THE CAREER

Machinists use machine tools, such as lathes, milling machines and machining centers to produce precision metal parts. Although they may make large quantities of one part, precision machinists often produce small batches or one-of-a-kind items. They use their knowledge of the working properties of metals and their skill with machine tools to plan and carry out the operations needed to make machined products that meet precise specifications.

PROFESSIONAL TRAITS

Those pursuing a career in precision machining technology should:

- Be mechanically inclined
- Have good problem-solving abilities
- Be able to work independently
- Be able to do highly accurate work

EMPLOYMENT AND SALARY INFORMATION

Per the U.S. Bureau of Labor Statistics, in May 2012, the average wage for machinists was $19.65 per hour. Manufacturing industries employing the largest number of machinists* were:

- Machine shops
- Turned product and screw, nut and bolt manufacturing
- Metalworking machinery
- Employment services
- Motor vehicle parts manufacturing
- Aerospace product and parts manufacturing

SPECIAL FUNDING AVAILABLE

Scholarships and grants are available for those who qualify through the Missouri Manufacturing WINs grant. Please contact Financial Aid for more details.

THE PROGRAM

The Precision Machining Technology program is offered at the ECC site in Washington (Four Rivers Career Center). Designed in conjunction with the region's extensive machine tool industry, students learn the latest processes of manufacturing and machining from faculty who have worked in the field. Students study in laboratories with state-of-the-art manufacturing equipment including a Wire EDM machine.

Students explore coursework leading to an Associate of Applied Science degree or certificate intended to prepare them to enter the workforce. Assuming appropriate placement scores, a full-time student can expect to complete each of the certificate tracks in the time frames indicated below:

- Certificate of Specialization: 12 months
- Certificate of Achievement: 18 months
- CNC Certificate of Achievement: 18 months

A consortium of the leading local companies in the field work with educators at ECC and Four Rivers Career Center to design a program that fits the needs of students and employers. Students are well prepared to enter the workforce, and employers know that graduates of the program are trained and dependable.

ADMISSIONS REQUIREMENTS

To enter the program, students must have completed:

- High school diploma or the equivalent (documentation must be sent to the registration office)
- Application for admission
- A placement test as specified by the college (some coursework requires minimum placement results)

Students must also be able to demonstrate basic computer skills.
### Certificate of Specialization Coursework

**Course** | **Hours**  
--- | ---  
MA 1013 | Print Reading & Design  
MA 1202 | Machine Tool 1 Lecture  
MA 1212 | Machine Tool 1 Lab  
MA 1221 | Machine Tool 2 Lecture  
MA 1223 | Machine Tool 2 Lab  
MA 1412 | CNC Lathe Lecture  
MA 1422 | CNC Lathe Lab  
MA 2132 | CNC 2 Mill Lecture  
MA 2142 | CNC 2 Mill Lab  
MA 2151 | Geometric Dim Tolerance & SPC Lecture  
MA 2152 | Geometric Dim Tolerance & SPC Lab  
IE 2123 | Materials & Metallurgy  
MA 2163 | Solidworks  
MA 2421 | Machining Capstone Lecture  
MA 2422 | Machining Capstone Lab  
| **Total Credit Hours** | 44  

### Certificate of Achievement Coursework

**Course** | **Hours**  
--- | ---  
MA 1013 | Print Reading & Design  
MA 1161 | Intro to CNC Mill & Lathe Lecture  
MA 1162 | Intro to CNC Mill & Lathe Lab  
MA 1202 | Machine Tool 1 Lecture  
MA 1212 | Machine Tool 1 Lab  
MA 1221 | Machine Tool 2 Lecture  
MA 1223 | Machine Tool 2 Lab  
MA 1341 | Computer Aided Manufacturing Lecture  
MA 1342 | Computer Aided Manufacturing Lab  
MA 1421 | CNC Lathe Lecture  
MA 1422 | CNC Lathe Lab  
MA 2021 | Machine Tool 3 Lecture  
MA 2022 | Machine Tool 3 Lab  
MA 2132 | CNC 2 Mill Lecture  
MA 2142 | CNC 2 Mill Lab  
MA 2151 | Geometric Dim Tolerance & SPC Lecture  
MA 2152 | Geometric Dim Tolerance & SPC Lab  
IE 2123 | Materials & Metallurgy  
MA 2163 | Solidworks  
MA 2232 | Machine Tool 4 Lecture  
MA 2234 | Machine Tool 4 Lab  
MA 2421 | Machining Capstone Lecture  
MA 2422 | Machining Capstone Lab  
| **Total Credit Hours** | 30  

