

ENGINEERING (ASSOCIATE OF SCIENCE)



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

Semester 1		Credit	Equivalent to IUPUC		Credit
IVYT 1xx	Student Success in University Transfer	1			
ENGL 111	English Composition	3	ENG 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			13
Semester 2		Credit	Equivalent to IUPUC		Credit
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			15
Semester 3		Credit	Equivalent to IUPUC		Credit
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			18
Semester 4		Credit	Equivalent to IUPUC		Credit
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			13
Grand Total		62			59

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.

Jianren Rong, Associate Professor & Engineering Program Chair
 (812) 374-5356 or jrong@ivytech.edu

