

# WLDG - WELDING

<p>WLDG 117 Blueprint Rd &amp; Weld Symbols. <span style="float: right;">3 Credits</span>            Term Typically Offered: Fall            Prerequisite(s): RD 101 and WRIT 104 or appropriate placement score.            Introduces the student to structural steel, piping, and mechanical blueprint reading. Hand sketching of orthographic and isometric drawings are taught along with weld symbols and solid modeling for blueprint design.            Lecture Hours 3            Department: Transportation - COT</p>	<p>WLDG 124 Welding Theory Tech &amp; Safety. <span style="float: right;">3 Credits</span>            Term Typically Offered: Fall            Prerequisite(s): RD 101 and WRIT 104 or appropriate placement score.            Examines and presents welding and shop safety, oxy-fuel safety, base metal preparation, weld quality, SMAW equipment and set-up, electrode selection, and joint design and fit-up. Other topics introduced are air carbon arc cutting, plasma cutting, and beginning pipe welding.            Lecture Hours 3            Department: Transportation - COT</p>	<p>WLDG 154 Metal Fabrication Basics Lab. <span style="float: right;">3 Credits</span>            Term Typically Offered: Spring            Prerequisite(s): WLDG 124, WLDG 117, WLDG 125, WLDG 126, or consent of instructor.            Corequisite(s): WLDG 153.            Uses techniques learned in WLDG 153 to perform layout, cutting and fabrication, fitting, and weld-out procedures applicable to fabricating a finished product or project. Includes the proper use of fabrication equipment and shop practices. Safety, accuracy, quality, and commitment to excellence are emphasized. Semester projects are assigned.            Lab Hours 3            Department: Transportation - COT</p>
<p>WLDG 125 Cut/Shielded Mtl Arc Weld Lab. <span style="float: right;">5 Credits</span>            Term Typically Offered: Fall            Corequisite(s): WLDG 124.            Includes manual and semi-automated oxy-acetylene cutting processes and safety. Shielded Metal Arc Welding with 6010 electrode prepares students for the American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification. In addition, air carbon cutting process, plasma arc cutting process, and equipment set-up are presented. Welding shop safety and quality are emphasized.            Lab Hours 5            Department: Transportation - COT</p>	<p>WLDG 156 Semi-Automatic Welding. <span style="float: right;">2 Credits</span>            Term Typically Offered: Spring            Prerequisite(s): WLDG 124, WLDG 117, WLDG 125, WLDG 126, or consent of instructor.            Prepares and teaches students basic knowledge of Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW), shielded and non-shielded, and GMAW-Pulsed. Equipment needs, set-up, joint design, filler metals, shielding gasses, welding techniques, and safety will be taught.            Lecture Hours 2            Department: Transportation - COT</p>	<p>WLDG 157 Semi-Automatic &amp; SMAW Lab. <span style="float: right;">5 Credits</span>            Term Typically Offered: Spring            Prerequisite(s): WLDG 124, WLDG 125, WLDG 126, or consent of instructor.            Corequisite(s): WLDG 156.            Introduces semi-automatic wire feed processes. This course leads to AWS and ASME certification of plate (all positions) with the SMAW, GMAW, GMAW-P, and FCAW-G and FCAW processes. Safe practices and weld quality are emphasized.            Lab Hours 5            Department: Transportation - COT</p>
<p>WLDG 126 Shielded Metal Arc Welding Lab. <span style="float: right;">4 Credits</span>            Term Typically Offered: Fall            Corequisite(s): WLDG 124.            Continues WLDG 125 which leads the student toward American Welding Society D1.1 and American Society of Mechanical Engineers Section IX structural certification for 6010 and 7018 electrodes in all positions. Equipment set-up, operation, weld quality, and safety are emphasized.            Lab Hours 4            Department: Transportation - COT</p>	<p>WLDG 205 Applied Metallurgy. <span style="float: right;">2 Credits</span>            Term Typically Offered: Fall            Prerequisite(s): Completion of first year of program or consent of instructor.            Introduces the student to weldability of metals, welding metallurgy, welding automation and robotics, and related cutting and welding processes.            Lecture Hours 2            Department: Transportation - COT</p>	<p>WLDG 212 Pipe Welding &amp; Layout. <span style="float: right;">3 Credits</span>            Term Typically Offered: Fall            Prerequisite(s): Completion of first year of program or consent of instructor.            Provides the second year welding student with an introduction to pipe layout, fitting, and welding. Instructs students in piping information, basic pipe layout practices, use of pipe layout tools, and basic pipe welding techniques for 1G rolled position, 2G, 5G, and 6G fixed position using 6010 and 7018 electrodes. Safety, quality, and proper welding techniques according to ASME SEC IX and API 1104 standards are stressed.            Department: Transportation - COT</p>
<p>WLDG 153 Metal Fabrication Basics. <span style="float: right;">3 Credits</span>            Term Typically Offered: Spring            Prerequisite(s): WLDG 124, WLDG 117, WLDG 125, WLDG 126, M 111, or instructor consent.            Corequisite(s): WLDG 154.            Introduces metal fabrication procedures and safe operation of fabrication equipment. Instruction covers operation of shears, press-brakes, ironworkers, punches, drill presses, CNC plasma tables, and CAD software. Common terminology, fabrication theory, material use, and equipment safety are taught.            Lecture Hours 3            Department: Transportation - COT</p>	<p>WLDG 213 Pipe Welding I Lab. <span style="float: right;">5 Credits</span>            Term Typically Offered: Fall            Prerequisite(s): Completion of first year of program or consent of instructor.            Corequisite(s): WLDG 212.            (5 lec/10 lab/wk) Provides students with the practical application of pipe welding and fitup. Students will practice pipe layout, fitting, and welding techniques in the 1G rolled position the 2G, 5G, and 6G fixed position using 6010 and 7018 welding electrodes and semi-automatic wire processes. Quality and safety will be emphasized.            Department: Transportation - COT</p>	

