MACHINING/ MANUFACTURING (MAMT)

MAMT 101 Introduction to Manufacturing2 Credits
The course is designed to give the student a broad overview of the world of manufacturing. The course will include people, materials, machines, design, organization, waste, quality, and other subjects which effect society and production of a product.

MAMT 102 Machining Fundamentals1 Credit
Concentrated unit dealing with speeds and feeds of machines, materials, tooling, tapping, boring, and manufacturing processes.

MAMT 105 Print Reading and Sketching2 Credits
Reading of blueprints and process sheets as used in industry, application of that information to various manufacturing processes.

MAMT 106 Geometric Tolerancing2 Credits
Identification, interpretation, and application of the blueprint symbols (referred to as Geometric Tolerancing symbols) in machining and inspection operations.

MAMT 110 Gauging and Measuring Tools1 Credit
Uses and techniques of inspection including micrometers, Vernier scales, instruments, hole gauges in surface plate work, finish of parts and overall inspection techniques.
Prerequisites: MAMT 106 or permission of instructor.

MAMT 115 Introduction to Machine Shop3 Credits
Safety procedures: using bench tools, layout tools, power saws, and taps; sharpening general purpose drills, grinding lathe bits; and identifying and operating basic machines such as the bench grinder, drill press, band saw, and others. One hour lecture and three hours laboratory per week.

MAMT 120 Machine Technology I4 Credits
Operation of engine lathes, milling machines and surface grinders. One hour lecture and five hours laboratory per week.
Prerequisites: Permission of instructor.

MAMT 125 Machine Technology II4 Credits
Further development of skills acquired in MAMT 120. Emphasis will be placed on technical aspects of tooling and machining tolerances. One hour lecture and five hours laboratory per week.

MAMT 135 Job Shop Machining I3 Credits
Production of machined parts from a shop blueprint, writing process sheets, and estimating machine time. Machining of parts may involve one or more machine operations. Machine time, paperwork, inspection, and accuracy will be emphasized. One hour lecture and three hours laboratory per week.
Prerequisites: Permission of instructor.

MAMT 145 Machine Maintenance2 Credits
Maintaining, lubricating, and repairing machinery including making gib adjustments, selecting and using proper lubricants and selecting or manufacturing parts of making repairs with emphasis on workmanship and inspection. One hour lecture, one and one-half hours laboratory per week.
Prerequisites: Permission of instructor.

MAMT 148 CNC Applications3 Credits
Introduction to Computer Numerical Control programming basics, CAM software and tooling used in today's manufacturing CNC Milling machines and CNC lathes.

MAMT 150 Introduction to Numerical Control1 Credit
Numerical control/computerized numerical control machining, its advantages and how it operates. The course is designed as an informational unit for customized pre-employment training.

MAMT 170 Practical Applications3 Credits
Students will gain a working knowledge in manufacturing through Co-op, internship, work experience or required lab work in industrial study if outside work cannot be acquired.
Prerequisites: Permission of instructor.

MAMT 196 Topics1-3 Credits
Course may be taken multiple times up to maximum of 15 credit hours.

MAMT 207 Introduction to Statistical Process Control2 Credits
Introduction to the philosophical and economic bases for statistical process control and its use; mathematical and nonmathematical SPC techniques with emphasis on application.

MAMT 230 Machine Technology III4 Credits
Exploration of advanced machine operations including O.D. grinding, cutter tool grinding, gear cutting, indexing, and rotary table work with an emphasis on workmanship, accuracy, and inspection.

MAMT 240 Job Shop Machining II3 Credits
Comprehensive capstone course utilizing all the machine tools in the machining laboratory. Further development of writing process sheets, estimating machine time, and performing final inspections on finished projects. Development of prototypes and reverse-engineering concepts using CNC machine tools and 3D printers. Final design presentation and written report.

MAMT 250 Process Systems Technology2 Credits
Advanced concepts of the philosophical and economic bases for statistical process control and its uses; mathematical and non-mathematical SPC techniques with emphasis of application.
Corequisites: MAMT 250L.

MAMT 250L Process Systems Technology Laboratory2 Credits
Advanced concepts of the philosophical and economic bases for statistical process control and its uses; mathematical and non-mathematical SPC techniques with emphasis of application.
Corequisites: MAMT 250.

MAMT 251 CNC Machining I3 Credits
Exploration of computerized numerical control machining operations, including control of functions, programming format, CNC machining setup and operation.

MAMT 255 CNC Machining II3 Credits
Further development of concepts introduced in MAMT 251. Emphasis of advanced operations of CNC machine tools.

MAMT 260 Properties of Materials3 Credits
Exploration of the processes of smelting and refining various types of metals. Discussions and demonstrations on heat-treatment, hardness testing and molecular manipulation of metals.

MAMT 295 Independent Study1-3 Credits
Course may be taken multiple times up to maximum of 6 credit hours.

MAMT 296 Topics1-3 Credits
Course may be taken multiple times up to maximum of 15 credit hours.