

WELD – Welding

WELD 1000 - Introduction to Welding Technology
3.000 Credits

Provides an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Topics include industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards.

WELD 1010 - Oxyfuel Cutting
3.000 Credits

Introduces fundamental principles, safety practices, equipment, and techniques necessary for metal heating and oxyfuel cutting. Topics include metal heating and cutting principles, safety procedures, use of cutting torches and apparatus, metal heating techniques, metal cutting techniques, manual and automatic oxyfuel cutting techniques, and oxyfuel pipe cutting. Practice in the laboratory is provided.

WELD 1030 - Blueprint Reading for Welding Technology
3.000 Credits

This course introduces the knowledge and skills necessary for reading welding and related blueprints and sketches. An emphasis is placed on identifying types of welds, and the associated abbreviations and symbols.

WELD 1040 - Flat Shielded Metal Arc Welding
4.000 Credits

This course introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in flat positions. Qualification tests, flat position, are used in the evaluation of student progress toward making industrial welds.

WELD 1050 - Horizon Shielded Metal Arc Welding
4.000 Credits

Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the horizontal position. Qualification tests, horizontal position, are used in the evaluation of student progress toward making industrial standard welds. Topics include horizontal SMAW safety and health practices, selection and applications of electrodes, selection and applications for horizontal SMAW, horizontal SMAW joints, and horizontal SMAW to specification.

WELD 1060 - Vertical Shielded Metal Arc Welding
4.000 Credits

Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the vertical position. Qualification tests, vertical position, are used in the evaluation of student progress toward making industrial standard welds. Topics include vertical SMAW safety and health practices, selection and applications of electrodes for vertical SMAW, vertical SMAW joints, and vertical SMAW to specification.

WELD 1070 - Overhead Shielded Metal Arc Welding
4.000 Credits

Introduces the major theory, safety practices, and techniques required for shielded metal arc welding (SMAW) in the overhead position. Qualification tests, overhead position, are used in the evaluation of student progress toward making industrial standard welds. Topics include overhead SMAW safety and health practices, selection and applications of electrodes for overhead SMAW, overhead SMAW joints, and overhead SMAW to specification.

WELD 1090 - Gas Metal Arc Welding
4.000 Credits

Provides knowledge of theory, safety practices, equipment and techniques required for successful gas metal arc welding. Qualification tests, all positions, are used in the evaluation of student progress toward making industrial standard welds. Topics include GMAW safety and health practices; GMAW theory, machines, and set up; transfer modes; wire selection; shielded gas selection; and GMAW joints in all positions.

WELD 1110 - Gas Tungsten Arc Welding
4.000 Credits

Provides knowledge of theory, safety practices, inert gas, equipment, and techniques required for successful gas tungsten arc welding. Qualification tests, all positions, are used in the evaluating of student progress toward making industrial standard welds. Topics include GTAW safety and health practices; shielding gases; metal cleaning procedures; GTAW machines and set up; selection of filler rods; GTAW weld positions; and production of GTAW beads, bead patterns, and joints.

WELD 1120 - Preparation for Industrial Qualifications
3.000 Credits

Prerequisites: WELD 1040; WELD 1070; WELD 1090; WELD 1110

Introduces industrial qualification methods, procedures, and requirements. Students are prepared to meet the qualification criteria of selected national welding codes and standards. Topics include test methods and procedures, national industrial codes and standards, fillet and groove weld specimens, and preparation for qualifications and job entry.

WELD 1150 - Advanced Gas Tungsten Arc Welding
3.000 Credits

Prerequisites: WELD 1000

Provides knowledge of theory, safety practices, inert gas, equipment, and techniques required for successful advanced gas tungsten arc welding (GTAW). Qualification tests, all positions, are used in the evaluation of student progress toward making advanced level industrial standard welds. Topics include GTAW safety and health practices; shielding gases; metal cleaning procedures; GTAW machines and equipment set up; selection of filler rods; GTAW weld positions; and advanced production of GTAW beads, bead patterns, and joints.

WELD 1151 - Fabrication Processes
3.000 Credits

Prerequisites: WELD 1030

Presents practices common in the welding and metal fabrication industry. Topics include metal fabrication safety and health practices and metal fabrication procedures.

WELD 1152 - Pipe Welding
3.000 Credits

Prerequisites: Regular Status

Provides the opportunity to apply skills to pipe welding operations. Topics include pipe welding safety and health practices, pipe welding nomenclature, pipe layout and preparation, pipe joint assembly, horizontal welds on pipe (2G), vertical welds on pipe (5G), and welds on 45 degree angle pipe (6G).

WELD 1153 - Flux Cored Arc Welding
4.000 Credits

Prerequisites: WELD 1000

Provides knowledge of theory, safety practices, equipment, and techniques required for successful flux cored arc welding (FCAW). Qualification tests, all positions, are used in the evaluation of student progress toward making industrial standards welds. Topics include FCAW safety and health practices, FCAW theory, machine set up and operation, shielded gas selection, and FCAW joints in all positions.

WELD 1154 - Plasma Cutting
3.000 Credits

Prerequisites: WELD 1000

Provides knowledge of theory, safety practices, equipment, and techniques required for plasma cutting. Topics include safety practices, plasma torch and theory, plasma machine set up and operation, and plasma cutting techniques.

WELD 1330 - Metal Welding and Cutting Techniques
2.000 Credits

This course provides instruction in the fundamentals of metal welding and cutting techniques. Instruction is provided in safety and health practices, metal fabrication preparation, and metal fabrication procedures.