WELD COURSE STUDENT LEARNING OUTCOMES.

WELD 101 - Basic Metals

Students will be able to identify safety procedures, material selection and consumables used in the set-up and use of the OFC and GMAW processes.

Students will be able to use basic machining skills to produce predetermined projects using a milling machine, lathe, and a drill press.

Students will will be able to use basic welding skills to produce welds using OFW and GMAW processes.

WELD 198 - Special Topics in Welding

CSLOs are under review.

WELD 205 - CNC PAC I

CSLOs are under review.

WELD 206 - CNC PAC I Practice

CLSOs are under review.

WELD 211 - Welding I

Students will be able to identify safety procedures, material selection and consumables used in the set-up and use of the OFC and SWA processes.

Students will be able to safely set-up and use the required equipment to produce cuts that comply with AWS industry standards using the OFC process.

Students will be able to safely set-up and operate the required equipment and select the appropriate material and consumables to produce filet welds and groove welds, from a basic drawing, using the SMAW process, in compliance with AWS standards.

Students will be able to use multiple modes of communication during class, lab, and during group projects/presentations, to enhance effectiveness in the workplace.

Students will be able to add, subtract, multiply and divide whole numbers, common fractions and decimal fractions, use units correctly and convert between metric and standard units of measure to solve technical problems.

WELD 212 - Welding I Practice

Students will be able to produce cuts that comply with AWS industry standards using the OFC process.

Students will be able to produce flat and horizontal Fillet and Groove welds that comply with AWS industry standards using the SMAW process.

Students will be able to use common hand tools (i.e. Tape measure, Adjustable Ruler, Square, Calculator etc.) to solve applied technical mathematic problems.

Students will be able to use multiple modes of communication during class, lab, and during group projects/presentations, to enhance effectiveness in the workplace.

WELD 215 - Introduction to Welding Fabrication Techniques

Students will be able to plan their work prior to fabrication.

Students will be able to identify and solve common math problems.

Students will be able to safely set-up and use the required equipment for metal fabrication.

Students will be able to identify fit-up techniques for metal fabrication.

Students will be able to identify finish techniques for metal fabrication.

WELD 221 - Welding II

Students will be able to use safe practices and proper use of personal protective clothing and equipment without direct supervision.

Students will be able to safely set up and use SMAW equipment and accessories to produce high quality welds on low carbon steel in the vertical and overhead positions in compliance with AWS standards.

Students will be able to use multiple modes of communication during class, lab, and during group projects/presentations, to enhance effectiveness in the workplace.

Students will be able to use geometric measurements, calculate percentages, and calculate weight and volume of regular or irregular shapes of material.

WELD 222 - Welding II Practice

Students will be able to produce vertical and overhead Fillet and Groove welds that comply with AWS industry standards using the SMAW process.

Students will be able to utilize multiple modes of communication during class, lab, and during group projects/presentations, to enhance effectiveness in the workplace.

Students will be able to use common hand tools (i.e. Tape measure, Adjustable Ruler, Square, Calculator etc.) to solve applied technical mathematics problems.

WELD 225 - Independent Study

Students will be able to demonstrate skill level advancement in the selected process or processes.

WELD 231 - Welding III

Students will be able to identify safety procedures, material selection and consumables used in the set-up and execution of the GMAW and FCAW processes.

Students will be able to set-up and operate the required equipment; select the appropriate material and consumables; and follow a basic, industry-standard drawings to produce Fillet welds and Groove welds using the GMAW and FCAW processes.

Students will be able to demonstrate the ability to produce Fillet welds and Groove welds in compliance with American Welding Society (AWS) Code using the GMAW and FCAW processes.

WELD 232 - Welding III Practice

Students will be able to complete a series of predetermined projects designed to develop the skills necessary to produce Fillet and Groove welds that comply with AWS industry standards using the GMAW process.

Students will be able to complete a series of predetermined projects designed to develop the skills necessary to produce Fillet and Groove welds that comply with AWS industry standards using the FCAW process.

WELD 241 - Welding IV

Students will be able to safely set up and use GTAW equipment and accessories to produce high quality welds in all positions on ferrous materials.

Students will be able to safely set up and use GTAW equipment and accessories to produce high quality welds in the flat and horizontal positions on nonferrous materials.

WELD 242 - Welding IV Practice

Students will be able to complete a series of predetermined projects designed to develop skills necessary to produce welds that comply with AWS industry standards using the GTAW process on ferrous materials.

Students will be able to complete a series of predetermined projects designed to develop skills necessary to produce welds that comply with AWS industry standards using the GTAW process on nonferrous materials.

WELD 250 - Welding Certification Preparation

Students will be able to demonstrate skill level advancement in the selected process or processes.

Students will be able to take a Welder Certification Test in accordance with the selected code.

WELD 255 - CNC PAC II

CSLOs are under review.

WELD 256 - CNC PAC II Practice

CSLOs are under review.

WELD 290 - Internship in Welding

CSLOs are under review.