Machine Technology

MT 109 Survey of Machining and Manufacturing
4.0 units
Acceptable for credit: Transfer CSU
An introduction to machining and manufacturing technology where students will learn basic tool geometry, blueprint reading, shop math, precision measuring tools, co-ordinate systems and how to safely operate a variety of industrial equipment. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

MT 110 CNC G Code
4.0 units
Acceptable for credit: Transfer CSU
Advisories: MT 109 - Survey of Machining and Manufacturing
This course is designed for students with machine shop experience seeking to learn set-up, operation and programming of computer numerical controlled (CNC) machines. Included is an introduction to Computer Aided Design and Manufacturing (CAD/CAM). (Letter Grade or Pass/No Pass)

MT 111 CNC CAD/CAM
4.0 units
Acceptable for credit: Transfer CSU
Advisories: MT 109 - Survey of Machining and Manufacturing
This course is designed for students with computer numerical controlled (CNC) machining and/or computer-aided design and computer-aided manufacturing (CAD/CAM) experience who wish to learn advanced set-up, operation and programming using CNC machines and CAD/CAM software. (Letter Grade or Pass/No Pass)

MT 112 CNC Multi-Axis
4.0 units
Acceptable for credit: Transfer CSU
Advisories: MT 111 - CNC CAD/CAM
An advanced course in computer numerical controlled (CNC) machining where students will learn to design complex parts using CAD/CAM software and produce them on 4 and 5 axis CNC milling machines and lathes with “live tooling.” (Letter Grade or Pass/No Pass)

MT 113 SolidWorks 1
3.0 units
Acceptable for credit: Non-Transferable
An introduction to three-dimensional computer aided design(CAD/CAM) where students will learn to design complex objects using SolidWorks. At the end of the course, students will be prepared for the Certified SolidWorks Associate (CSWA) assessment. It is recommended that students be capable of using a personal computer and managing computer files. (Letter Grade or Pass/No Pass)

MT 114 SolidWorks 2
3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: N/A
Advisories: MT 113 - SolidWorks 1
An advanced course in three dimensional computer-aided-design (CAD) where students will learn to design complex parts and assemblies using SolidWorks. Students will learn to use SolidWorks to design Weldments, Sheet Metal components and Molds. This course will prepare students for the Certified SolidWorks Professional (CSWA) exam. (Spring) (Letter Grade or Pass/No Pass)

MT 115 Lean Manufacturing
3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: N/A
An introduction to the theory and practice of continuous improvement where students will learn to identify and eliminate waste, improve quality and increase efficiency in every area of manufacturing operations. Students will participate in an actual Kaizen (or continuous improvement) event to make a change for the better in a real world setting. (Fall, Spring) (Letter Grade or Pass/No Pass)

MT 116 Mastercam 1 (CAD/CAM)
3.0 units
Acceptable for credit: Transfer CSU
An introduction to Mastercam, a leading software for computer-aided design/computer-aided manufacturing (CAD/CAM). Students will learn to create lines and arcs, simple surfaces and solids. Students will create tool paths and machine code for CNC lathes, mills and routers. (Fall, Spring) (Letter Grade or Pass/No Pass)

MT 117 Print Reading and Interpretation
3.0 units
Acceptable for credit: Transfer CSU
An introductory class where students will learn to read engineering drawings, evaluate print specifications, recognize orthographic views and visualize the actual objects or projects shown in the illustration. This course is not open to students who are enrolled in or have received credit for AB 330, AT 330, ET 330, MT 330, or AB/AT/ET 117. (Fall, Spring) (Letter Grade or Pass/No Pass)

MT 118 Understanding and Measuring GD and T
3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: N/A
Advisories: MT 117 - Print Reading and Interpretation
An advanced class where students will learn to interpret complex manufacturing specifications, symbols and standards, including those referred to as Geometric Dimensioning and Tolerancing (GD and T). Students will evaluate components using a coordinate measuring machine and learn to generate accurate inspection reports. This course is not open to students who have received credit for MT 331. (Letter Grade or Pass/No Pass)

MT 189 Independent Projects
1.0 - 3.0 units
Acceptable for credit: Transfer CSU
Acceptable for credit: CSU, UC-Determined after admission
Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the

regular curriculum. Enrollment allows students to pursue activities such as directed field experience, research, or development of skills and competencies under faculty advisement and supervision. Independent projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be developed. All contracts for these classes must be completed and submitted to the Records Office no later than the end of the second week of the semester. Students may enroll for any combination (unit value) of Independent Projects 189 and/or 389 for a total of four semesters in a specific discipline. Units are awarded depending upon satisfactory performance and the amount of time committed by the student to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)

