

# TRANSFER ENGINEERING

ASSOCIATE OF SCIENCE DEGREE

"The East Central engineering program is just like a family. All of the students in the program are friends with each other. There is always someone to help, or just talk to."

I chose ECC because of their great relationship with Missouri S&T. Advisors at both colleges are very helpful and knowledgeable about what classes are needed and what transfers."

**Jesse DeBoeuf**

Recent ECC graduate and current MO S&T student



"The engineering department at ECC gave me the tools needed to excel at Missouri S&T. The academic challenges presented to me developed the skills needed to fulfill many leadership roles at Missouri S&T and beyond."

**Adam Lewis**

Software engineer  
Quackenbush Engineering Solutions  
and Technologies LLC

"East Central developed the analytical skills that I used both at Garmin, and now at Boeing. My job constantly requires that I learn every day, and East Central gave me the firm foundation for this to be possible."

**Michael K. Schmidt**

Realtime software engineer

"East Central College prepared me for continuing my education at a university by challenging me every day in both coursework and time management. When I transferred to Missouri S&T it was a smooth transition. I especially liked the small class sizes and the fact that every professor knew me on a first name basis."

**Pamela Roach**

MO S&T graduate student majoring in mechanical engineering.

"My mid-life career change was met with encouraging and knowledgeable instructors who have mentally challenged me. The ECC campus provided a personable atmosphere where I found new friendships."

**Brian Suerig**

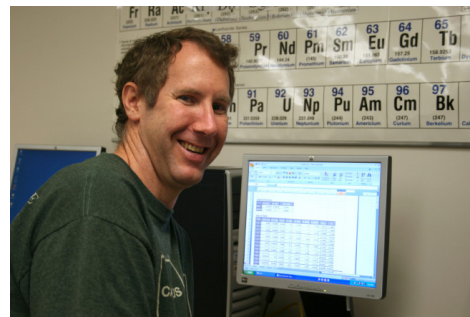
Recent ECC graduate and current MO S&T student  
Former Chrysler employee



"I would recommend ECC to anyone planning to attend Missouri S&T. I feel that I am more prepared for my S&T classes than S&T students, due to the analytical and critical thinking skills I learned in ECC's engineering program. The atmosphere at ECC made it easy to find study groups and my professors were always willing to help!"

**William Marchetto**

MO S&T student majoring in electrical engineering and computer engineering



# EAST CENTRAL COLLEGE

# TRANSFER ENGINEERING

ASSOCIATE OF SCIENCE DEGREE

## 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 Faculty

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636-584-6684  
barry@eastcentral.edu

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## Division Chair

Ann Boehmer  
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boehmera@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

Engineers apply math and science principles to develop practical solutions to technical problems. They design products, machinery to build those products and the plants in which those products are made. Engineers also design the systems that ensure the quality of the products and the efficiency of the workforce and manufacturing process.

In addition, these professionals design, plan and supervise the construction of buildings, highways and transit systems. Engineers develop and implement improved ways to extract, process and use raw materials such as minerals, petroleum and biomass.

Moreover, they harness the power of the sun and resources from the Earth to meet the energy needs of society. To this end, engineers analyze the impact of the products they develop or the systems they design on the environment and the people using them.

## PROFESSIONAL TRAITS

Those pursuing a career in engineering should:

- Have an aptitude for math and science
- Be able to analyze, compare and interpret facts and figures quickly
- Clearly communicate the results of their work to clients and managers both verbally and in writing
- Be good at working with people, business systems and computers

## EMPLOYMENT OPPORTUNITIES

Per the U.S. Bureau of Labor Statistics, these categories of engineers are expected to have employment growth over the projected decade: mechanical engineers at nine percent, electrical engineers and chemical engineers at six percent and civil engineers at 19 percent.

Median wage and salary earnings are:

Civil Engineer:	\$77,560
Mechanical Engineer:	\$78,280
Electrical Engineer:	\$87,180
Chemical Engineer:	\$90,300

## THE PROGRAM

ECC offers its engineering students a complete two-year program which includes the basic physics and calculus classes, as well as upper-level science and engineering electives. Students participate in classroom design and robotics projects.

Class sizes are small and students have the opportunity to receive individual help when necessary. With the ECC Associate of Science Degree in Transfer Engineering, students are able to focus on any of the 15 different fields of engineering.

## ADMISSION 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

East Central College engineering students transfer to four-year engineering programs with a very high completion rate. They benefit from an articulation agreement and 30-plus year history of successful transfer to the Missouri University of Science and Technology.

Transferring credit is decided by the bachelor degree-granting institution, not ECC. Students are advised to contact any four-year college or university they are interested in as soon as possible so the appropriate classes can be taken at ECC.

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## PROGRAM OF STUDY

This sequence of courses is designed for the student who plans to attend ECC full-time and is prepared to take Calculus I as an entering freshman. Part-time study is also available. Please contact an academic advisor for complete 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).

