

# Welding (WLDG)

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## **WLDG 110. Welding Theory I. 2 Credits.**

An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered. Co-requisite: WLDG 111.

## **WLDG 111. Welding Theory I Practical. 2 Credits.**

An introductory course covering care and use of arc and oxyfuel, and gas metal arc (short circuit) welding equipment, regulators, torches, cylinders, power sources, electrodes, characteristics of operation, welding of steels and special applications. Introduction to techniques of welding mild steel. Mechanical properties of metals and types of joints are also covered. Co-requisite: WLDG 110.

Course Fees: \$110.00

## **WLDG 114. Mig/Tig Welding. 3 Credits.**

Setup and operation of equipment and control of welding variables, types of power sources, and characteristics of operation, shielding gases, filler materials, quality assurance, and weld defects in metal arc welding, gas tungsten arc welding and flux cored arc welding.

Course Fees: \$110.00

## **WLDG 180. Shielded Metal Arc Welding. 3 Credits.**

A continuation of WLDG 110 and 111, additional training in welding horizontal, vertical, and overhead positions of mild steel. Emphasis is placed on alloys and special applications. Prerequisites: WLDG 110 and 111 or consent of instructor.

Course Fees: \$110.00

## **WLDG 186. Welding Qual Test Prep w/Lab. 3 Credits.**

Procedures and development of manual skills necessary to perform welds acceptable under a structural welding code. Prerequisite: WLDG 195 or consent of instructor.

Course Fees: \$110.00

## **WLDG 192. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

## **WLDG 195. Practicum: Welding. 3,6 Credits.**

Additional welding practice offered for student enrollment in welding courses. This course may be repeated for credit. It can be repeated for credit for up to a total of 12 credits. Pass/Fail only.

Course Fees: \$110.00

## **WLDG 260. Repair & Maintenance Welding. 3 Credits.**

Theory and practice in repair and maintenance of commonly used metals using oxygen fuel, shielded metal arc (SMAW), gas metal arc welding (GMAW), and gas tungsten arc (GTAW) welding processes. Students work on practice exercises and "live" projects. Prerequisites: WLDG 110 and 111 or consent of instructor.

Course Fees: \$110.00

## **WLDG 291. Special Topic. 2-4 Credits.**

Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.

## **WLDG 292. Independent Study. 3 Credits.**

Provides an opportunity for students to engage in directed research and study on an individual basis rather than in a formal class environment.

## **WLDG 298. Cooperative Education. 1-12 Credits.**

A planned and supervised work-learning experience in industry, business, government or community service agencies related to the program of study.

Prerequisites: Two semesters of attendance at Montana State University-Northern, approval of advisor, Dean of the College of Technical Sciences, and cooperative education coordinator. Pass/Fail only.

## **WLDG 353. Metal Sculpture. 3 Credits.**

Metal Sculpture is a lecture studio course which is team taught by art and welding faculty. The course examines phases of the creative process from concept to criticism of the finished form. Both abstract and representational sculpture will be examined with emphasis on welded fabrication.

## **WLDG 356. Welding Certificate Procdrs II. 3 Credits.**

Laboratory applications to be taken following WLDG 186. Prerequisite: WLDG 186.

Course Fees: \$110.00

## **WLDG 357. Welding Certificate Procdrs III. 3 Credits.**

Laboratory applications to be taken following WLDG 356. Prerequisite: WLDG 356.

Course Fees: \$110.00

## **WLDG 498. Cooperative Education. 12 Credits.**