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## Welding

### WELD 120 Oxy Acetylene and Safety

None Prerequisite: INDU 155 OSHA 10 General Industry or concurrently enrolled

Credit Hours: 3

Skills to be obtained include, but are not limited to, oxyacetylene welding, cutting, and repair. Safety will be emphasized along with interpreting safety rules for using Oxy-Acetylene equipment. This class will include extensive studies in the technology of systems used in today's field of welding-manufacturing, construction, power/energy, transportation, fabrication, and piping processes. The format is lecture, demonstration, student application, and evaluation.

### WELD 130 Gas Tungsten Arc Welding Reading

Prerequisite: INDU 155 OSHA 10 General Industry or concurrently enrolled

Credit Hours: 3

This course is a lab course designed to give students practical work experience in Gas tungsten Arc Welding (GTAW or TIG). Students will learn to properly set up and operate TIG welding equipment to weld in all positions on pipe.

### WELD 140 Shielded Metal Arc Welding

Prerequisite: INDU 155 OSHA 10 General Industry or concurrently enrolled

Credit Hours: 3

Through classroom and/or lab/shop learning and assessment activities, students in this course will: describe the Shielded Metal Arc Welding process (SMAW); demonstrate the safe and correct set up of the SMAW workstation; associate SMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and perform basic SMAW welds on selected weld joints; and perform visual inspection of welds.

### WELD 160 Gas Metal Arc Welding

Prerequisite: INDU 155 OSHA 10 General Industry or concurrently enrolled

Credit Hours: 3

This course is a lab course designed to give students practical work experience in Gas Metal Arc Welding. Students will study the various components of this welding process, will learn to properly set up and operate MIG welding equipment to weld 1F, 1G, 2F, and 2G positions and produce quality pipe welds.

### WELD 180 Pipe Layout and Blueprint Reading

Prerequisite: INDU 155 OSHA 10 General Industry or concurrently enrolled, WELD 130 Gas Tungsten Arc Welding, WELD 140 Shielded Metal Arc, WELD 160 Gas Metal Arc Welding

Credit Hours: 3

This course is a study of industrial production and fabrication of piping formations and processes. Emphasis is placed on terminology, symbols, and industry standard welding processes. Students will demonstrate the ability to interpret plans and drawings used in industry and the application of fabrication and layout skills.

### WELD 210 Advanced Gas Tungsten Arc Welding

Prerequisite: Level I Certification or instructor permission

Credit Hours: 4

Through classroom and/or lab/shop learning and assessment activities, students in this course will: explain the gas tungsten arc welding process (GTAW or TIG); demonstrate the safe and correct set up of the TIG workstation; relate TIG electrode and filler metal classifications with base metals and joint criteria; build 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 vertical position; build pads of weld beads with selected electrodes and filler material in the overhead position; perform basic TIG welds on selected weld joints; and perform visual inspection of TIG welds.

**WELD 220 Advanced Gas Metal Arc Welding**

Prerequisite: Level I Certification or instructor permission

Credit Hours: 4

Through classroom and/or shop/lab learning assessment activities, students in this course will: explain gas metal arc welding process (GMAW or MIG); demonstrate the safe and correct set up of the MIG workstation.; correlate MIG 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 vertical position; build pads of weld beads with selected electrodes in the overhead position; produce basic MIG welds on selected weld joints; and conduct visual inspection of MIG welds.

**WELD 240 Advanced Shielded and Metal Arc Welding**

Prerequisite: Level I Certification or instructor permission

Credit Hours: 4

Through classroom and/or lab/shop learning and assessment activities, students in this course will: describe the Shielded Metal Arc Welding process (SMAW); demonstrate the safe and correct set up of the SMAW workstation; associate SMAW electrode classifications with base metals and joint criteria; demonstrate proper electrode selection and use based on metal types and thickness; build pads of weld beads with selected electrodes in the vertical position; build pads of weld beads with selected electrodes in the overhead position; perform basic SMAW welds on selected weld joints; and perform visual inspection of welds.

**WELD 260 Specialized Welding**

Prerequisite: WELD 210, WELD 220, and WELD 240, or instructor permission

Credit Hours: 4

Through classroom and/or lab/shop learning assessment activities, students in this course will: demonstrate skill learned in the previous beginning and advanced classes by demonstrating knowledge of GTAW, BMAW, SMAW, oxy-acetylene, and weld symbols. Students will be able to take a blueprint and create a finished project using any or all welding processes and positions. The project will either be assigned by the instructor or proposed and permitted by the instructor.