### YEAR 1

#### FALL SEMESTER

COURSE	HOURS
FS 1000/ FS 1001 Campus Orientation/ Foundation Seminar	1
MT 1605 Calculus I	5
EG 1103 Engineering Design	3
EN 1223 English Comp I or EN 1233 Honors English Comp I	3
SC 1000 Laboratory Safety for Students	0
CH 1305 General Chemistry I Lecture/Lab	5
Total Hours	17

#### SPRING SEMESTER

COURSE	HOURS
MT 2105 Calculus II	5
PH 2000 Physics Recitation	0
PH 2103 Physics I Lecture	3
PH 2112 Physics I Lab	2
HI 1000/ PH 1000 Constitutions Study Module	0
History or Pol. Science Requirement	3
Humanities/Social Science Elective	3
Total Hours	16

### YEAR 2

#### FALL SEMESTER

COURSE	HOURS
MT 2205 Calculus III	5
PH 2200 General Physics II Recitation	0
PH 2203 Physics II Lecture	3
PH 2212 Physics II Lab	2
Technical Elective *	4
Technical Elective *	3
Total Hours	17

#### SPRING SEMESTER

COURSE	HOURS
MT 2303 Differential Equations	3
EC 2103 Macroeconomics or EC 2203 Microeconomics	3
Technical Elective *	3
Communications Elective	3
Humanities/Social Science Elective	3
Total Hours	15

#### \*TECHNICAL ELECTIVES INCLUDE:

COURSE	HOURS	COURSE	HOURS
EG 2003 Statics	3	CH 2305 Organic Chemistry I Lecture/Lab	5
EG 2013 Metallurgy	3	CH 2405 Organic Chemistry II Lecture/Lab	5
EG 2103 Dynamics	3	GL 1103 Geology Lecture	3
EG 2203 C++ Programming Lecture	3	GL 1112 Geology Lab	2
EG 2211 C++ Programming Lab	1	MT 2223 Engineering Statistics	3
EG 2303 Circuits	3		
CH 1405 General Chemistry II Lecture/Lab	5		

## SPECIFIC DEGREE REQUIREMENTS FOR EACH TYPE OF ENGINEERING

TYPE OF ENGINEERING	SPECIFIC HUMANITIES/ SOCIAL SCIENCE REQUIREMENTS	SPECIFIC HISTORY OR GOVERNMENT REQUIREMENT	SPECIFIC COMMUNICATION REQUIREMENT	TECHNICAL ELECTIVES
Aerospace	Ethics and Literature			Statics, Dynamics, C++ Programming, Circuits
Architectural	One must be upper level	History		Statics, Dynamics, Circuits, Engineering Statistics
Ceramic	One must be upper level			Statics, Engineering Statistics, Chem II
Chemical				Chem II, Organic Chem I, Organic Chem II, C++ Programming
Civil				Geology, Statics, Dynamics
Computer	One must be Public Speaking		English Comp II	C++ Programming, Circuits, Statistics
Electrical	One must be Public Speaking		English Comp II	C++ Programming, Circuits, Statistics
Engineering Management	One must be General Psychology			Statics, Dynamics, C++ Programming, Circuits, Engineering Statistics
Environmental		History		Chem II, Geology, Biology, Engineering Statistics, Statics, Dynamics
Geological	One must be upper level		Public Speaking	Engineering Statistics, Geology, Biology, Statics, Dynamics
Mechanical	One must be a Literature			Statics, Dynamics, Engineering Statistics, C++ Programming, Circuits, Metallurgy
Metallurgical	One must be upper level			Engineering Statistics, Statics, Circuits, Metallurgy
Mining	One must be upper level		Technical Writing	Engineering Statistics, Geology, Metallurgy
Nuclear	One must be upper level		English Comp II	Engineering Statistics, Statics, C++ Programming, Metallurgy
Petroleum	One must be upper level		Technical Writing	Geology, Statics, Dynamics

## MISSOURI S&T ACCEPTED HUMANITIES AND SOCIAL SCIENCE ELECTIVES (\*\*\*)DENOTES UPPER LEVEL COURSES)

COURSE	HOURS	COURSE	HOURS
AR 1203 Art Appreciation	3	GR 1204 German II***	4
CT 1103 Public Speaking	3	HI 1103 US History to 1865	3
CT 1123 Introduction to Film Studies	3	HI 1203 US History 1865-1945	3
CT 1303 Theater Appreciation	3	HI 2103 European Civilization I	3
CV 2623 East Asian Civilization Since 1800	3	HI 2203 World Civilization II	3
EC 2203 Principles of Microeconomics	3	MU 1603 Music Appreciation	3
EC 2303 Principles of Macroeconomics	3	PR 1003 Intro to Philosophy	3
ED 2413 Educational Psychology	3	PR 1203 History of Modern Philosophy	3
EN 1333 English Comp II	3	PR 1303 Living World Religions	3
EN 1413 World Literature I	3	PR 2103 Ethics***	3
EN 1423 World Literature II	3	PS 1203 US Government I	3
EN 2103 British Literature to 1784	3	PS 2103 International Relations	3
EN 2113 British Lit. Romantic to Present	3	PY 1103 General Psychology	3
EN 2203 American Literature to 1865	3	PY 1203 Research Methods***	3
EN 2213 American Literature to Present	3	PY 2103 Personal and Social Adjustment***	3
EN 2323 Women's Literature	3	PY 2213 Abnormal Psychology***	3
EN 2603 Shakespeare on Stage***	3	PY 2403 Human Development***	3
FR 1104 French I	4	SO 1103 General Sociology	3
FR 1204 French II***	4	SO 2203 Marriage and Family***	3
GR 1104 German I	4	SP 1104/1204 Spanish I/Spanish II***	4