

College of Engineering

UA Visit Day



The University of Akron
College of Engineering

Welcome to the College of Engineering



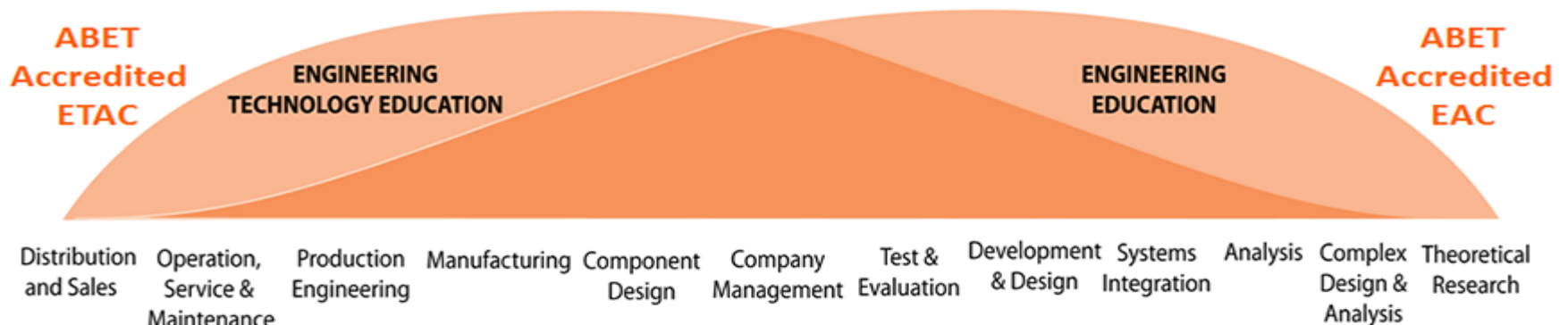
About the College of Engineering

- Established in 1914
- About 90 faculty
- Over 3,000 undergraduates
- Approximately 50% of incoming freshmen in the Honor's College are engineering students
- Over 80% of direct admits to their major have transfer in CCP/AP credits
- Approximately 30% of engineering students receive a minor



Engineering vs. Engineering Technology

- Engineers come up with innovative ideas and design and develop new products
- Engineering Technologists work with the engineers to decide how to manufacture the products, what equipment is needed
- Engineering Technicians work with the technologists to operate the machines and create the product.
- Classes and class content are different for engineers and technologists



(Chart above from the American Society for Mechanical Engineers.)

Undergraduate Programs



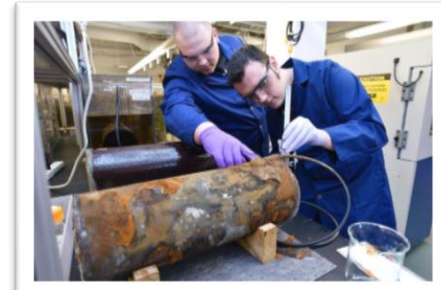
Biomedical
Engineering



Mechanical
Engineering



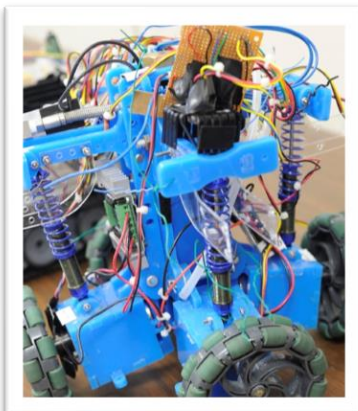
Aerospace
Systems
Engineering



Corrosion
Engineering



Chemical
Engineering



Electrical
Engineering



Civil
Engineering



Computer
Engineering

Department of Biomedical Engineering

B.S. Biomedical Engineering Three Tracks

- **Biomechanics**
- **Instrumentation, Signals and Imaging**
- **Biomaterials and Tissue Engineering**



Biomedical Engineers develop technology to help prevent, diagnose and treat diseases, to help rehabilitate patients and to improve healthcare.

Biomedical Engineers design artificial joints and surgical instruments, medical devices and instrumentation, drug delivery systems and artificial tissues, etc.

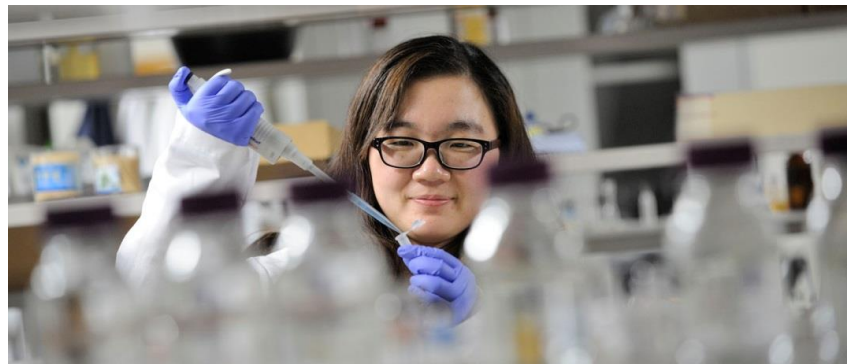


Department of Chemical & Biomolecular Engineering

B.S. Chemical Engineering

Chemical engineers transform raw materials into useful products such as chemicals, oil, gas, pharmaceuticals, polymers, paints, textiles, soaps, cosmetics, tires, nuclear power, food, etc.