### CNC Certificate Coursework

**Course** | **Hours**  
--- | ---  
MA 1013 | Print Reading & Design  
MA 1161 | Intro to CNC Mill & Lathe Lecture  
MA 1162 | Intro to CNC Mill & Lathe Lab  
MA 1202 | Machine Tool 1 Lecture  
MA 1212 | Machine Tool 1 Lab  
MA 1221 | Machine Tool 2 Lecture  
MA 1223 | Machine Tool 2 Lab  
MA 1421 | CNC Lathe Lecture  
MA 1422 | CNC Lathe Lab  
MA 2021 | Machine Tool 3 Lecture  
MA 2022 | Machine Tool 3 Lab  
MA 2132 | CNC 2 Mill Lecture  
MA 2142 | CNC 2 Mill Lab  
MA 2151 | Geometric Dim Tolerance & SPC Lecture  
MA 2152 | Geometric Dim Tolerance & SPC Lab  
IE 2123 | Materials & Metallurgy  
MA 2163 | Solidworks  
MA 2421 | Machining Capstone Lecture  
MA 2422 | Machining Capstone Lab  
| **Total Credit Hours** | 33  

### To Convert a Certificate of Specialization into an AAS Degree, Students Also Need:

**Course** | **Hours**  
--- | ---  
FS 1000 | Campus Orientation/  
FS 1001 | Foundation Seminar  
EN 1223 | English Comp I or  
EN 1233 | Honors English Comp I  
MA 1161 | Intro to CNC Mill & Lathe Lecture  
MA 1162 | Intro to CNC Mill & Lathe Lab  
MT 1083 | Applied Algebra & Trigonometry  
MA 1341 | Computer Aided Manufacturing Lecture  
MA 1342 | Computer Aided Manufacturing Lab  
HI 1000/ | Constitutions Study Module  
MT 1083 | Applied Algebra & Trigonometry  
EN 1403 | Technical Writing  
MA 2232 | Machine Tool 4 Lecture  
MA 2242 | Machine Tool 4 Lab  
PH 1103 | Introduction to Physics Lecture  
PH 1112 | Introduction to Physics Lab  
| **Total Credit Hours** | 36  

### To Convert a Certificate of Achievement into an AAS Degree, Students Also Need:

**Course** | **Hours**  
--- | ---  
FS 1000 | Campus Orientation/  
FS 1001 | Foundation Seminar  
EN 1223 | English Comp I or  
EN 1233 | Honors English Comp I  
MT 1083 | Applied Algebra & Trigonometry  
HI 1000/ | Constitutions Study Module  
MT 1083 | Applied Algebra & Trigonometry  
EN 1403 | Technical Writing  
PH 1103 | Introduction to Physics Lecture  
PH 1112 | Introduction to Physics Lab  
| **Total Credit Hours** | 22  

### To Convert a CNC Certificate into an AAS Degree, Students Also Need:

**Course** | **Hours**  
--- | ---  
FS 1000 | Campus Orientation/  
FS 1001 | Foundation Seminar  
EN 1223 | English Comp I or  
EN 1233 | Honors English Comp I  
MA 1161 | Intro to CNC Mill & Lathe Lecture  
MA 1162 | Intro to CNC Mill & Lathe Lab  
MT 1083 | Applied Algebra & Trigonometry  
MA 1341 | Computer Aided Manufacturing Lecture  
MA 1342 | Computer Aided Manufacturing Lab  
HI 1000/ | Constitutions Study Module  
MT 1083 | Applied Algebra & Trigonometry  
EN 1403 | Technical Writing  
MA 2232 | Machine Tool 4 Lecture  
MA 2242 | Machine Tool 4 Lab  
PH 1103 | Introduction to Physics Lecture  
PH 1112 | Introduction to Physics Lab  
| **Total Credit Hours** | 33  

East Central College does not discriminate on the basis of race, color, religion, national origin, ancestry, gender, sexual orientation, age, disability, genetic information or veteran status. Inquiries/concerns regarding civil rights compliance as it relates to student programs and services may be directed to the Vice President of Student Development, 131 Buescher Hall, 1964 Prairie Dell Road, Union, Missouri 63084, (636) 584-6565 or stnotice@eastcentral.edu.