OVERVIEW

The Associate of Science (AS) in Engineering program at Ivy Tech Columbus is a great stepping stone to a Bachelor's Degree in Engineering. A number of engineering programs statewide, including electrical, mechanical, civil or computer engineering accept the Ivy Tech degree. This program provides a strong foundation in science, mathematics and engineering. The Columbus curriculum is designed to align directly with the curriculum for the Bachelor of Science in Mechanical Engineering at IUPUC and IUPUI, so the AS student from Ivy Tech enters either of these institutions with the same coursework completed as students who started their engineering degrees as freshmen at those institutions. Thus, local students can achieve a valuable degree while staying close to home and work.

Special emphasis is placed on qualitative and quantitative analytical skills necessary in engineering while working in a team environment. Much of the coursework deals with the applied aspects of mathematics and science in engineering. Students will get direct experience with industry leading software Creo, SOLIDWORKS, Inventor, MATLAB, and Automation Studio for mathematical modeling of complex systems. They will also do lab work and class projects where they will apply engineering principles to solve realistic engineering problems.

TWO-YEAR PROGRAM OPTION
ASSOCIATE OF SCIENCE
(60 credit hours = 4 semesters)

- Earn an Associate degree in Engineering in Columbus
- Two years emulates studies at partner four-year colleges
- Transfer to four year college with junior status
- Columbus curriculum mirrors IUPUC/IUPUI curriculum
- Ivy Tech offers BS engineering level math, physics & chemistry
- Instructors have at a minimum a Masters in Engineering
- Instructors have extensive industry experience
- Scheduling flexibility allows part- or full-time employment
- Employment opportunities increase with AS degree
- Many companies offer tuition assistance

OUR GRADUATES

It is anticipated that almost all graduates of the Associate of Science Degree in Engineering program will transfer to a four-year university to continue their education. However, for a number of graduates, the AS degree will be a tool with which they can market themselves to local employers, many of whom have tuition refund programs to support employee education.

Taking advantage of these programs, students will continue down the path of achieving a significant return on their educational investment, culminating in a Bachelor's Degree in Mechanical Engineering.
### Engineering Pathway

**Ivy Tech Course** | **Equivalent to IUPUC**
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**Semester 1**
IVYT 1xx  | Student Success in University Transfer  | 1  |  
ENGL 111  | English Composition  | 3  | ENGL 131  | Elementary Composition I  | 3  
MATH 211  | Calculus I  | 4  | MATH 165  | Calculus I  | 4  
ENGR 195  | Intro to Engineering Profession  | 1  | ENGR 195  | Intro to Engineering Profession  | 1  
ENGR 197  | Intro to Programming Concept  | 2  | ENGR 197  | Intro to Programming  | 2  
TGEC XXX  | Humanistic & Artistic elective  | 3  | GEN ED  | Gen ED Elective  | 3  
**14**  |  
**Semester 2**
MATH212  | Calculus II  | 4  | MATH 166  | Calculus II  | 4  
MATH213  | Multidimensional Mathematics  | 3  | MATH171  | Multidimen. Mathematics  | 3  
PHYS 220  | Mechanics  | 5  | PHYS 152  | Mechanics  | 4  
ENGR 196  | Intro to Engineering  | 3  | ENGR 196  | Intro to Engineering  | 3  
ENGR 297  | Computer Tool for Engineering (Matlab)  | 1  | ENGR 297  | Computer Tool Matlab  | 1  
**16**  |  
**Semester 3**
MATH 261  | Multivariate Calculus  | 4  | MATH 261  | Multivariate Calculus  | 4  
PHYS 221  | Heat, Electricity and Optics  | 5  | PHYS 251  | Heat, Electricity and Optics  | 5  
COMM101  | Public Speaking  | 3  | COMM 110  | Fundamentals of Speech  | 3  
ENGR 260  | Statics  | 3  | ME 270  | Basic Mechanics  | 3  
TGEC XXX  | Social & Behavioral elective (ECON201)  | 3  | ECON 201  | Introduction to Economics  | 3  
**18**  |  
**Semester 4**
MATH 264  | Differential Equations  | 3  | MATH 266  | Ordinary Differential Equations  | 3  
ENGR 261  | Dynamics  | 3  | ME 274  | Basic Dynamics II  | 3  
ENGR 200  | ThermoDynamics  | 3  | ME 200  | Thermodynamics I  | 3  
ENGR 204  | Intro to Electrical & Electronic Circuits  | 4  | ECE 204  | Intro to Electrical Circuits  | 4  
ENGR 279  | Capstone  | 1  
**14**  |  
**Grand Total**  | 62  | 59  

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**Earn More and Improve Your Skills**

If you want a good-paying job, you need to invest in your education. With an associate degree from Ivy Tech Community College, you’ll earn an average $8,000 more each year than you would with just a high school diploma. Over the course of your career, this has a tremendous impact on your earning power—a difference of up to $400,000.

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