Chemical engineers also design equipment and devise processes for manufacturing chemicals, pharmaceuticals, polymers, etc., by applying principles and technology of chemistry, physics, biology and engineering



Department of Chemical & Biomolecular Engineering

B. S. Corrosion Engineering

Corrosion engineers integrate knowledge of chemistry, physics and materials science to manage the effects of corrosion on materials, devices and structures.

Corrosion engineers develop new materials (alloys, polymers, ceramics) and strategies to slow down the rate of corrosion.

Corrosion costs the U.S. \$400 billion per year

UA has the nation's only B.S. in Corrosion Engineering

Students work with faculty, industry and government in National Center (NCERCAMP) to solve real-world issues



Department of Civil Engineering

B. S. Civil Engineering

Civil engineers are responsible for projects from start to finish related to infrastructure in a variety of companies and industries, private, public and governmental.

Civil Engineers provide the infrastructure for the growth and maintenance of municipalities. Bridges, roads, highways, traffic lights, buildings, water treatment, etc.

Concentrations focus on structures, geotechnical issues, transportation, or the environment.



Department of Electrical and Computer Engineering

B.S. Electrical Engineering

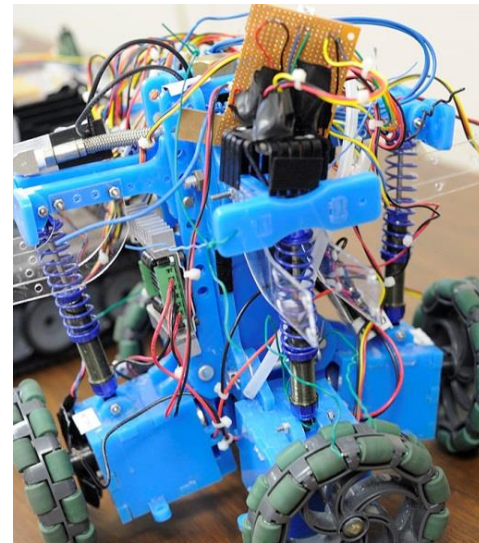
Electrical engineers are involved with the design and application of small scale electrical circuits as well as large scale power systems, and everything in between.



Department of Electrical and Computer Engineering

B.S. Computer Engineering

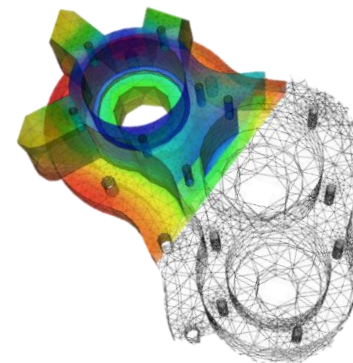
Computer engineers are concerned with both the design of computer-based hardware and software, as well as their integration into other devices.



Department of Mechanical Engineering

B.S. Mechanical Engineering

Mechanical engineers design, analyze and/or build various aspects of mechanical systems through their understanding of material properties and physics.



Department of Mechanical Engineering

B. S. Aerospace Systems Engineering

Aerospace systems engineers manage processes which require input from a variety of constituents to identify optimal solutions as they relate to the aerospace industry.

Aerospace Engineers become project managers in the aerospace industry
Nation's only B.S. Aerospace Systems Engineering, unless you join the Air Force



Admissions Criteria

When you are admitted to The University of Akron, you are also admitted to the College of Engineering. Depending on your HS preparation, you will be:

- **Directly Admitted to the program/major you have chosen if you have all three of requirements below**
 - 3.4 HS GPA
 - 24 ACT Comp (1160 SAT Composite)
 - 24 ACT Math (580 SAT Math)
- **Admitted as Pre-Admit until you meet the following criteria**
 - Complete 30 credit hours post High School Graduation
 - Complete Calculus II with a C- or better
 - Have a 2.3 grade point average in *at least* three of the following categories:
 - in all coursework
 - in all engineering coursework
 - in all *required* mathematics coursework
 - in all *required* science coursework (chemistry, physics, computer science, biology)

Why UA Engineering?

