WELDING TECHNOLOGY

The Welding Technology program provides specialized training to prepare students for entry-level positions as a welder. All aspects of welding are covered including oxy-acetylene welding and cutting, braze welding, arc welding, gas metal arc welding (GMAW), gas tungsten arc welding (GTAW) and pipe welding.

Graduation Requirements

Certificate in Welding Technology: WorkKeys® scores of level 4 in Reading for Information, Locating Information, and Applied Mathematics; cumulative GPA of 2.0 or higher. A minimum of 6 credits earned toward the certificate must be completed at NMSU or one of its community colleges. If the certificate requires fewer than 6 credits, all credits must be completed at NMSU or one of its community colleges. Individual academic program may have additional requirements.

AAS in Welding Technology: ENGL 1110G Composition I with a C or higher; placement into college-level math and reading courses or completion of developmental courses with a C or higher; cumulative GPA of 2.0 or higher. A minimum of 15 of the 60 credits for the associate's degree must be completed at NMSU or one of its community colleges. Individual academic programs may have additional requirements. TOTAL CREDITS REQUIRED FOR DEGREE: (64)

Welding Technology - Certificate

Gainful Employment Disclosure: Important information about the educational debt, earnings, and completion rates of students who attend this program can be found on the following Gainful Employment Disclosure

Welding Technology - Associate of Applied Science

WELD 100. Structural Welding I
6 Credits (3+6P)
Development of basic skills in SMAW, OFC, and OFW in accordance with the AWS entry-level welder program.

WELD 101. Fundamentals of Welding
3 Credits (3)
Set-up and adjustment of ARC and oxyacetylene equipment. Welding safety procedures and terminology. Skill development in laying weld beads with various patterns, positions, and processes.

WELD 102. Welding Fundamentals
3 Credits (2+2P)
Survey of welding and cutting processes for nonmajors. Classroom instruction and laboratory work with OFC/OFW, SMAW, GMAW, FCAW, and plasma arc cutting.

WELD 105. Introduction to Welding
3 Credits (3)
Welding practices, procedures, and terminology. Welding safety, equipment types, electrode types in usage, joint design and testing procedures.

WELD 110. Blueprint Reading (Welding)
3 Credits (3)
Interpretation of prints related to welding. Emphasis on AWS standard symbols for welding, brazing, and nondestructive examination.

WELD 115. Structural Welding II
6 Credits (3+6P)
Continuation of WELD 100. Emphasis on AWS entry and advanced level welder skills with SMAW, including all-position welding with mild and stainless steel electrodes. Plasma arc and air-carbon arc cutting, metallurgy, heat treatment, and weld defects.
Prerequisite: WELD 100.

WELD 120. Basic Metallurgy
3 Credits (3)
Properties of ferrous and nonferrous materials. Service conditions and heat treatment of metals related to welding trade.
Prerequisites: WELD 100 or consent of instructor.

WELD 125. Introduction to Pipe Welding
3 Credits (2+2P)
Pipe fit-up and welding techniques for pipe fitting and pipe weld joint using SMAW, GMAW, GTAW, and FCAW, 2G welding of pipe. Restricted to: Community Colleges only.
Prerequisite(s): WELD 100, WELD 130, and WELD 140, or consent of instructor.

WELD 126. Industrial Pipe Welding
3 Credits (3)
Enhancement of WELD 125. Development of more advanced pipe welding skills.
Prerequisite(s): WELD 110, WELD 130 and WELD 140.
Corequisite(s): WELD 125.

WELD 130. Introduction to GMAW MIG)
3 Credits (2+2P)
Development of basic skills with gas metal arc welding (MIG) in accordance with AWS entry-level welder objectives. Wire electrodes, shielding/purge gases, and modes of metal transfer.

WELD 140. Introduction to GTAW TIG)
3 Credits (2+2P)
Development for basic skills with gas tungsten arc welding (TIG) in accordance with AWS entry/advanced welder objectives. Welding mild steel, tungsten electrode preparation, filler wire selection, and equipment set-up.

WELD 150. Pipe Welding II
3 Credits (2+2P)
Continuation of WELD 125; with fillet and groove welded joints in a horizontal fixed and 45-degree fixed positions (5-F, 5-G, 6-F, 6-G).
Prerequisite: WELD 125.

WELD 151. Industrial Pipe Welding II
3 Credits (3)
Prerequisite(s): WELD 125 and WELD 126.
Corequisite(s): WELD 150.

WELD 160. Introduction to SAW and FCAW
3 Credits (2+2P)
Submerged arc and flux-cored arc welding. Demonstrations and practice with machine travel submerged arc welding (SAW), flux-cored arc welding (FCAW-G, FCAW-S) on mild steel plate and pipe. Restricted to: Community Colleges only.
WELD 170. Welded Fabrication
3 Credits (1+4P)
Development of fabrication skills including basic layout, measuring, and utilization of various welding processes including out-of-position welding. Use of common shop tools.
Prerequisites: WELD 100, WELD 110, WELD 130, and OETS 104 or OETS 118.

WELD 180. GTAW II
3 Credits (2+2P)
Continuation of WELD 140. Development of more advanced GTAW skills. Emphasis on pipe welding with mild steel, stainless steel, and aluminum.
Prerequisite: WELD 140 or consent of instructor.

WELD 190. Welded Art
3 Credits (1+4P)
Students explore the possibilities of welded art in the form of sculpture, jewelry, furniture and as a framework to support other art media. Offered as an elective for students who wish to create art using welding. May be repeated up to 12 credits. Restricted to Community Colleges campuses only.
Prerequisite(s): WELD 102.

WELD 211. Welder Qualification
6 Credits (3+6P)
Laboratory and classroom instruction on AWS and ASME Welder Performance Qualification Tests. All position plate and pipe techniques and tests for SMAW, GMAW, GTAW, FCAW, and SAW. Nondestructive and destructive examination methods. Basics of welding codes. Restricted to majors.
Prerequisites: OETS 104 or OETS 118; and WELD 100, WELD 110, WELD 120, WELD 130, WELD 140, WELD 160 and WELD 180 or consent of instructor.

WELD 221. Cooperative Experience I
1-6 Credits
Supervised cooperative work program. Student is employed in an approved occupation and supervised and rated by the employer and instructor. Student will meet in a weekly class. Graded S/U. Restricted to majors.
Prerequisites: WELD 100 or WELD 101 and consent of instructor.

WELD 255. Special Problems in Welding Technology
1-6 Credits
Individual studies in areas of welding technology. May be repeated for a maximum of 12 credits.
Prerequisite: consent of instructor.

WELD 295. Special Topics
1-4 Credits
Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.