AUTOMATED MANUFACTURING (628)

628-122 - Basic CNC Programming and Operation
Applies skills in the programming, setup and operation of a machining center using G-code. Explores feeds and speeds, tool selection and workholding devices. Includes units on Rapid and Linear Interpolation, Circular Interpolation, Drilling, Bolt Circles, Absolute and Incremental Positioning, Subroutines and Subprograms, Cutter Compensation, and Pocket Milling. (Prerequisites: Completion of or concurrent enrollment in 103-159 Computer Literacy - Microsoft Office; 623-162 Manufacturing Processes or dean consent)
3 Credit hours
18 Lecture hours
72 Lab hours

628-132 - Advanced CNC Programming and Operation
Applies skills in the programming, setup and operation of a turning center using G-code. Explores feeds and speeds, tool selection and workholding devices. Applies skills in programming and setup of a rotary indexer on a Vertical Machining Center, as well as the programming and setup of a Horizontal Machining Center. Introduces macro programming on a Haas Machining Center. (Prerequisite: 628-122 Basic CNC Programming and Operation or dean consent)
3 Credit hours
36 Lecture hours
36 Lab hours

628-136 - Statistical Process Control
Develops an understanding of the fundamentals of statistics and its application to statistical process control (SPC). Develops data interpretation skill using statistical tools. Introduces plotting of control charts and its interpretation for variable and attribute type of data. Involves process capability studies, quality management techniques and computer application in quality control. Recommended completion of 804-195 College Algebra with Applications or proficiency in performing mathematical computations prior to taking this course. (Prerequisites: 103-159 Computer Literacy - Microsoft Office; 890-101 College 101)
3 Credit hours
36 Lecture hours
36 Lab hours

628-142 - Computer-Aided Manufacturing
Emphasizes the use of MasterCam to create geometry, import 2D and 3D geometry, develop 2-1/2d cutter path and verify tool paths. Students post-process tool path to machine language and run programs on a CNC Machining Center. (Prerequisite: 628-122 Basic CNC Programming and Operation)
3 Credit hours
36 Lecture hours
36 Lab hours