

WELDING TECHNOLOGY (WLD)

WLD-100 Welder's Print Reading I

3 credits, Fall/Winter

Provides instruction in reading and interpretation of prints and symbols common in the welding industry. Participants will learn the interpretation and application of basic lines, dimensions, structural shapes, and specifications. Welding symbols and their application to different types of joint configurations will be covered, as well as how to develop basic shop drawings and prints.

WLD-102 Introduction to Welding

2 credits, Fall/Winter/Spring

Designed for the beginner and experimental welder. Includes: oxy-acetylene, stick, wire feed and TIG welding, oxy-acetylene and plasma arc cutting.

WLD-103 Blacksmithing & Traditional Iron Working

2 credits, Fall/Winter/Spring

This course introduces the student to basic blacksmithing techniques and processes, as well as terminology, steel types, heat treating and tool making. Multiple projects allow the student to practice the varied methods of manual metal forming. No welding experience required.

WLD-104 Introduction to CNC Plasma Cutting

2 credits, Not Offered Every Term

Introduces the student to the basics of CNC plasma cutting. Participants will learn set-up and operation procedures for plasma machines and how to operate CNC controller software. Two-dimensional wire frame geometry creation and programming will be used to create projects. This course is recommended for anyone interested in CNC plasma cutting for industry applications or artwork.

WLD-110 Welder Certification

4 credits, Fall/Winter/Spring/Summer

This course provides theory and practical instruction to become a certified welder. Students will choose a welding process (flux core arc welding, shielded metal arc welding, or gas tungsten arc welding) for certification. Material needed for practice welding will be provided. Students will take a welding certification exam at the end of the class. May be repeated for up to 12 credits.

WLD-111 Shielded Metal Arc Welding (Stick)

2-8 credits, Not Offered Every Term

Provides students with the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet and groove welds in all positions with the SMAW process. Oxy-fuel cutting, air carbon arc cutting and gouging will be covered. Welding codes, standards, and specifications will be reviewed. Variable Credit: 2-8 credits.

WLD-111A Shielded Metal Arc Welding (Stick)

4 credits, Not Offered Every Term

The first half of WLD-111 which provides the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet welds in flat and horizontal positions with the SMAW process. Oxy-fuel cutting, air carbon arc cutting and gouging will be covered.

WLD-111B Shielded Metal Arc Welding (Stick)

4 credits, Not Offered Every Term

The second half of WLD-111 which provides the opportunity to acquire additional knowledge and skills needed to perform more advanced fillet and groove welds in vertical and overhead positions with the SMAW process. Welding codes, standards, and specifications will be reviewed. Prerequisites: WLD-111A

WLD-113 Gas Metal Arc Welding/Flux Core Arc Welding (Wirefeed)

1-8 credits, Not Offered Every Term

Provides students with the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet and groove welds in all positions with the Gas Metal Arc and Flux Core Arc Welding processes. Oxy-fuel cutting, and air carbon arc cutting and gouging will be covered. Welding codes, standards and specifications will be reviewed. Variable Credit: 1-8 credits.

WLD-113A Gas Metal Arc Welding/Flux Core Arc Welding (Wirefeed)

4 credits, Not Offered Every Term

The first half of WLD-113 which provides the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet welds in flat and horizontal positions with the Gas Metal Arc and Flux Core Arc Welding processes. Oxy-fuel cutting, air carbon arc cutting and gouging will be covered.

WLD-113B Gas Metal Arc Welding/Flux Core Arc Welding (Wirefeed)

4 credits, Not Offered Every Term

The second half of WLD-113 which provides the opportunity to acquire additional knowledge and skills needed to perform more advanced fillet and groove welds in vertical and overhead positions with the Gas Metal Arc and Flux Core Arc Welding processes. Welding codes, standards, and specifications will be reviewed.

Prerequisites: WLD-113A

WLD-115 Gas Tungsten Arc Welding (GTAW)

1-8 credits, Not Offered Every Term

Provides students with the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet and groove welds in all positions with the Gas Tungsten Arc Welding process. Plasma arc cutting will be covered. Welding codes, standards, and specifications will be reviewed. Variable Credit: 1-8 credits.

WLD-115A Gas Tungsten Arc Welding (GTAW)

4 credits, Not Offered Every Term

The first half of WLD-115 which provides the opportunity to acquire knowledge and skills to set up and operate equipment to perform fillet welds in flat and horizontal positions with the Gas Tungsten Arc Welding (GTAW) process. Plasma arc cutting will be covered.

WLD-115B Gas Tungsten Arc Welding (GTAW)

4 credits, Not Offered Every Term

The second half of WLD-115 which provides the opportunity to acquire additional knowledge and skills needed to perform more advanced fillet and groove welds in vertical and overhead positions with the Gas Tungsten Arc Welding process. Welding codes, standards, and specifications will be reviewed.

Prerequisites: WLD-115A

WLD-150 Welding Processes

4 credits, Fall/Winter/Spring/Summer

Covers oxy-acetylene welding, brazing, cutting, stick welding, wire feed, oxy-fuel and plasma cutting. Includes: safety, electrical fundamentals, routine maintenance, minor repairs, and terms and definitions.

