WELDING PROCESS TECHNOLOGY (WPT)

WPT 110 - Oxy-Fuel Process & Thermal Cutting
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
This course is designed for Welding students pursuing job skills or transferring into a Welding Degree program. Topics include oxyacetylene welding in the flat, horizontal, and vertical positions; oxy-acetylene cutting, and oxy-acetylene brazing. This course also introduces students to basic Plasma Arc Cutting (PAC). Students learn safety and theory as well as develop their proficiency in these operations. This skill development course is the prerequisite for WPT 120. Group 2 course. Quantitative Reasoning.

WPT 111 - Welding Theory I
Credit Hours: 3, **Contact Hours: 3**
Division: Technical
First level lecture for all students enrolled in a Welding Technology Degree or Certificate Program. Course will cover theory and technique for Shielded Metal Arc Welding, and Oxy Fuel Processes for welding, brazing, and cutting. Group 2 course. Critical Thinking - Direct.
Corequisites: WPT 112

WPT 112 - Welding Lab I
Credit Hours: 4, **Contact Hours: 8**
Division: Technical
First level lab for all students enrolled in a Welding Technology Degree or Certificate Program. Practical application of Shielded Metal Arc Welding and Oxy Fuel Processes for welding, brazing, and cutting. Group 2 course. Quantitative Reasoning.
Corequisites: WPT 111

WPT 113 - Welding Theory II
Credit Hours: 3, **Contact Hours: 3**
Division: Technical
Second level lecture for all students enrolled in a Welding Technology Degree or Certificate Program. Course will cover theory and technique for Gas Metal Arc Welding, Gas Tungsten Arc Welding, and Arc Cutting Processes. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT 111

Corequisites: WPT 114

WPT 114 - Welding Lab II
Credit Hours: 4, **Contact Hours: 8**
Division: Technical
Second level lab for all students enrolled in a Welding Technology Degree or Certificate Program. Practical application of Gas Metal Arc Welding, Gas Tungsten Arc Welding, and Plasma Arc Cutting. Welds will be performed in all positions and subjected to destructive quality testing. Group 2 course.
Required Prerequisite(s): WPT 111 and WPT 112

Corequisites: WPT 113

WPT 120 - GTAW (TIG) Welding I
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides the student with the opportunity to learn and apply the theory of basic Gas Tungsten Arc Welding (GTAW) techniques on ferrous and non-ferrous metals in the flat and horizontal positions. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT 110

WPT 121 - GTAW (TIG) Welding II
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides students the opportunity to learn and apply welding techniques using the Gas Tungsten Arc Welding (GTAW) process on ferrous metals and aluminum on complex joints and in the vertical position. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT120

WPT 130 - SMAW (ARC) Welding I
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
This course is designed for students pursuing job skills or transfer into a Welding degree program. Students learn theory and application of safe Shielded Metal Arc Welding (SMAW) in the flat and horizontal positions. They develop skills with "fast freeze" and "low hydrogen" type electrodes. Topics include welding terminology, electrical theory as it relates to SMAW, weld defects and quality, and the American Welding Society SMAW filter material numbering system. Group 2 course. Critical Thinking - Direct.

WPT 131 - SMAW (ARC) Welding II
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
This course provides the student with advanced theory and application of Shielded Metal Arc Welding (SMAW) techniques in the flat, horizontal and vertical positions using "fast freeze" and "low hydrogen" electrodes. Topics include weld quality, inspection, power sources, and troubleshooting. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT130

WPT 140 - GMAW (MIG) Welding I
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides the student an opportunity to learn the theory and application of basic Gas Metal Arc Welding (GMAW) techniques on ferrous metals. Group 2 course. Quantitative Reasoning.

