Machine Tool Technology Associate of Applied Science

Survey data collected by the Regional Technical Education Council indicated that there would be an increased demand for employers with computer, automation and robotics, CNC, and PLC skills in the future. These are all skills that will be acquired through the AAS in Machine Tool Technology. In addition to the general education requirements of the AAS, students will complete courses in the following major and elective areas.

MACHINE TOOL TECHNOLOGY...........................41 HOURS
The following 10 courses must be completed.
TEC100 Machine Shop I.................................6
TEC115 Engineering Drawing..........................3
TEC116 Machine Shop II*.............................6
TEC130 Computer Aided Design/Drafting...........3
TEC132 Advanced Computer Aided Design/Drafting*...3
TEC139 Machine Shop III*............................6
TEC143 Machine Shop IV*..............................6
TEC179 Basic Numerical Control Programming.....3
TEC180 Advanced Computer Numerical Control*....3
TEC181 Numerical Control Planning & Tooling*.....2

ELECTIVE CREDIT .......................................3 HOURS
Choose one three-credit hour course to fit individual student needs. Some of the most common options can be found below.
EEE150 Basic Electronics ..................................3
EEE155 Electrical Systems ..................................3
EEE158 Practical Electronics I, Motors and Generators*.....3
EEE160 Practical Electronics II*..........................3
EEE170 National Electric Code*..........................3
MFG100 Principles of Maintenance......................3
MFG103 Introduction to Quality Theory..................3
MFG105 Supply Chain Management and Distribution....3
MGT131 Project Management*............................3
MGT173 Safety Management..............................3
MGT266 Supervision I: Middle Management...........3
TEC110 Technical Internship.............................3
TEC156 Manufacturing Processes and Estimating.......3
TEC158 Quality Control and Testing Fundamentals.....3
TEC164 Environmental Analysis.........................3
TEC173 Problem Analysis..................................3

DEGREES & CERTIFICATES
GENERAL EDUCATION .................23-25
MAJOR AND ELECTIVES .................47
TOTAL HOURS ..................................70-72

*Designates prerequisites for the course.

General Education Courses

Associate of applied science degrees require a general education component which generally consist of college-level (non-remedial) coursework or its equivalent, including all relevant prerequisites, in each of the following curricular areas:

COMMUNICATIONS .............................6 HOURS
Choose two courses, from English and Communications.
Choose one written and one oral communication course.
Choose from the following communications courses:
ENG132 Applied Communications* (written)
ENG133 English Composition I*+ (written)
ENG144 Public Speaking+ (oral)
ENG167 Interpersonal Communication (oral)
TEC104 Technical Writing* (written)

HUMAN DEVELOPMENT .........................3 HOURS
Choose from the following human development courses:
SOC113 General Sociology
SOC140 Human Relations*
PSY113 General Psychology I+
PSY116 Applied Psychology
**EMPLOYMENT** ............................................. 2 HOURS
The following two courses must be completed for most AAS degrees:
PAW106 Preparation for Employment
MG194 Management Seminar, Work Place and Life Skills

**HISTORY and POLITICAL SCIENCE** .......... 3 HOURS
Choose from the following history and political science courses:
HIS123 American History I
HIS124 American History II
POS113 American National Government
POS114 American State & Local Government
POS133 International Relations

**MATHEMATICS** ............................................. 6-7 HOURS
Choose two from the following mathematics courses:
MAT113 Intermediate Algebra*
MAT114 Applied Mathematics*
MAT123 College Algebra**+
MAT133 Trigonometry**+
MAT160 Calculus for Business/Soc. Sciences**+
MAT165 Analytic Geometry and Calculus I*
MAT215 Analytic Geometry and Calculus II*
TEC190 Technical Math I*
TEC191 Technical Math II*

**PHYSICAL SCIENCE** ................................. 3-4 HOURS
Choose from the following science courses:
PHS105 Applied Science
PHS110 Introduction to Physics
PHS125 Introductory Chemistry*
PHS142 College Physics*
PHS135 General Chemistry I*
PHS223 General Physics I**+
PHS248 Earth Science I
TEC107 Unified Technical Concepts I**+
TEC108 Unified Technical Concepts II**+

**COMPUTER LITERACY** ............................. 3 HOURS

*Designates courses with prerequisites.
+Designates recommended courses for students planning to transfer to another institution or another program in the future.

---

**Machine Tool Technology - Computer Numerical Control Options**
This program is offered jointly by UniTec Career Center (UTCC) and Mineral Area College. All courses are offered on the Mineral Area College campus except for the four Machine Shop classes which are taught at the UTCC in Bonne Terre. Class schedules are arranged so students may enroll in both campus classes (Mineral Area College) and off-campus classes (UTCC) during the same semester. The off-campus classes are taken for college credit and enrollment is through Mineral Area College. Upon successful completion of this program, the student will be awarded the Associate of Science degree in Technology, with a major in Manufacturing Technology.

**HOURS REQUIRED FOR GRADUATION** .......... 74 Cr. Hrs.

**First Year, Fall Semester Credit Hours**
TEC100 Machine Shop I**................................................. 6
TEC190 Technical Math I or
TEC102 Industrial Math I .............................................. 3
TEC107 Unified Technical Concepts I or
TEC136 Principles of Technology I.............................. 3-4
TEC115 Engineering Drawing ....................................... 3
ENG133 English Composition I or

---


ENG097 Basic Writing Skills II ................................. 3
Sub Total ................................................................. 18-20

First Year, Spring Semester Credit Hours
TEC116 Machine Shop II** ........................................... 6
TEC191 Technical Mathematics II or
TEC113 Industrial Math II ........................................... 3
TEC108 Unified Technical Concepts II or
TEC141 Principles of Technology II .............................. 3-4
TEC130 Computer Aided Design/Drafting ....................... 3
POS113 American National Government** ..................... 3
Sub Total ................................................................. 18-20

Second Year, Fall Semester Credit Hours
TEC139 Machine Shop III** .......................................... 6
TEC177 Computer Numerical Control (CNC) ...................... 3
TEC179 Basic Numerical Control Programming .................. 3
TEC102 Introduction to Technology ................................ 1
Electives ......................................................................... 6
Sub Total ................................................................. 19

Second Year, Spring Semester Credit Hours
TEC143 Machine Shop IV** .......................................... 6
TEC181 Numerical Control Planning & Tooling .................. 3
PAW106 Preparation for Employment ............................. 1
TEC104 Technical Writing ............................................. 3
Electives ......................................................................... 3
Sub Total ................................................................. 19

TOTAL HOURS ......................................................... 74

* Elective may be any TEC or EEE course or other course approved by the student's adviser.
** American State and Local Government may be substituted for American National Government.
*** Instruction given at UniTec Career Center, Bonne Terre, Mo.