# WELDING (WELD)

**WELD 1110 - Occupational Orient and Safety (3 Credit Hours)**
An introduction to the occupation of welding including facility layout, policies, safety, fire prevention and health procedures, information and practice concerning basic safety, safe operation of hand and power tools, materials handling and maintenance of a safe working environment. Students are also introduced to safe welding practices, communication and employability skills, and essential workplace skills.
Prerequisite(s): None
(2/1/3)

**WELD 1120 - Blueprint, Metal & Weld Sym (3 Credit Hours)**
This course provides instruction and review of basic construction mathematics, weld symbol interpretation, reading welding detail drawings, basic metallurgy, metal identification, and heat treatment of metals.
Prerequisite(s): None
(2/1/3)

**WELD 1130 - Welding Inspection & Testing (2 Credit Hours)**
An introduction to codes, standards, and agencies regulating the welding industry, a review of weld quality standards, concepts in proper visual and destructive testing methods, and a study of proper base metal preparation and joint fit-up.
Prerequisite(s): None
(1/1/2)

**WELD 1140 - Electrical Fundamentals (2 Credit Hours)**
An introduction to welding equipment fundamentals of operation, polarity, equipment types, safety and systems setup including welding related equipment connection and a review of tools used in welding procedures.
Prerequisite(s): None
(1/1/2)

**WELD 1210 - Oxyfuel Systems (2 Credit Hours)**
An introduction to the principals of cutting with an Oxyfuel (OFC) apparatus, cylinder and equipment safety, proper handling and setup including practice cutting mild steel using both the manual and machine process.
Prerequisite(s): None
(1/1/2)

**WELD 1310 - Cutting Processes-CAC/PAC (2 Credit Hours)**
An introduction to the principals of safely operating Air Carbon Arc Cutting (CAC-A) and Plasma Arc Cutting (PAC) equipment including practice cutting and gouging ferrous and non-ferrous metals.
Prerequisite(s): None
(1/1/2)

**WELD 1410 - SMAW - BASIC Beads (2 Credit Hours)**
An introduction to the principals of Shielded Metal Arc Welding (SMAW), component and consumable identification including the safe setup of equipment and practice of welding stinger beads, weave beads, and overlapping beads in various positions using various electrodes.
Prerequisite(s): None
(1/1/2)

**WELD 1411 - SMAW - Fillet Weld (3 Credit Hours)**
Safely setup and operate Shielded Metal Arc Welding (SMAW) equipment with practice of single and multi-pass fillet welds in the flat, horizontal, vertical, and overhead positions using various electrodes.
Co-requisite(s): WELD 1410
(0/3/3)

**WELD 1412 - SMAW V Grove BU/Gouge (3 Credit Hours)**
Safely setup and operate Shielded Metal Arc Welding (SMAW) equipment with practice of V-Groove welds with a backing or back gouging in the flat, horizontal, vertical, and overhead positions using various electrodes.
Co-requisite(s): WELD 1411
(0/3/3)

**WELD 1420 - SMAW - V - Groove Open (4 Credit Hours)**
An introduction to the safe setup of equipment and principals of Shielded Metal Arc Welding (SMAW) for open V-Groove welds, joint preparation, proper weld quality, qualification testing, and practice welding open V-Groove welds in the flat, horizontal, vertical, and overhead positions.
Co-requisite(s): WELD 1411
(1/3/4)

**WELD 1510 - SMAW - PIPE 2G (4 Credit Hours)**
An introduction to the safe setup of equipment and principals of Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 2G vertical fixed position, joint preparation, proper weld quality, qualification testing, and practice welding Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 2G vertical fixed position.
Prerequisite(s): None
(1/3/4)

**WELD 1511 - SMAW--Pipe 5G (4 Credit Hours)**
Safely setup equipment and apply principals of Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 5G horizontal fixed position, review joint preparation, review proper weld quality and qualification testing, and practice welding Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 5G horizontal fixed position.
Prerequisite(s): None
(0/4/4)

**WELD 1512 - SMAW--Pipe 6G (4 Credit Hours)**
Safely setup equipment and apply principals of Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 6G - 45° fixed position, review joint preparation, review proper weld quality and qualification testing, and practice welding Shielded Metal Arc Welding of Pipe (SMAW-Pipe) in the 6G - 45° fixed position.
Prerequisite(s): None
(0/4/4)

**WELD 2110 - FCAW - Basic Fillet Welds (3 Credit Hours)**
An introduction to the principals of Flux Core Arc Welding (FCAW), component and consumable identification including the safe setup of equipment and practice of fillet welds in the flat, vertical, horizontal, and overhead positions.
Prerequisite(s): WELD 1110
(1/2/3)

**WELD 2111 - FCAW - Groove Welds (3 Credit Hours)**
Safely setup and operate Flux Core Arc Welding (FCAW) equipment with practice of VGroove welds with a backing or back gouging in the flat, horizontal, vertical, and overhead positions.
Prerequisite(s): WELD 2110
(0/3/3)

**WELD 2112 - FCAW Pipe 5G (4 Credit Hours)**
Safely setup and operate Flux Core Arc Welding pipe (FCAW-Pipe) equipment, proper assembly of a 5G - horizontal fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 5G pipe joint.
Prerequisite(s): None
(1/3/4)

**WELD 2113 - FCAW Pipe 2G (4 Credit Hours)**
Safely setup and operate Flux Core Arc Welding pipe (FCAW-Pipe) equipment, proper assembly of a 2G – vertical fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 2G pipe joint.
Prerequisite(s): None
(0/4/4)

