



Catalog Year Fall 2015

# EAST CENTRAL COLLEGE PRECISION MACHINING TECHNOLOGY

## CERTIFICATION

### East Central College

1964 Prairie Dell Road  
Union, Missouri 63084  
636-584-6500  
www.eastcentral.edu

### Admissions Office

ECC Campus  
636-584-6563  
admissions@eastcentral.edu

### Program Location

ECC-Washington  
Located at the  
Four Rivers Career Center  
1978 Image Drive  
Washington, MO 63090  
636-239-0598

### Program Faculty

Curtis Elliott, Program  
Coordinator  
636-239-0598  
Curtis.Elliott@eastcentral.edu

Donna Wilkinson  
636-239-0598  
Donna.Wilkinson@eastcentral.edu

### Division

Mathematics and Physical  
Science  
636-584-6773



NATIONAL  
CAREER READINESS  
CERTIFICATE®

ACCREDITED BY



National Institute for  
Metalworking Skills

East Central College is  
accredited by the Higher Learning  
Commission of the North Central  
Association of Colleges and  
Schools  
30 N. LaSalle St., Suite 2400  
Chicago, Illinois 60602-2504  
800-621-7440

## 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 machining 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.



## ADDITIONAL PROGRAM INFORMATION

STANDARD OCCUPATIONAL CLASSIFICATION (SOC) CODE  
51-4041.00, 51-4122.00, 51-4121.06

### TUITION AND REQUIRED FEES

Certificate of Specialization:  
\$3,420 (In District); \$4,740 (Out of District)  
Certificate of Achievement:  
\$5,016 (In District); \$6,952 (Out of District)  
CNC Certificate of Achievement:  
\$3,762 (In District); \$5,214 (Out of District)

### BOOKS AND SUPPLIES

\$817.26

### OTHER FEES AND EXPENSES

Certificate of Specialization: \$459  
Certificate of Achievement: \$618  
CNC Certificate of Achievement: \$484

### JOB PLACEMENT RATE

Certificate of Specialization: 100 percent  
Certificate of Achievement: 100 percent

■ **ROLLA**  
573-466-4100

■ **SULLIVAN**  
573-468-8287

■ **UNION**  
636-584-6588

■ **WASHINGTON**  
636-239-0598

WWW.EASTCENTRAL.EDU

# PRECISION MACHINING TECHNOLOGY CERTIFICATION

## CERTIFICATE OF SPECIALIZATION COURSEWORK

COURSE		HOURS
MA 1013	Print Reading & Design	3
MA 1202	Machine Tool 1 Lecture	2
MA 1212	Machine Tool 1 Lab	2
MA 1221	Machine Tool 2 Lecture	1
MA 1223	Machine Tool 2 Lab	3
MA 1421	CNC Lathe Lecture	1
MA 1422	CNC Lathe Lab	2
MA 2132	CNC 2 Mill Lecture	2
MA 2142	CNC 2 Mill Lab	2
MA 2151	Geometric Dim Tolerance & SPC Lecture	1
MA 2152	Geometric Dim Tolerance & SPC Lab	2
IE 2123	Materials & Metallurgy	3
MA 2163	Solidworks	3
MA 2421	Machining Capstone Lecture	1
MA 2422	Machining Capstone Lab	2
Total Credit Hours		30