WLDG 215 Gas Tungsten Arc Welding. 5 Credits

Term Typically Offered: Fall

Prerequisite(s): Completion of first year of program or consent of instructor.

Provides an intense course in all aspects of manual gas tungsten arc welding (GTAW). Course covers welding techniques and applications, equipment setup, and procedures for ferrous and non-ferrous metals. Quality and safety will be stressed.

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WLDG 250 Metals Production. 2 Credits

Term Typically Offered: Spring

Prerequisite(s): WLDG 205, WLDG 213, WLDG 215.

2cr. Complete a project from conceptualization to final product that includes creating blueprints, developing bill of materials, and generating cost estimates. The students fabricate the project to print dimensions and tolerances. Students use CAD and other software, math skills, various welding positions, fabrication, and assembly techniques for product completion.

Lab Hours 4

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WLDG 251 Specialty Weld Processes. 5 Credits

Term Typically Offered: Spring

Prerequisite(s): Completion of first year of program, WLDG 213, WLDG 215, and WLDG 205 or instructor's consent.

Provides welding students with the practices and difficulties welding high carbon and low alloy steels, cast iron, stainless steel, and aluminum with SMAW, GTAW, GMAW, and FCAW. Welding safety will be a component of this course.

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WLDG 280 Weld Testing Certification. 2 Credits

Term Typically Offered: Spring

Prerequisite(s): WLDG 205, WLDG 213, WLDG 215.

2cr. Prepares the student for weld testing and certification. Covers destructive and non-destructive testing for weld inspection. Students learn the weld certification process and welding codes governing welding.

Lecture Hours 2

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WLDG 281 Weld Testing Certification Lab. 3 Credits

Term Typically Offered: Spring

Prerequisite(s): WLDG 205, WLDG 213, WLDG 215.

Corequisite(s): WLDG 280.

3cr. Provides students with the opportunity to prepare and practice for plate and pipe tests according to AWS D1.1, API 1104, and ASME Section IX codes and standards.

Lab Hours 6

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WLDG 294 Seminar/Workshop. 1-3 Credits

Provides students an opportunity to investigate intensively topics pertinent to the field of metal fabrication.

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WLDG 298 Internship/Cooperative Educ. 1-9 Credits

(45 hours/credit) Provides university credit for a sophomore work experience in the area of Welding and Metal Fabrication Technology, supervised by faculty. Learning agreement must be completed prior to registration (restricted).

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