WELDING (WELD)

WELD 30  Metal Sculpture
2 Units  (Not Degree Applicable, CSU)
(May be taken for option of letter grade or Pass/No Pass)
Lecture: 18  Lab: 54

Welding processes used in the metal sculpting industry to create three-dimensional art forms. Covers design, pre-construction analysis, and cost estimates for projects. Includes use of equipment for oxyfuel welding, gas metal arc welding (GMAW), gas tungsten arc welding (GTAW), shielded metal arc welding (SMAW), and flux-cored arc welding (FCAW). Includes demonstrations and exercises in welding as it relates to the art industry.  
Course Schedule

WELD 40  Introduction to Welding
2 Units  (Degree Applicable, CSU)
Lecture: 18  Lab: 54

Fundamentals of welding processes related to the areas of fabrication, construction, machine tool, aerospace and the transportation industries.  
Course Schedule

WELD 50  Oxyacetylene Welding
2 Units  (Degree Applicable)
Lecture: 18  Lab: 54

Oxyacetylene fusion welding, non-fusion welding and cutting. Develops understanding of and fundamental skills in modern welding practices.  
Course Schedule

WELD 51  Basic Electric Arc Welding
2 Units  (Degree Applicable)
Lecture: 18  Lab: 54
Advisory: WELD 50

Electric arc welding, weld symbols, standard electrode and alloy electrode selection, American Welding Society (AWS) procedure for certification.  
Course Schedule

WELD 53A  Welding Metallurgy
3 Units  (Degree Applicable, CSU)
Lecture: 54

Designed for students seeking a career in welding and welding inspection. Covers structure of matter, chemical, physical, and mechanical properties of metals, principles of alloying, solid state diffusion, plastic deformation, and heat treatment.  
Course Schedule

WELD 60  Print Reading and Computations for Welders
3 Units  (Degree Applicable)
Lecture: 54

Reading prints and performing computations for welding fabrication operations. Interpreting and visualizing prints, title blocks, welding symbols, specifications, notes, and bills of materials. Computations necessary to calculate materials, costs, sizes, and fractional, decimal and metric conversions.  
Course Schedule

WELD 70A  Beginning Arc Welding
3 Units  (Degree Applicable)
Lecture: 18  Lab: 108
Advisory: WELD 70B

Develops manipulative skills and techniques for Shielded Metal Arc (SMAW) and Flux Cored Arc (FCAW) welding processes in the flat and horizontal positions using AC and DC welding currents on carbon steel.  
Course Schedule

WELD 70B  Intermediate Arc Welding
3 Units  (Degree Applicable)
Lecture: 18  Lab: 108
Advisory: WELD 70A

Welding high alloy steel with both Shielded Metal Arc (SMAW) and Flux Core Arc (FCAW) welding processes in the vertical and overhead positions with an introduction to Gas Metal Arc (GMAW) and Gas Tungsten (GTAW) welding.  
Course Schedule

WELD 70C  Certification for Welders
3 Units  (Degree Applicable)
Lecture: 18  Lab: 108
Advisory: WELD 70A

Building construction for the advanced arc welding student. Special emphasis will be placed on welding symbols and the American Welding Society’s (AWS) D1.1 and D1.3.  
Course Schedule

WELD 70A  Beginning Arc Welding
3 Units  (Degree Applicable)
Lecture: 18  Lab: 108
Advisory: WELD 40 and WELD 51 and WELD 70A

Theory and practical applications of welding used in industry and construction. Designed to adapt and upgrade skills to industry standards and develop fabrication skills to supplement and augment welding skills. Includes project models such as ornamental iron gates and fences and material storage components.  
Course Schedule

WELD 80  Construction Fabrication and Welding
3 Units  (Degree Applicable)
Lecture: 18  Lab: 108
Advisory: WELD 70A or WELD 70C

Welding in all positions as applied to the pipe industry. Welding processes include shielded metal arc welding (SMAW), gas tungsten arc welding (GTAW), gas metal arc welding (GMAW), flux cored arc welding (FCAW) using a variety of materials and configurations on subcritical and critical piping and tubing.  
Course Schedule

WELD 90A  Gas Tungsten Arc Welding
3 Units  (Degree Applicable, CSU)
(May be taken for option of letter grade or Pass/No Pass)
Lecture: 18  Lab: 108
Advisory: WELD 70B

Advanced Gas Tungsten Arc Welding (GTAW) or tungsten inert gas (TIG) of steel, aluminum, corrosion resisting steel (CRES), and exotic metals. All position welds with many surfaces and transitions.  
Course Schedule
WELD 90B  Semiautomatic Arc Welding Process  
3 Units (Degree Applicable, CSU)  
(May be taken for option of letter grade or Pass/No Pass)  
Lecture: 18  Lab: 108  
Advisory: WELD 70B  

Semiautomatic Welding Processes including Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Submerged Arc Welding (SAW) with solid and tubular wires with and without gas shielding. All position welds with many varying thickness will be covered.  

Course Schedule  

WELD 91  Automotive Welding, Cutting and Modification  
1 Unit (Degree Applicable)  
(May be taken for option of letter grade or Pass/No Pass)  
Lecture: 18  
Corequisite: WELD 91L  
Advisory: WELD 70B  

Welding and cutting metals used in the automotive industry. Gas Metal Arc (GMAW/MIG), Gas Tungsten Arc (GTAW/TIG), Plasma Arc Cutting (PAC), and Oxy-fuel Cutting (OFC) welding will be covered.  

Course Schedule  

WELD 91L  Automotive Welding, Cutting and Modification Lab  
2 Units (Degree Applicable)  
(May be taken for option of letter grade or Pass/No Pass)  
Lab: 108  
Corequisite: WELD 91 (may have been taken previously)  
Advisory: WELD 70B  

Practical lab applications for sheet metal forming, metal inert gas (MIG), tungsten inert gas (TIG), resistance spot (RSW), and Oxy-fuel welding, plasma arc cutting (PAC) and Oxy-fuel cutting. Includes design, fabrication and assembly of automotive suspension and chassis components.  

Course Schedule  

WELD 96  Work Experience in Welding  
1-4 Units (Degree Applicable)  
(May be taken for Pass/No Pass only)  
Lab: 75-300  
Prerequisite: Compliance with work experience regulations as designated in the college catalog  
Advisory: WELD 70B  

Provides actual on-the-job experience in welding at an approved work site which is related to classroom instruction. A minimum of 75 paid or 60 non-paid clock hours per semester of supervised work is required for each unit of credit.  

Course Schedule