filler metal classifications with base metals and joint criteria; demonstrate proper electrode and filler metal selection and use based on metal types and thicknesses; build pads of weld beads with selected electrodes and filler material in the flat and horizontal position; perform basic GTAW welds on selected weld joints; and perform visual inspection of GTAW welds. Safety practices are emphasized. This course matches requirements as established by American Welding Society (AWS).
WLD3-0200	OSHA-10/Environmental	This course is designed to provide the student with training in the OSHA 10 guidelines. This course is mandatory for students enrolled in Knox Technical Center industrial/construction programs. This course is also available as a standalone course for any audience.  This course matches requirements as established by Occupational Safety and Health Administration (OSHA) guidelines.
WLD4-0100	SMAW Pipe Welding Introduction	This course will enable the student to develop proficiency in various procedures of pipe welding and fitting, as well as expose the student to cutting, beveling, preparation, and fit-up of pipe prior to the welding process. The student will also be exposed to pipe saddling and fitting. Safety practices will be emphasized. This course matches requirements as established by American Welding Society (AWS).
WLD4-0200	Work-Based Learning	This is a project-based course carried out on site. Students are involved in projects carried out for the public that require hands-on skill and critical thinking.  Work-based learning activities extend the classroom into the workplace, connecting acquired knowledge and skills to a student's future employment.
WLD4-0400	AWS Practice and Testing	The American Welding Society (AWS) has developed a program for certifying welders to national standards that is recognized by many industries. The testing procedure requires you to make a weld under supervision that is then tested by an inspector, to ensure the weld conforms to a particular Code, Standard, or written Welding Procedure Specification. Testing methods include Visual Inspection, and may involve either Destructive or Non-Destructive Testing.