MT 300 Shop Math and Measurement

3.0 units

Acceptable for credit: D - Credit - Degree Applicable

An introduction to the mathematics used in the Industrial Technology programs. Students will learn to solve problems using fractions, decimals, percentage, ratios and basic geometric shapes. Students will learn about the Cartesian coordinate system and how to use a variety of basic and precision measuring tools from rulers and tape measures to calipers and micrometers. This course is not open to students who are enrolled in, or have received credit for MT 381, AB 381, AT 381, ET 381, WLDT 381, or AT/AB/ET/WLDT 300. (Fall, Spring) (Letter Grade or Pass/No Pass)

MT 301 Introduction to Safety

2.0 units

Acceptable for credit: D - Credit - Degree Applicable

An introduction to manufacturing safety principles and practices. Students will learn about Material Safety Data Sheets (MSDS), work in confined space, lock out/tag out, zero energy state, hazardous materials, storage of flammable materials, storage of fuel gas and high pressure gas cylinders, portable powered tool safety, hand tool safety, record keeping, training, employer enforcement of safety regulations, and employee right to know. This course will prepare students for the optional Certified Production Technician (CPT) assessment through the Manufacturing Skill Standards Council (MSSC). (Letter Grade or Pass/No Pass)

MT 302 Quality and Process Improvement

2.0 units

Acceptable for credit: -

An introduction to quality practices in manufacturing. Students will learn to read and interpret blueprints, understand Geometric Dimensioning and Tolerancing(GD and T, use essential measuring tools, perform root cause failure analysis, adopt methods of process improvement and employ statistical tools. This course will prepare students for the optional Certified Production Technician (CPT) assessment through the Manufacturing Skill Standards Council (MSSC). (Letter Grade or Pass/No Pass)

MT 303 Manufacturing Processes and Production

2.0 units

Acceptable for credit: D - Credit - Degree Applicable

An introduction to manufacturing procedures, practices and principles. Students will learn about mechanical principles, machining operations and tooling, production materials documentation, manufacturing planning, production control, inventory management and product distribution. This course will prepare students for the optional Certified Production Technician (CPT) assessment through the Manufacturing Skill Standards Council (MSSC). (Letter Grade or Pass/No Pass)

MT 304 Maintenance Awareness

2.0 units

Acceptable for credit: D - Credit - Degree Applicable

An introduction to manufacturing maintenance awareness. Students will learn about basic electrical circuits, electrical, pneumatic and hydraulic power systems, lubrication concepts, bearings, and couplings, belt and chain drives and the concepts of machine control and automation. This course will prepare students for the optional Certified Production Technician (CPT) assessment through the Manufacturing Skill Standards Council (MSSC). (Letter Grade or Pass/No Pass)

MT 305 Select Machine Projects

1.5 units

Acceptable for credit: D - Credit - Degree Applicable

Repeatable: 2.00

Prerequisite: MT 109 - Survey of Machining and Manufacturing

Projects selected by the student upon the recommendation of any faculty member are developed under the direct counseling and guidance of the instructional staff in the Machine Technology disciplines. All work is completed within the machine facilities under the direct supervision of the responsible instructor. The student will develop the skills necessary to complete the project. (Letter Grade or Pass/No Pass)

MT 306 Advanced Machining

1.5 units

Acceptable for credit: D - Credit - Degree Applicable

Advisories: MT 109 - Survey of Machining and Manufacturing

This course will provide advanced training, continuing education and professional development for persons using industrial machine tools. Students will learn safe work habits, advanced set-up strategies and machining fundamentals such as the selection of optimum cutting speeds and feeds. (Letter Grade or Pass/No Pass)

MT 315 Advanced Machining

4.0 units

Acceptable for credit: D - Credit - Degree Applicable

Repeatable: 3.00

Prerequisite: MT 110 - CNC G Code

An individualized course of instruction covering those skills required for employment in a manufacturing machining facility, general machining facility, or a maintenance machining facility. The student will select 4, 8, 12, or 16 units from the appropriate skill cluster table (available in the Counseling Center). (Letter Grade or Pass/No Pass)

MT 370 SkillsUSA

3.0 units

Acceptable for credit: D - Credit - Degree Applicable
Repeatable: 3.00
SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. This SkillsUSA course prepares students for employment and inter-collegiate competition in Career Technical Education. Students will learn to plan projects, work in teams, solicit community support and develop a range of skills valued by employers. Students registered for this class may not register for AB 370, ARCH 370, AT 370, EL 370, ET 370, or WLDT 370 during the same semester. Participation in the SkillsUSA competition is required. This course may be repeated up to three times for credit with different competitions. (Letter Grade or Pass/No Pass)

MT 389 Independent Projects

1.0 - 3.0 units

Acceptable for credit: -
MT 389 Independent Projects is for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, search or development of skills and competencies under faculty advisement and supervision. Students wishing to enroll in MT 389 Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be issued no later than the end of the second week of the semester. Units are awarded depending upon satisfying performance and the amount of time committed by the students to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)