

GAS TUNGSTEN & GAS METAL WELDING – ASSOCIATE IN SCIENCE DEGREE, CERTIFICATE OF ACHIEVEMENT

Top Code:

0956.50

The curriculum prepares students to seek employment in the welding/metal working trades as welders, welder’s helpers, cutting torch operators, or apprentice fitters. The focus of instruction and practical welding experience is on the Shielded Metal Arc Welding (SMAW), semi-automatic Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW) and oxy-acetylene welding, brazing and cutting processes. These processes are used in the aero-space and manufacturing industries.

Welding practice prepares the student for the Structural Steel Groove and Light Gauge Structural Certification. Gas Tungsten Arc Welding (GTAW) will include the welding of steel, aluminum and stainless steel as used in the aero-space industry.

Metal fabrication skills including blueprint reading, shop math, metal fit-up and production welding techniques. Instruction includes structural steel welding codes and welding theory. Students are required to purchase welding materials and protective clothing.

A Certificate of Achievement is awarded upon completion of all required courses with a grade of C or better.

Program Outcomes

- Perform shielded metal arc (SMAW), gas metal arc, gas tungsten arc welding and oxy-acetylene welding and cutting.
- Select appropriate equipment and processes for metal/welding operations and demonstrate safe set-up and operations of welding equipment.
- Evaluate welds to industry standards and prepare inspections reports including welding defects and solutions.
- Fabricate a part from a blueprint including the layout, assembly, cutting of material guided by welding symbols.
- Develop Welding Procedure Specification (WPS) sheet.

Requirements for the Certificate of Achievement

Code	Title	Units
Semester I		
TECH 107A	TECHNICAL CALCULATIONS	3
WELD 200A	INTRODUCTION TO STRUCTURAL WELDING	6
Semester II		
DT 008A	INTRODUCTION TO DIGITAL DESIGN AND FABRICATION	3

WELD 200C	INTRODUCTION TO FABRICATION GMAW & GTAW	6
Total Units		18

Recommended Electives

Code	Title	Units
BIT 010	BASIC COMPUTER KEYBOARDING	1
DT 017	BUILDING DESIGN & CONSTRUCTION TECHNICAL GRAPHICS	3
DT 118	3-DIMENSIONAL BUILDING DESIGN & REPRESENTATION	3
KINA 032A	BEGINNING FITNESS ACTIVITIES	1
WELD 044A	INTRODUCTION TO GAS WELDING	1
WELD 044B	INTRODUCTION TO ELECTRIC ARC WELDING	1
WELD 044C	ADVANCED ARC WELDING, FCAW & SMAW	1
WELD 145	INTRODUCTION TO TIG WELDING	1
WELD 150D	TUNGSTEN INERT GAS (TIG) WELDING	5

Visit the Program Mapper (<https://pasadena-city.programmapper.ws/academics/interest-clusters/35afad1b-8598-4ecf-a320-0ed4834a7df8/programs/0bb0cb23-c5c5-f1df-3ebb-e2bfc6b810f5/>) for a suggested sequence of courses.

General Education Requirements for the Associate in Science Degree

- General Information (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/>)
- PCC Local Gen Ed (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#pcclocaltext>)
- CSU Breadth (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#csubreadthtext>)
- IGETC (<https://curriculum.pasadena.edu/academic-programs-leading-degree-certificate/#igetctext>)

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