



Catalog Year Fall 2015

# EAST CENTRAL COLLEGE INDUSTRIAL ENGINEERING 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/ Coordinator

Nathan Esbeck  
636-239-0598  
Nathan.Esbeck@eastcentral.edu

### Division Chair

Richard Hudanick  
636-584-6635  
Richard.Hudanick@  
eastcentral.edu

### Division

Business & Industry  
636-584-6139



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

Industrial engineering technicians use the principles of science, engineering and mathematics to solve technical problems in research and development, manufacturing, sales, construction, inspection and maintenance. Their work is more narrowly focused and application-oriented than that of scientists and engineers.

Many engineering technicians assist engineers and scientists, especially in research and development. Others work in quality control, conducting tests or collecting data. In manufacturing, they assist in product design, development or facilities maintenance. Job titles include maintenance engineer, engineering technician and field service technician.

## PROFESSIONAL TRAITS

Those pursuing a career in industrial engineering technology should:

- Have a certain degree of creativity
- Possess good communication skills
- Be able to work well with others

## EMPLOYMENT AND SALARY INFORMATION

Nationwide, the median annual earnings\* of industrial engineering technicians were \$52,020 in May 2013. The five industries employing the largest number of these positions and their median yearly earnings were:

Aerospace Product and Parts Manufacturing	\$64,030
Semiconductor and Other Electronic Component Manufacturing	\$54,560
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	\$55,110
Motor Vehicle Parts Manufacturing	\$48,540
Plastics Product Manufacturing	\$48,540

## 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 ECC Industrial Engineering Technology program prepares students to function as technical assistants to engineers performing installation, maintenance and modification of advanced manufacturing equipment. The program is accredited by ATMAE (Association of Technology, Management, and Applied Engineering) and offered at the ECC site in Washington (Four Rivers Career Center).

Students receive training in machinery maintenance and repair; basic electrical principles, motor controls and process control systems; hydraulic and pneumatic control systems; programmable controls, robotics and industrial computers; welding and basic machine shop equipment; safety practices; and basic HVAC systems. Students also learn the problem-solving, teamwork and self-management skills demanded by business and industry today.

Assuming appropriate placement scores, full-time students can expect to complete the certificate of achievement in 18 months, and the industrial maintenance technology certificate in 12 months.

## ADMISSIONS REQUIREMENTS

Students must have completed:

- ✓ High school diploma or the equivalent (documentation sent to the registration office)
- ✓ Application for admission
- ✓ A placement test as specified by the college (some courses require minimum placement results)

## ADDITIONAL PROGRAM INFORMATION\*

STANDARD OCCUPATIONAL CLASSIFICATION (SOC)  
17-3026.00

### TUITION

Achievement: \$5,092 (In-District);  
\$6,039 (Out-of-District)  
Industrial Maintenance Tech.: \$3,496 (In-District);  
\$4,832 (Out-of-District)

### BOOKS AND SUPPLIES

\$1693.30

### OTHER FEES AND EXPENSES

Achievement: \$215  
Industrial Maintenance Tech.: \$140

■ **ROLLA**  
573-466-4100

■ **SULLIVAN**  
573-468-8287

■ **UNION**  
636-584-6588

■ **WASHINGTON**  
636-239-0598

WWW.EASTCENTRAL.EDU

# INDUSTRIAL ENGINEERING TECHNOLOGY

## CERTIFICATION

### CERTIFICATE OF ACHIEVEMENT COURSEWORK

COURSE	HOURS
IE 1103 Introduction to Manufacturing Processes	3
IE 1152/51 Industrial Electricity Lecture/Lab	3
IE 2113 Maintenance Practices	3
IE 1112/21 Industrial Power Systems Lecture/Lab	3
IE 1123 Industrial Computer Applications	3
IE 1172/71 Process & Control Systems Lecture/Lab	3
IE 2153 Motor Controls	3
IE 2123 Materials and Metallurgy	3
IE 2213 PLC-Programmable Logic Controllers	3
MA 1202/12 Machine Tool I Lecture/Lab	4
IE 1163 Industrial & Control System Wiring	3
IE 2173 Industrial Systems Troubleshooting	3
BU 2881 Business & Industry Capstone	1
Program Elective	3
Program Elective	3
Program Elective	3
<b>Total Credit Hours</b>	<b>47</b>

TO CONVERT A CERTIFICATE OF ACHIEVEMENT INTO AN AAS DEGREE, STUDENTS ALSO NEED TO TAKE THE FOLLOWING:

COURSE	HOURS
FS 1000 Campus Orientation/	
FS 1001 Foundation Seminar	1
EN 1223 English Comp I or	
EN 1233 English Comp I (Honors)	3
MT 1083 Applied Algebra & Trigonometry	3
PE Requirement	1
CT 1003 Oral Communications or	
CT 1103 Public Speaking	3
PH 1104 Introduction to Physics Lecture/Lab	4
EN 1403 Technical Writing	3
HI 1000/	
PS 1000 Constitutions Study Module	0
History or Pol. Science Requirement	3
<b>Total Credit Hours</b>	<b>21</b>

### INDUSTRIAL MAINTENANCE TECHNOLOGY CERTIFICATE COURSEWORK

COURSE	HOURS
FS 1000 Campus Orientation/	
FS 1001 Foundation Seminar	1
IE 1103 Introduction to Manufacturing Processes	3
IE 1152/51 Industrial Electricity Lecture/Lab	3
IE 2113 Maintenance Practices	3
IE 1112/21 Industrial Power Systems Lecture/Lab	3
IE 1172/71 Process & Control Systems Lecture/Lab	3
IE 2153 Motor Controls	3
MA 1202/12 Machine Tool I Lecture/Lab	4
IE 1163 Industrial & Control System Wiring	3
General Education Requirement *	3
<b>Total Credit Hours</b>	<b>29</b>

TO CONVERT A CERTIFICATE OF SPECIALIZATION INTO AN AAS DEGREE, STUDENTS ALSO NEED TO TAKE THE FOLLOWING:

COURSE	HOURS
EN 1223 English Comp I * or	
EN 1233 English Comp I (Honors) *	3
MT 1083 Applied Algebra & Trigonometry *	3
PE Requirement	1
IE 1123 Industrial Computer Applications	3
CT 1003 Oral Communications * or	
CT 1103 Public Speaking *	3
PH 1104 Introduction to Physics Lecture/Lab	4
EN 1403 Technical Writing *	3
IE 2213 PLC - Programmable Logic Controllers	3
IE 2173 Industrial Systems Troubleshooting	3
IE 2123 Materials and Metallurgy	3
BU 2881 Business & Industry Capstone	1
HI 1000/	
PS 1000 Constitutions Study Module	0
History or Pol. Science Requirement	3
Program Elective	3
Program Elective	3
<b>Total Credit Hours</b>	<b>39</b>

### \* GENERAL EDUCATION REQUIREMENT OPTIONS

EN 1223 English Comp I	
EN 1233 English Comp I (Honors)	
EN 1403 Technical Writing	
CT 1003 Oral Communications or	
CT 1103 Public Speaking	
MT 1083 Applied Algebra & Trigonometry *	