

COURSE DESCRIPTIONS

Course FAB1010: Fabrication Tools & Materials

Students develop knowledge and skills in the use of basic hand tools and materials used in fabrication processes, and safely transform common metals into useful products.

Course FAB1040: Oxyacetylene Welding

Students develop basic skills in the safe handling and operation of oxyacetylene equipment.

Course FAB1048: Semi-Automated/Automated Welding

Students develop basic knowledge and skills related to the use of gas metal arc welding (GMAW) and flux core arc welding (FCAW) processes in both personal use and commercial applications. They also develop introductory knowledge of submerged arc welding (SAW) processes.

Course FAB1050: Basic Electric Welding

Students develop basic skills related to safe use and operation of one or more common electric welding processes.

Course FAB1090: Sheet Fabrication 1 (Hand Processes)

Students use basic tools, materials and processes to fabricate sheet materials into finished products, models or prototypes.

Course FAB1100: Fabrication Principles

Students investigate and apply fundamental principles of fabrication to build an artifact or structure from common structural materials.

Course FAB1110: Bar & Tubular Fabrication

Students use cutting, bending and fastening processes to create a variety of products from bar and tubular stock.

Course FAB1120: Foundry 1 (One-piece Pattern)

Students develop the basic skills required to produce a simple one-piece pattern, a sand mold and a finished casting.

Course FAB1130: Principles of Machining

Students develop basic hand and machine tool knowledge, skills and techniques to mechanically remove materials.

Course FAB1160: Production Systems

Students investigate and compare the principles of production operation and the characteristics of a number of production systems.

Course FAB2010: Structural Engineering

Students investigate the nature of forces and structural materials, and apply their findings to design and fabrication activities.

Course FAB2020: Print Reading

Students develop basic skills in reading and interpreting working drawings to prepare a bill of materials and sequence of operations.

Course FAB2030: Oxyfuel Welding

Students develop basic skills in the safe and efficient use of oxyfuel equipment and supplies to braze and fusion weld.

Course FAB2040: Thermal Cutting

Students develop basic skills to use, safely and efficiently, thermal cutting equipment and supplies.

Course FAB2048: Flux Core Arc Welding 1

Students develop an understanding of the advantages and disadvantages of flux core arc welding (FCAW) processes, and they gain experience using FCAW processes by performing flat, horizontal and vertical fillet welds and flat groove welds.

Course FAB2050: Arc Welding 1

Students develop basic knowledge, skills and attitudes related to the operation and use of shielded metal arc welding (SMAW) equipment and accessories to make a variety of welds in the flat position.

Course FAB2060: Arc Welding 2

Students identify appropriate electrodes, visually assessing a weld, and making the necessary adjustments to improve weld quality while developing horizontal position welding skills.

Course FAB2070: Gas Metal Arc Welding 1

Students develop an understanding of the advantages and disadvantages of gas metal arc welding (GMAW) processes, and they gain experience using GMAW processes by performing flat, horizontal and vertical fillet welds and flat groove welds.

Course FAB2090: Sheet Fabrication 2 (Machine Processes)

Students use basic layout, cutting, bending and fastening operations to transform common types of sheet metals into consumer products.

Course FAB2100: Sheet Fabrication 3 (Parallel Line)

Students expand sheet metal skills related to pattern making, seam constructing and edge treating.

Course FAB2110: Forging Fundamentals

Students determine the effects of heating and striking metal to change its shape and internal structure, using forging techniques.

Course FAB2120: Foundry 2 (Split Pattern)

Students expand their pattern making and foundry skills to produce split pattern molds and finished castings.

Course FAB2130: Precision Turning 1

Students develop basic turning skills to size, shape and finish common machineable metals and plastics.

Course FAB2140: Precision Milling 1

Students develop basic milling skills to shape and finish common machineable metals and plastics.

Course FAB2150: CNC Turning (Computer Numerical Control)

Students develop skills in computer assisted design (CAD) and computer numerical control (CNC) programming to manufacture a product on a CNC lathe.

Course FAB2160: Custom Fabrication

Students work independently, or in a cooperative learning environment, to plan and construct a product/structure that meets a specific client's needs.

Course FAB2170: Pipe Fitting

Students learn about the uses of pipes, basic piping principles and fabrication skills.

Course FAB3010: Materials Testing

Students are introduced to the principles of materials testing, and to the development and evaluation of a mechanical materials test.

Course FAB3020: Metallurgy Fundamentals

Students develop fundamental understandings and skills related to metallurgy, and apply these skills to fabrication processes.

Course FAB3030: Gas Tungsten Arc Welding

Students develop basic knowledge and skills related to the use of gas tungsten arc welding (GTAW) equipment and supplies to weld mild steel in the flat and horizontal positions.

Course FAB3040: Specialized Welding

Students develop specific skills associated with advanced welding techniques to join and repair metals other than low carbon steel.

Course FAB3048: Flux Core Arc Welding 2

Students develop skills to evaluate and improve the quality of flux core arc weldings, and they extend their flux core arc welding (FCAW) skills by performing horizontal and vertical groove welds.

Course FAB3050: Arc Welding 3

Students learn the role of codes and standards in the welding trade, as well as test welds and develop vertical position welding skills.

Course FAB3060: Arc Welding 4

Students apply and extend positional welding skills, by using a variety of common electrodes and thickness of materials.

Course FAB3070: Pipe & Tubular Welding

Students develop specific skills related to pipe layout, preparation of pipe/tube joints and welding techniques.

Course FAB3080: Automated Welding

Students investigate and describe the operation of various manual, semi-automated and automated welding processes and systems used in fabrication industries.

Course FAB3090: Sheet Fabrication 4 (Radial Line)

Students develop specialized skills in cylindrical and conical pattern development and seam construction of ferrous and nonferrous sheet metals.

Course FAB3110: Sheet Fabrication 5 (Duct Components)

Students apply and develop specialized skills in duct component pattern making and fabrication techniques.

Course FAB3120: Foundry 3 (Core Molding)

Students investigate and apply advanced foundry processes to produce a hollow casting, using a sand and core mold.

Course FAB3130: Precision Turning 2

Students develop specialized lathe skills for thread cutting and taper turning techniques.

Course FAB3140: Precision Milling 2

Students develop specialized skills to use vertical and/or horizontal milling machines.

Course FAB3150: CNC Milling (Computer Numerical Control)

Students develop skills in computer numerical control (CNC) programming to manufacture a three-dimensional product.

Course FAB3160: Prefabrication Principles

Students work in a cooperative learning environment to plan and construct a prefabricated product/structure to meet the specific needs of a client.

Course FAB3170: Gas Metal Arc Welding 2

Students develop skills to evaluate and improve the quality of gas metal arc weldings, and they extend their gas metal arc welding (GMAW) skills by performing horizontal and vertical groove welds.