

# Applied Engineering

The Bachelor of Science in applied engineering (BS) program at Wichita State University is a hands-on program that prepares graduates to apply mathematical and scientific principles inherent to engineering to the management and design of systems, execution of new product designs, improvement of manufacturing processes, and the management and direction of the physical or technical functions of an organization. The program includes instruction in basic engineering principles, project management, industrial processes, production and operations management, systems integration and control, sustainable and environmental practices, quality control, and statistics. Applied engineers are prepared to take a project from design through implementation and are employed in a wide array of industries where they are typically responsible for implementing a suitable and sustainable design, or process improvement. They wear many hats in industry, commanding the necessary resources and personnel to contribute to an organization's bottom line.

The BS in applied engineering curriculum offers three specialized program concentrations:

- Engineering management;
- Process automation; and
- Sustainability and environmental engineering.

## Program Educational Objectives

Within a few years after graduation, our students will be able to:

1. Pursue gainful careers and practice successfully in appropriate engineering professions.
2. Remain technically current and adapt to rapidly changing technologies through continuous learning and self-improvement.
3. Remain curious about our changing world, integrate information from multiple sources to gain insight, and identify opportunities to create value.
4. Demonstrate independent thinking and function effectively in diverse teams to solve open-ended problems in an industrial environment; and
5. Communicate effectively and perform ethically and professionally in business, industry and society.

## Sequence of Courses

The applied engineering undergraduate program requires a minimum completion of 120 credit hours for graduation minus advanced placement credit. Technical elective courses enable a student to graduate with a broad background in applied engineering with a focus in one of three concentrations: engineering management, process automation, or sustainability and environmental engineering.

For further program information, please see the program pages in the catalog, visit the Applied Engineering website (<https://www.wichita.edu/academics/engineering/appliedengineering/>)<sup>1</sup> or contact:

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<sup>1</sup> Link opens new window.

## Majors in Applied Engineering

- BS in Applied Engineering - Concentration in Engineering Management (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/bs-applied-engineering-concentration-engineering-management/>)
- BS in Applied Engineering - Concentration in Process Automation (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/bs-applied-engineering-concentration-process-automation/>)
- BS in Applied Engineering - Concentration in Sustainability and Environmental Engineering (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/bs-applied-engineering-concentration-sustainability-environmental-engineering/>)

## Minors in, or of special interest to, Applied Engineering Students

- **Business Administration** — A minor in business administration is available to any student who is not pursuing a degree in the Barton School of Business. Please see the Barton School of Business section of the catalog for detailed minor in business administration (<http://catalog.wichita.edu/undergraduate/w-frank-barton-business/minor-business-administration/>) requirements.
- **Management** — A minor in management is available to any student whose major field or area of emphasis is outside of management. Please see the Barton School of Business section of the catalog for detailed minor in management (<http://catalog.wichita.edu/undergraduate/w-frank-barton-business/management/minor-management/>) requirements.
- **Computer Science** — The CS minor provides a valuable addition to the process automation major. Please see the Electrical Engineering and Computer Science section of the catalog for minor in computer science (<http://catalog.wichita.edu/undergraduate/engineering/school-computing/minor-computer-science/>) requirements.

## Certificates in Applied Engineering

- Certificate in Applied Data Analysis (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-applied-data-analysis/>)
- Certificate in Assistive Technology and Accessible Design (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-assistive-technology-accessible-design/>)
- Certificate in Cyber Physical Systems (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-cyber-physical-systems/>)
- Certificate in Facilities Management (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-facilities-management/>)
- Certificate in Sustainable Energy Systems (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-sustainable-energy-systems/>)
- Certificate in Sustainable Water Resources (<http://catalog.wichita.edu/undergraduate/engineering/applied-engineering/certificate-sustainable-water-resources/>)

## Courses in Applied Engineering

- Applied Engineering (APEN) (<http://catalog.wichita.edu/undergraduate/courses/apen/>)

- First-Year Seminar APEN (FYAP) (<http://catalog.wichita.edu/undergraduate/courses/fyap-first-year-seminar-apen/>)