

WELDING



Welding is an academic discipline concerned with the study of metal fabrication, weld metal transfer and the use of different shielding gases. The skills developed in this discipline will include metallurgy, print reading, design and creation, multi-position welding, weld joint design, use of common welding applications and basic material science.

Career options include positions in construction, manufacturing, metal fabrication, welding related inspection, education, technical sales and artistic welding. A higher degree maybe required to meet minimum job requirements depending on the position.

Transfer requirements in welding are available in the Counseling Center. In all cases, students should consult with a counselor for specific transfer requirements.

Contact Information

Welding Instructor Faculty Contact

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Associate Degree

- Associate of Science in Welding Technology (AS) (<https://catalog.cos.edu/areas-study/welding/associate-science-welding-not-for-transfer-as/>)

Certificate

- Certificate of Achievement in Sanitary Welding Applications (<https://catalog.cos.edu/areas-study/welding/certificate-achievement-sanitary-welding/>)
- Certificate of Achievement in Welding (<https://catalog.cos.edu/areas-study/welding/certificate-achievement-welding/>)

For a complete list of courses and descriptions visit: COURSES (<https://catalog.cos.edu/course-descriptions/>)

WELD 104 Metal Sculpture 3unit(s)

Hours: 3 Lecture/Discussion Hours:
1 Lab

This course in metal sculpture is designed to develop awareness, knowledge, and skills regarding historical and contemporary three dimensional design concepts on a beginning level. The emphasis is on personal expression through a variety of metals and a wide range of possible applications.

WELD 105 Metalcraft Welding & Forging 3unit(s)

Hours: 3 Lecture/Discussion Hours:
1 Lab

Instruction in metalcraft welding and forging techniques, basic tools for welded craft projects and sculpture, theory of abstract shapes and designs, plus principles of using various metal types will introduce the concepts of metal craft welding.

WELD 107 Forging and Wrought Iron 2unit(s)

Hours: 2 Lecture/Discussion Hours:
1 Lab

WELD 107 offers the student both theory and concepts, in addition to the application of artistic metal working. Both the practical and the abstract notions of working hot metal and forging as they are applied to iron sculptures will be covered.

WELD 161 Oxyacetylene Welding 4unit(s)

Hours: 3 Lecture/Discussion Hours:
3 Lab

Introduction to the concepts and interpretation of principles of oxyacetylene welding, braze welding, brazing soldering, flame spraying and flame cutting of common ferrous and non-ferrous sheet, plate and pipe. Properties of ferrous materials and principles of destructive testing of welded materials complete the program.

WELD 162 Shielded Metal Arc Welding 4unit(s)

Hours: 3 Lecture/Discussion Hours:
3 Lab

Introduction to the theory and concepts as applied to shielded metal arc welding. Introduction to modern solid shield technology and ferrous filler metals. Students will learn the theory of ferrous metallurgy and its application to shielded metal arc welding. Once students understand the theory and concepts of shielded metal arc welding, they will move into the application of the principles of position and out of position welding.

WELD 171 Specialty Metals Welding**4unit(s)**Hours: 3 Lecture/Discussion Hours:
3 Lab

The course applies the basic concepts of science to welding specialty metals and non-destructive testing. Theory of electricity, magnetism, atomic structure, and thermodynamics, as used by technicians, are topics covered in this course.

Welding

Huff, Christopher

American Welding Society
Certified Welding Inspector
Certified Welding Educator

WELD 172 Gas Tungsten Arc Welding**4unit(s)**Hours: 3 Lecture/Discussion Hours:
3 Lab

Introduction to the theory and concepts as applied to gas tungsten arc welding. Introduction to modern shielding gas technology, non-ferrous filler metals. Students will learn the theory of ferrous metallurgy and its application to destructive testing of welded materials.

WELD 181 Blueprint Reading/Metallurgy**3unit(s)**

Hours: 3 Lecture/Discussion

This course combines the fundamental concepts and theories of blueprint reading relating to the concepts, as well as the application, of welded assemblies. The theory of ferrous metal identification and the concept of preparation of metal samples for identification prepares students entering the fabrication, construction or welding engineering fields.

WELD 273 Stainless Steel Weld / Repair**4unit(s)**Hours: 3 Lecture/Discussion Hours:
3 Lab

This course is designed to give welding students training in the practice, theory, and skill of welding stainless steel. Both repair and fabrication, as well as concepts to sanitary tube welding and fabrication, will be covered.

WELD 274 Aluminum Welding**4unit(s)**Hours: 3 Lecture/Discussion Hours:
3 Lab

The course is designed to give welding students training in the practice, theory and skill in the welding of aluminum, both repair and fabrication, as well as application to all structural shapes and levels of alloys.

WELD 275 Welding Codes/Certification**4unit(s)**Hours: 3 Lecture/Discussion Hours:
3 Lab

This welding course is for students to perform certification weldments. American Welding Society certifications will be awarded to students who successfully complete the course. Industry standards and principles of inspection criteria will be covered. This course training will teach students the benefits of in-process quality control in the fabrication industry.

WELD 276 Metal Fabrication**3unit(s)**Hours: 3 Lecture/Discussion Hours:
1 Lab

This course is designed for the students to develop the concepts and apply the theories of the skills of a welder fabricator. This is a project-based course that will introduce students to the abstraction of design, layout, pricing and construction of metal projects.