WPT 141 - GMAW (MIG) Welding II
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides students the opportunity to learn and apply safe welding techniques using the Gas Metal Arc Welding (GMAW) process on ferrous and non-ferrous metals on advanced joint designs and welding positions. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT140

WPT 142 - Flux Cored Arc Welding
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides students the opportunity to learn and apply safe welding techniques using the Flux Cored Arc Welding (FCAW) process. Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT140

WPT 160 - Weld. Qualification Prep-SMAW
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Shielded Metal Arc Welding (SMAW). Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT131

WPT 160A - Weld. Qualification Prep-GMAW
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Gas Metal Arc Welding (GMAW). Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT141

WPT 160B - Weld. Qualification Prep-GTAW
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Gas Tungsten Arc Welding (GTAW). Group 2 course. Quantitative Reasoning.
Required Prerequisite(s): WPT121

WPT 160C - Weld. Qualification Prep-FCAW
Credit Hours: 2, **Contact Hours: 3**
Division: Technical
This course provides experienced welders/students the opportunity to take the AWS welder qualification tests in Flux Cored Arc Welding (FCAW). Group 2 course. Critical Thinking - Direct.
Required Prerequisite(s): WPT142

WPT 161 - Welding Qualification Prep
Credit Hours: 3, **Contact Hours: 4**
Division: Technical
Students will learn performance qualification according to American Welding Society (AWS) standards. As part of this course, students may earn various qualifications according to AWS standards adhering to D1.1 (steel) and D1.2 (aluminium) covering multiple processes. Group 2 course. Prerequisites: None. Critical Thinking - Direct.

WPT 210 - Welding Fabrication and Repair
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
This course provides students an opportunity to apply the process-specific welding skills that they have previously mastered to complete fabrication and repairs projects. In addition to welding, students will learn shop metal identification, how to set up and operate shop metal prep and fabricating equipment as well as plan, sketch, order and prepare for a variety of projects. Group 2 course. Critical Thinking - Direct.
Required Prerequisite(s): WPT 113 or WPT 114 with a 2.0 or higher or extensive welding experience, verified by welding skill demonstration test.

WPT 211 - Welding Fabrication I
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
First level fabrication class for all students enrolled in the Welding Technology A.A.S. program. Students will learn to apply manufacturing principles and techniques in order to complete assemblies to print specifications. Proper use of common industrial tools and machinery, including CNC cutting table, will be stressed. Group 2 course. Critical Thinking - Direct.
Required Prerequisite(s): WPT 113, WPT 114

WPT 212 - Welding Fabrication II
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
Second level fabrication class for all students enrolled in the Welding Technology A.A.S. program. Students will take control of a fabrication project from the planning to finishing stages. Emphasis on design, project planning, and efficient execution. Group 2 course. Critical Thinking - Direct.
Required Prerequisite(s): WPT 211

WPT 213 - Weld Quality Testing
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
Class to cover theory and practical use of common methods of non-destructive examination. Processes include dye penetrant, ultrasonic, and magnetic particle. Familiarity with prevalent AWS codes and standards will be emphasized. Group 2 course. Critical Thinking - Direct.
Recommended Prerequisite(s): DD 101, DD 110

WPT 260 - Intro to Welding Automation
Credit Hours: 3, **Contact Hours: 5**
Division: Technical
This course provides students an opportunity to learn the theory behind common forms of automation utilized throughout the welding industry. Lab assignments will focus on equipment set-up and operations along with analysis of results. Group 2 course. Critical Thinking - Direct.
Required Prerequisite(s): WPT 113, WPT 114

WPT 290 - Welding Internship
Credit Hours: 2-4, **Contact Hours: 2-4**
Division: Technical
The purpose of the internship is to provide on-the-job training for the student who wishes to pursue a career in a technical field of study. The internship will be customized to meet the learning needs of the student and the job requirements of the sponsoring firm. Students spend 10-15 hours per week in this paid, supervised on-the-job training experience. In addition to the required 50 hours per credit at a work site, students participate in semi-monthly seminars. Students must apply one month prior to the semester in which they will complete the internship. Group 2 course. Communications - Direct.
Required Prerequisite(s): 30 credits of program specific courses with a GPA of 3.0 or higher.

WPT 293 - Welding/Construction Technology Study Abroad
Credit Hours: 1, **Contact Hours: 1**
Division: Technical
In this class, students are provided the opportunity to travel to a specified destination affiliated with the corresponding welding non-trip course. This course will serve to integrate the student learning experience and provide a sense of cultural perspective, diversity and regional awareness. The course is an opportunity for students to explore other areas around the world while applying discipline-specific course content. For a more specific course description, please review the course description of the associated non-trip course. Group 2 course.
Required Prerequisite(s): WPT 114.