

METAL FABRICATION (457)

457-110 - Integrated Manufacturing Planning - Fabrication Technologies

Students complete a project from concept to the point where a product is designed and its manufacturing process is planned. Emphasizes the project management process, teamwork, problem solving and decision making. It is suggested that the student take 457-111 Integrated Manufacturing Production - Fabrication Technologies in the semester after this course. (Prerequisites: 457-146 Advanced Fabrication Techniques; 457-147 Metallurgy; 457-148 Metal Cutting and Forming Processes)
2 Credit hours
72 Lab hours

457-111 - Integrated Manufacturing Production - Fabrication Technologies

Students will simulate a manufacturing environment by building a workcell, producing a product and performing quality assurance checks. Emphasizes implementation of a project plan, teamwork, problem solving and decision making. (Prerequisite: 457-110 Integrated Manufacturing Planning - Fabrication Technologies)
2 Credit hours
72 Lab hours

457-145 - Fabrication Techniques

Focuses on development of layout and fabrication skills through a sequence of exercises and a final project. Students use equipment including a CNC shear, CNC press brake and CNC cutting table. Student project may incur additional fees. (Prerequisites: Completion of or concurrent enrollment in 442-109 Welding for Fabricators; 623-110 Technical Print Reading)
4 Credit hours
18 Lecture hours
108 Lab hours

457-146 - Advanced Fabrication Techniques

Enhances metal fabrication skills and techniques by developing fixtures, programming CNC press brakes and lasers, and finishing while making a variety of projects. (Prerequisites: 457-145 Fabrication Techniques or 457-345 Metal Fabrication. Completion of or concurrent enrollment in 457-148 Metal Cutting and Forming Processes)
4 Credit hours
18 Lecture hours
108 Lab hours

457-147 - Metallurgy

Provides instruction and information on the basic principles of metals. Explores the behavior of metals and the processes which affect them. Explores the most common metals used in industrial processes.
2 Credit hours
36 Lecture hours

457-148 - Metal Cutting and Forming Processes

Develops knowledge of plasma, laser and water jet cutting systems and forming processes. Safety and maintenance are emphasized as students practice cutting techniques on projects. (Prerequisites: Completion of or concurrent enrollment in 442-331 Welding Print Reading or 623-110 Technical Print Reading; 804-118 Intermediate Algebra with Applications)
3 Credit hours
18 Lecture hours
72 Lab hours

457-345 - Metal Fabrication

Focuses on development of layout and fabrication skills through a sequence of exercises and a final project. Students use equipment including a CNC shear, CNC press brake and CNC cutting table. (Prerequisites: Completion of or concurrent enrollment in 103-159 Computer Literacy - Microsoft Office; 442-331 Welding Print Reading; 442-357 Gas Metal Arc Welding 1 (GMAW 1); 804-360 Occupational Mathematics 1)
4 Credit hours
36 Lecture hours
108 Lab hours

457-351 - Metal Fabrication 1

Focuses on the development of fabrication skills including the fundamentals of measuring, layout, drilling, tapping, applied math and geometry within tolerances. Students use equipment including: shear, saw, roller, drill press, and iron worker. (Prerequisites: Completion of or concurrent enrollment in 442-331 Welding Print Reading; 442-357 Gas Metal Arc Welding 1 (GMAW 1); 804-360 Occupational Mathematics 1)
2 Credit hours
18 Lecture hours
54 Lab hours

457-352 - Metal Fabrication 2

Focuses on advanced development of layout and fabrication skills learned in Metal Fabrication 1. Students will create prints and Bill of Materials for a final project. Students will use equipment including automated cutting and CNC press brake. (Prerequisites: Completion of or concurrent enrollment in 103-159 Computer Literacy - Microsoft Office; 457-351 Metal Fabrication 1)
2 Credit hours
18 Lecture hours
54 Lab hours