The Akron Engineering Experience

- Co-operative Education Experience
- Student Design Teams – something for every interest! Get involved, meet new people!
- Capstone Senior Projects
- Support Services



Student Design Teams

Teams design, budget, build and compete against students at other schools in projects related to their discipline

- Competitions are regional, national, or international
- Any engineering student can join any team
- Provides a teamwork skills and long-term friendships



NASA Robotics Mining
5th Place in 2018



Human Powered Vehicle
2nd Place Overall 2018



SAE Baja Team
2nd Place in Kansas 2018
6th Place in Maryland 2018
7th Place in Oregon 2018



Formula SAE Team
6th Place in Michigan 2018



Steel Bridge Design Team
2nd Place Overall in 2018

Engineering Student Organizations/Teams

- SAE Aero Design Team
- Engineering Service Design Team
- BME Design Team
- Corrosion Design Team
- Human Powered Vehicle Team
- Student Chapters of National Societies
 - ASME, IEEE, AIChE, ASCE, BMES, AIAA
- Engineering Student Council
- National Society of Black Engineers
- Society of Hispanic Professional Engineers
- Society of Women Engineers
- EUREKA Honors Engineering
- Tau Beta Pi
- ...and more!



Capstone Senior Design Projects

- A culminating design experience for all engineering students
 - Often inspired/supported by industry
 - Provides students with real-world/experiential learning

Mark your calendar:

April 26th (Friday) Engineering Design Day

Watch invitation emails in early April



Undergraduate Research

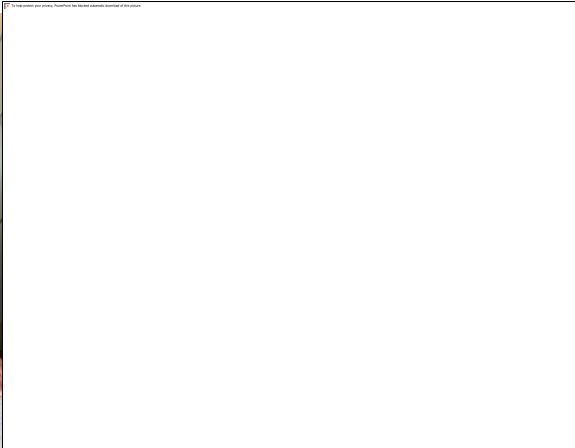
Undergraduate students participate in a variety of research projects in the College of Engineering.

Several faculty work with high school students as well.



Cooperative Education Program

- Real-world, paid (\$15-20/ hour average) engineering experience
- Optional, except for Aerospace Systems, 92-94% of eligible students participate
- 5th oldest in the US; started in 1914
- 40% of May 2017 graduates received a full-time offer from their Co-op employer
- Companies we work with are located in more than 41 states
- 94% of May 2017 engineering graduates have jobs or continued their education with 6 months of graduation
- Individualized interaction with staff at every step



Cooperative Education Program

	Fall	Spring	Summer
Year 1	Class	Class	Vacation/Class
Year 2	Class	Class	Vacation/Class/ Potential Co-op
Year 3	Class	Co-op I	Class
Year 4	Co-op II	Class	Co-op III
Year 5*	Class	Class	

- *Co-op can extend the program to five years as you are adding a year of work experience to your growing resume.*
- *You are only paying tuition when you are taking classes.*

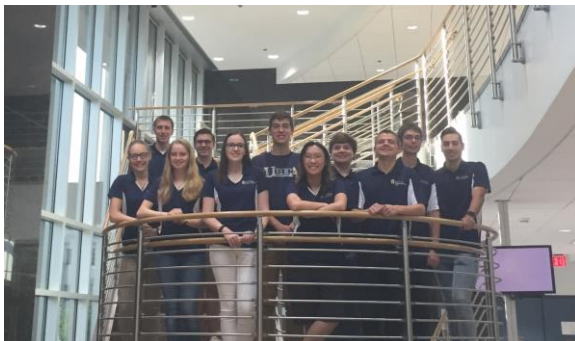
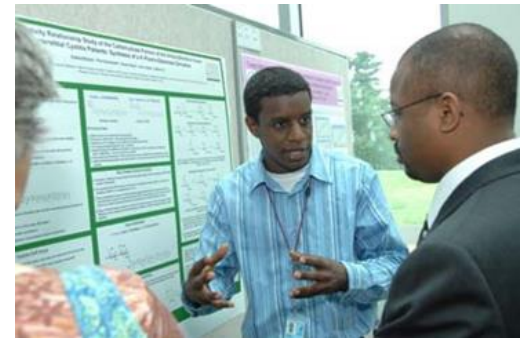
Co-op and Full-time Employers of UA Engineering Students

There have been nearly 2000 employers during the last decade, from all over the world.



Student Support

- Women in Engineering Program (WIEP)
- Increasing Diversity in Engineering Academics (IDEAs)
- Freshman Learning Communities
- Engineering Tutoring Program
- College of Engineering Academic Advisors
- Full-time Freshman Academic Advisor
- Faculty Advisors once in a major
- Living Communities (WIE, MIE)



The University of Akron – College of Engineering

Engineering Scholarships

- The College offered almost 400 scholarships for 2017-18.
- One online application for next year, 2018-2019, opening in October and **due January 5th**.
- Submit an application this fall at www.uaengineeringscholarships.com



*Thank you for your interest in
The University of Akron's
College of Engineering*

uakron.edu/engineering



@UAKron_Engr

Contact: Ms. Becky Hartman, Engineering Recruiter
rms45@uakron.edu
330-972-7816

The
University
of Akron