



Catalog Year Fall 2015

# EAST CENTRAL COLLEGE INDUSTRIAL ENGINEERING TECHNOLOGY

ASSOCIATE OF APPLIED SCIENCE DEGREE AND CERTIFICATES

## 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

Ann Boehmer  
636-584-6679  
Ann.Boehmer@eastcentral.edu

## Division

Mathematics and Physical  
Science  
636-584-6773



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 may assist in product design, development or facilities maintenance.

## 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, per the U.S. Bureau of Labor Statistics. 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 Industrial Engineering Technology program is offered at the ECC site in Washington (Four Rivers Career Center). [The program is accredited by the Association of Technology, Management, and Applied Engineering \(ATMAE\).](#)

Technicians install, troubleshoot and maintain complex manufacturing and processing equipment. Job titles include maintenance engineer, engineering technician and field service technician.

This program prepares students to function as technical assistants to engineers performing installation, maintenance and modification of advanced manufacturing equipment.

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.

## 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 (please note: some coursework requires minimum placement results)

## TRANSFER OPTIONS

The AAS degree is designed for students seeking employment immediately upon graduation. However, many of the credits, particularly the general education electives received with this degree, may qualify as transfer credit by four-year schools.

Please note that these decisions are made solely by the bachelor degree-granting institution, not East Central College. Students seeking to transfer are advised to contact the institution of their choice before beginning a program or reviewing other degrees and coursework offered through ECC.

■ **ROLLA**  
573-466-4100

■ **SULLIVAN**  
573-468-8287

■ **UNION**  
636-584-6588

■ **WASHINGTON**  
636-239-0598

WWW.EASTCENTRAL.EDU

# INDUSTRIAL ENGINEERING TECHNOLOGY

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## PROGRAM OF STUDY

This program of study is for a full-time student; part-time study is also available. Please contact an academic advisor for full course options. For the most current academic schedule (which is subject to change), visit the college Web site at [www.eastcentral.edu](http://www.eastcentral.edu).

AAS Program (68 credit hours)

A - Course that is also part of the Certificate of Achievement program (48 credit hours)

M - Course that is also part of the Industrial Maintenance Technology Certificate program (29 credit hours)

## YEAR 1

### FALL SEMESTER

COURSE	HOURS
FS 1000 Campus Orientation/ FS 1001 Foundation Seminar <sup>M</sup>	1
EN 1223 English Comp I or EN 1233 English Comp I (Honors)	3
IE 1103 Introduction to Manufacturing Processes <sup>A, M</sup>	3
IE 1151/52 Industrial Electricity Lecture/Lab <sup>A, M</sup>	3
IE 2113 Maintenance Practices <sup>A, M</sup>	3
MT 1083 Applied Algebra & Trigonometry PE Requirement	1
Total Hours	17

### SPRING SEMESTER

COURSE	HOURS
IE 1112/21 Industrial Power Systems Lecture/Lab <sup>A, M</sup>	3
IE 1123 Industrial Computer Applications <sup>A</sup>	3
IE 1171/72 Process & Control Systems Lecture/Lab <sup>A, M</sup>	3
CT 1003 Oral Communications or CT 1103 Public Speaking	3
PH 1104 Introduction to Physics Lecture/Lab	4
Total Hours	16

### SUMMER SEMESTER

COURSE	HOURS
Program Elective <sup>A, M</sup>	3
Total Hours	3

## YEAR 2

### FALL SEMESTER

COURSE	HOURS
EN 1403 Technical Writing	3
IE 2153 Motor Controls <sup>A, M</sup>	3
IE 2123 Materials and Metallurgy <sup>A</sup>	3
IE 2213 PLC-Programmable Logic Controllers <sup>A</sup>	3
MA 1202/12 Machine Tool I Lecture/Lab <sup>A, M</sup>	4
Total Hours	16

### SPRING SEMESTER

COURSE	HOURS
IE 1163 Industrial & Control System Wiring <sup>A, M</sup>	3
IE 2173 Industrial Systems Troubleshooting <sup>A</sup>	3
ED 2991 Career Management <sup>A</sup>	1
HI 1000/ PS 1000 Constitutions Study Module History or Pol. Science Requirement	0
Program Elective <sup>A</sup>	3
Program Elective <sup>A</sup>	3
Total Hours	16

### PROGRAM ELECTIVES

COURSE	HOURS
AI 1302/11 Introduction to HVAC Lecture/Lab	3
BU 1003 Introduction to Business	3
BU 1193 Dynamics/Leadership	3
MA 1221/23 Machine Tool II Lecture/Lab	4
WL 1011/14 Welding I Lecture/Lab	5
IE 2313 Advanced Programmable Logic Controllers	3
IE 1333 Industrial Robotics	3
IE 2403 Industrial Engineering Technology Internship	3