## CERTIFICATE OF ACHIEVEMENT COURSEWORK

COURSE		HOURS
MA 1013	Print Reading & Design	3
MA 1161	Intro to CNC Mill & Lathe Lecture	1
MA 1162	Intro to CNC Mill & Lathe Lab	2
MA 1202	Machine Tool 1 Lecture	2
MA 1212	Machine Tool 1 Lab	2
MA 1221	Machine Tool 2 Lecture	1
MA 1223	Machine Tool 2 Lab	3
MA 1341	Computer Aided Manufacturing Lecture	1
MA 1342	Computer Aided Manufacturing Lab	2
MA 1421	CNC Lathe Lecture	1
MA 1422	CNC Lathe Lab	2
MA 2021	Machine Tool 3 Lecture	1
MA 2023	Machine Tool 3 Lab	3
MA 2132	CNC 2 Mill Lecture	2
MA 2142	CNC 2 Mill Lab	2
MA 2151	Geometric Dim Tolerance & SPC Lecture	1
MA 2152	Geometric Dim Tolerance & SPC Lab	2
IE 2123	Materials & Metallurgy	3
MA 2163	Solidworks	3
MA 2232	Machine Tool 4 Lecture	2
MA 2242	Machine Tool 4 Lab	2
MA 2421	Machining Capstone Lecture	1
MA 2422	Machining Capstone Lab	2
Total Credit Hours		44

## CNC CERTIFICATE COURSEWORK

COURSE		HOURS
MA 1013	Print Reading & Design	3
MA 1161	Intro to CNC Mill & Lathe Lecture	1
MA 1162	Intro to CNC Mill & Lathe Lab	2
MA 1202	Machine Tool 1 Lecture	2
MA 1212	Machine Tool 1 Lab	2
MA 1221	Machine Tool 2 Lecture	1
MA 1223	Machine Tool 2 Lab	3
MA 1421	CNC Lathe Lecture	1
MA 1422	CNC Lathe Lab	2
MA 2132	CNC 2 Mill Lecture	2
MA 2142	CNC 2 Mill Lab	2
MA 2151	Geometric Dim Tolerance & SPC Lecture	1
MA 2152	Geometric Dim Tolerance & SPC Lab	2
IE 2123	Materials & Metallurgy	3
MA 2163	Solidworks	3
MA 2421	Machining Capstone Lecture	1
MA 2422	Machining Capstone Lab	2
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	1
EN 1223	English Comp I or	
EN 1233	Honors English Comp I	3
MA 1161	Intro to CNC Mill & Lathe Lecture	1
MA 1162	Intro to CNC Mill & Lathe Lab	2
MT 1083	Applied Algebra & Trigonometry	3
MA 1341	Computer Aided Manufacturing Lecture	1
MA 1342	Computer Aided Manufacturing Lab	2
HI 1000/ PS 1000	Constitutions Study Module	0
	History or Pol. Science Requirement	3
	Humanities Requirement	3
MA 2021	Machine Tool 3 Lecture	1
MA 2023	Machine Tool 3 Lab	3
	PE Requirement	1
EN 1403	Technical Writing	3
MA 2232	Machine Tool 4 Lecture	2
MA 2242	Machine Tool 4 Lab	2
PH 1103	Introduction to Physics Lecture	3
PH 1112	Introduction to Physics Lab	2
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	1
EN 1223	English Comp I or	
EN 1233	Honors English Comp I	3
MT 1083	Applied Algebra & Trigonometry	3
HI 1000/ PS 1000	Constitutions Study Module	0
	History or Pol. Science Requirement	3
	Humanities Requirement	3
	PE Requirement	1
EN 1403	Technical Writing	3
PH 1103	Introduction to Physics Lecture	3
PH 1112	Introduction to Physics Lab	2
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	1
EN 1223	English Comp I or	
EN 1233	Honors English Comp I	3
MT 1083	Applied Algebra & Trigonometry	3
MA 1341	Computer Aided Manufacturing Lecture	1
MA 1342	Computer Aided Manufacturing Lab	2
HI 1000/ PS 1000	Constitutions Study Module	0
	History or Pol. Science Requirement	3
	Humanities Requirement	3
MA 2021	Machine Tool 3 Lecture <sup>A</sup>	1
MA 2023	Machine Tool 3 Lab <sup>A</sup>	3
	PE Requirement	1
EN 1403	Technical Writing	3
MA 2232	Machine Tool 4 Lecture <sup>A</sup>	2
MA 2242	Machine Tool 4 Lab <sup>A</sup>	2
PH 1103	Introduction to Physics Lecture	3
PH 1112	Introduction to Physics Lab	2
Total Credit Hours		33