WLD-200 Welder's Print Reading II

3 credits, Not Offered Every Term

Provides instruction in reading and interpretation of prints and symbols common in welding industry. Participants will learn interpretation and application of blueprint views. Includes basic layout techniques and math review. American Welding Society symbols, International Standards Organization symbols, pipe welding symbols, and inspection symbols are covered.

Prerequisites: WLD-100

WLD-203 Blacksmithing & Traditional Iron Working II

2 credits, Fall/Winter/Spring

This course builds on the WLD-103 course and expands on the process of forged metal work. Instruction includes power hammer use, tooling design, traditional joinery, and intermediate projects. Welding experience helpful, but not required.

WLD-210 Pipe Welding

4 credits, Fall/Winter/Spring

Provides beginning theory and practical instruction in the Shielded Metal Arc Welding (SMAW) process on steel plate and pipe. The specific projects include: stringer beads, fillet and groove welds on plate with root and cover proficiency, pipe cutting using the oxy-fuel process, and groove welds on pipes in all positions.

Prerequisites: WLD-111, or WLD-111A and WLD-111B, and WLD-150 or prior experience in SMAW

WLD-211 Advanced Shielded Metal Arc Welding

4 credits, Not Offered Every Term

This course provides the opportunity for students to acquire the knowledge and skills needed to perform quality fillet and groove welds in all positions using the Shielded Metal Arc Welding (SMAW) process. Advanced welding theory and procedures will also be included.

Prerequisites: WLD-111; or WLD-111A and WLD-111B

WLD-212 Shielded Metal Arc Welding Pipe Welding

2-4 credits, Not Offered Every Term

This class is designed to teach students the fundamentals of open root pipe welding. Theory and practical instruction in open root V groove pipe welding using E6010 and E7018 electrodes will be provided. Oxy-fuel pipe cutting is also included. Variable Credit: 2-4 credits. Required: Student Petition.

Prerequisites: WLD-211

WLD-213 Advanced Gas Metal Arc Welding/Flux Core Arc Welding

4 credits, Not Offered Every Term

This course provides the opportunity for students to acquire the knowledge and skills needed to perform quality fillet and groove welds in all positions using the Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW) processes. Advanced welding theory and procedures will also be included.

Prerequisites: WLD-113; or WLD-113A and WLD-113B

WLD-215 Advanced Gas Tungsten Arc Welding

4 credits, Not Offered Every Term

This course provides the opportunity for students to acquire the knowledge and skills needed to perform quality fillet and groove welds in all positions using the Gas Tungsten Arc Welding (GTAW) process. Advanced welding theory and procedures will also be included.

Prerequisites: WLD-115; or WLD-115A and WLD-115B

WLD-250 Welding Fabrication I Beginning Project

4 credits, Not Offered Every Term

This course consists of lecture and lab and provides instruction in fabrication techniques including blueprint reading, layout, sketching, bills of material, job cost calculations, measuring, fitting, cutting and welding. Students will be assigned beginning fabrication projects. The student will be responsible for all aspects of managing the project to successful completion.

Prerequisites: MFG-103 or MFG-111; and WLD-111, WLD-113, or WLD-115

WLD-251 Welding Fabrication II Intermediate Project

4 credits, Not Offered Every Term

This course consists of lecture and lab. Students will use the skills learned in Fabrication I, such as blueprint reading, layout, sketching, bills of materials, job cost calculations, measuring, fitting, cutting and welding, and apply them to more challenging projects. Students will be assigned intermediate fabrication projects. The student will be responsible for all aspects of managing the project to successful completion.

Prerequisites: WLD-250

WLD-252 Welding Fabrication III Advanced Project

4 credits, Not Offered Every Term

This course consists of lecture and lab. Students will use the skills learned in Fabrication I and II, such as blueprint reading, layout, sketching, bills of materials, job cost calculations, measuring, fitting, cutting and welding, and apply them to advanced projects. Students will be assigned advanced fabrication projects. The student will be responsible for all aspects of managing the project to successful completion.

Prerequisites: WLD-251

WLD-261 Welding Special Projects

1-2 credits, Fall/Winter/Spring/Summer

Allows students to improve their welding skills while working on instructor-approved projects. Variable Credit: 1-2 credits. May be repeated for up to 12 credits.

WLD-270 Certified Welding Inspector (CWI) Study

4 credits, Not Offered Every Term

This course provides the instruction and guidance needed for students to apply, study for, and take the AWS CWI exam. A list of study materials, reading assignments, and quizzes will be covered for all three portions of the exam, along with the tools and weld samples used in the practical portion of the exam. Required: Student Petition.

Recommended: At least one year of welding experience

WLD-280 Welding Technology/CWE

1-6 credits, Fall/Winter/Spring/Summer

Cooperative work experience in the welding trades. Worksite to be determined prior to registering for this class. Skills learned from welding classes will be applied while working at a job site. Goals for this class will be established with the company supervisor, instructor, and student. An online seminar is also required to complete this course. Variable Credit: 1-6 credits. May be repeated for up to 9 credits. Required: Student Petition.

Corequisites: CWE-281