**WELD 2114 - FCAW Pipe 6G (4 Credit Hours)**
Safely setup and operate Flux Core Arc Welding pipe (FCAW-Pipe) equipment, proper assembly of a 6G(R) - 45° fixed position pipe joint with/without a restriction ring, proper weld quality, safe setup of equipment and practice welding a 6G(R) pipe joint.
Prerequisite(s): None
(0/4/4)

**WELD 2210 - GTAW - Basic Multi-Joint (3 Credit Hours)**
An introduction to the principals of Gas Tungsten Arc Welding (GTAW), component and consumable identification including the safe setup of equipment and practice of welding beads (fillet welds), and groove welds in the flat, vertical, horizontal, and overhead positions using carbon steel consumables.
Prerequisite(s): None
(1/2/3)

**WELD 2220 - GTAW - PIPE 5G (4 Credit Hours)**
An introduction to the principals of Gas Tungsten Arc Welding of Pipe (GTAW-Pipe) in the 5G horizontal fixed position, proper assembly of a 5G pipe joint, proper weld quality, safe setup of equipment and practice welding a 5G horizontal fixed position pipe joint.
Co-requisite(s): WELD 2210
(1/3/4)

**WELD 2221 - GTAW - PIPE 2G (4 Credit Hours)**
Safely setup and operate Gas Tungsten Arc Welding Pipe (GTAW-Pipe) equipment, proper assembly of a 2G vertical fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 2G vertical fixed position pipe joint.
Co-requisite(s): WELD 2210
(0/4/4)

**WELD 2222 - GTAW - PIPE 6G (4 Credit Hours)**
Safely setup and operate Gas Tungsten Arc Welding Pipe (GTAW-Pipe) equipment, proper assembly of a 6G - 45° fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 6G - 45° fixed position pipe joint.
Co-requisite(s): WELD 2210
(0/4/4)

**WELD 2230 - GTAW - Aluminum Multi-Joint (3 Credit Hours)**
An introduction to the principles of Gas Tungsten Arc Welding Aluminum (GTAW-A), component and consumable identification including the safe setup of equipment and practice of welding fillet and groove welds in the flat, horizontal, vertical, and overhead positions.
Prerequisite(s): None
(1/2/3)

**WELD 2310 - GMAW - Basic Fillet Weld (3 Credit Hours)**
An introduction to the principals of Gas Metal Arc Welding (GMAW), types of weld transfer, weld quality, and component and consumable identification including the safe setup of equipment and practice of welding fillet welds in the flat, horizontal, vertical, and overhead positions.
Prerequisite(s): None
(1/2/3)

**WELD 2311 - GMAW - Groove Weld (3 Credit Hours)**
Safely setup and operate Gas Metal Arc Welding (GMAW) equipment with practice of open V-Groove welds in the flat, horizontal, vertical, and overhead positions.
Prerequisite(s): WELD 2310
(0/3/3)

**WELD 2320 - GMAW--Pipe 2G (4 Credit Hours)**
An introduction to the principles of Gas Metal Arc Welding of Pipe (GMAW-Pipe) in the 2G vertical fixed position, proper assembly of a 2G pipe joint, proper weld quality, safe setup of equipment, and practice welding a 2G vertical fixed position pipe joint.
Prerequisite(s): None
(1/3/4)

**WELD 2321 - GMAW--Pipe 5G (4 Credit Hours)**
Safely setup and operate Gas Metal Arc Welding pipe (GMAW-Pipe) equipment, proper assembly of a 5G horizontal fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 5G horizontal fixed position pipe joint.
Prerequisite(s): None
(0/4/4)

**WELD 2322 - GMAW--6G (4 Credit Hours)**
Safely setup and operate Gas Metal Arc Welding Pipe (GMAW-Pipe) equipment, proper assembly of a 6G - 45° fixed position pipe joint, proper weld quality, safe setup of equipment and practice welding a 6G - 45° fixed position pipe joint.
Prerequisite(s): None
(0/4/4)

**WELD 2330 - GMAW--Aluminum Multi-Joint (4 Credit Hours)**
An introduction to the principles of Gas Metal Arc Welding Aluminum (GMAW-A), component and consumable identification including the safe setup of equipment and practice of welding beads, fillet welds, and groove welds in the flat, vertical, horizontal, and overhead position.
Prerequisite(s): None
(1/3/4)

**WELD 2991 - Special Projects I (1 Credit Hour)**
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/1/1)

**WELD 2992 - Special Projects IV (2 Credit Hours)**
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(1/1/2)

**WELD 2993 - Special Projects II (2 Credit Hours)**
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/2/2)

**WELD 2994 - Special V (4 Credit Hours)**
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(4/0/4)

**WELD 2995 - Special Projects III (3 Credit Hours)**
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/3/3)

**WELD 2996 - Certification I (4 Credit Hours)**
Prerequisite: Dean of Technical Studies approval. A review of American Welding Society certification requirements, materials and mastered student skills, compare completed records; take an AWS closed book certification exam, and prepare workmanship qualification samples according to the AWS QC10- Entry Level Welder standard
Prerequisite(s): None
(2/2/4)

**WELD 2997 - Practicum (3 Credit Hours)**
A Practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in Practicum do not receive compensation. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/3/3)

**WELD 2999 - Cooperative Education (3 Credit Hours)**
Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Cooperative Education receive compensation for their work. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/3/3)