

# Industrial Management and Applied Engineering

## Mission Statement

The mission of the School of Applied Engineering and Technology is to provide value to our stakeholders through innovation in applied engineering education.

The Industrial Management and Applied Engineering major has as its objective the training of qualified personnel who can develop and direct the production and distribution of products and services. The major is designed to prepare management-oriented technical professionals in the economic-enterprise system.

The Industrial Management and Applied Engineering curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree. A graduate of a two-year industrially-oriented occupational program, such as aviation, construction, drafting, data processing, electronics, machine tool, mechanical, and mining may have an appropriate preparation to pursue a Bachelor of Science degree with a major in Industrial Management and Applied Engineering.

Students with work related experience might receive credit toward the degree via IMAE 258. Additional flexibility in earning credit toward the degree is possible through cooperative work experience provided meaningful employment is available.

## Program Learning Outcomes (PLOs)

The Industrial Management and Applied Engineering program at SIU Carbondale (SIUC) prepares students to attain the following objectives, 3 to 5 years after graduation:

1. Work professionally in the fields of industrial management and applied engineering in either manufacturing, healthcare or service sectors, working in areas such as quality engineering, production/manufacturing engineering, lean/six sigma, logistics, supply chain management, or safety.
2. Achieve personal and professional success by assuming positions of leadership and/or increasing responsibility within the organization.
3. Pursue continued life-long learning through further graduate education, certifications, short courses or other training programs in engineering or related fields.
4. Participate in and contribute to professional societies and community services.
5. Utilize teamwork, communication, and engineering management skills.

## Bachelor of Science (B.S.) in Industrial Management and Applied Engineering

The Bachelor of Science in Industrial Management and Applied Engineering is designed to prepare graduates for supervisory and technical management positions in manufacturing. Curriculum requirements are broad based to enable the graduate to obtain employment in manufacturing areas such as quality control, processes, safety, methods analysis, and computer-aided manufacturing/robotics. The Capstone Option feature is available for students and is described in the Capstone Option section.

Students are required to earn a minimum of 6 credit hours of any combination of laboratory, hands-on, and/or practical experiences prior to completion of the program:

- Laboratory credit hours can be applied only to those laboratory courses that are approved by the program. Laboratory credit hours earned through an A.A.S. program are eligible for consideration.
- Hands-on experiences and/or practical experiences include credit hours obtained through the following courses: IMAE 258, IMAE 358, IMAE 319, and IMAE 342.

## B.S. Industrial Management and Applied Engineering Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements	39
Foundation Skills	13
ENGL 101, ENGL 102	6
UNIV 101	1
Mathematics (substitute Mathematics in major)	3
CMST 101	3
Disciplinary Studies	23
Fine Arts	3
Human Health	2
Humanities	6
Science (substitute Physics in major for 3 credit hours)	6
Social Science	6
Integrative Studies	3
Multicultural	3
Requirements for Major in Industrial Management and Applied Engineering (IMAE)	(6) + 81
PHYS 203A, PHYS 203B, PHYS 253A, PHYS 253B	(3) +5
MATH 108	(3)
MATH 140 or IMAE 307	3-4
PSYC 323 or IMAE 340	3
Degree Requirements: IMAE 110, IMAE 208, IMAE 305, IMAE 375, IMAE 390, IMAE 392, IMAE 442, IMAE 445, IMAE 450, IMAE 465, IMAE 470A, IMAE 470B, IMAE 476	39
Technical Electives	15
Electives	15-16
<b>Total</b>	<b>120</b>

## Continuous Improvement Minor

A minor in continuous improvement is designed to introduce undergraduate students to continuous improvement methodologies and tools that are applicable across a wide variety of industries from manufacturing to healthcare to service. The minor requires 12 credit hours of coursework, which includes IMAE 450, IMAE 465, IMAE 470A, and IMAE 476. All courses in the minor must be completed with a grade of C or better. All prerequisites for these classes must also be satisfied.

Students must consult the Industrial Management and Applied Engineering Academic Advisor to declare a minor.

## Professional Development Sequence (PDS) in Lean Six Sigma

The PDS in Lean Six Sigma is intended to enhance the marketability and training of students who wish to pursue careers in quality management and process improvement. Enrollment in the Industrial Management and Applied Engineering major is not required to complete the program. The PDS in Lean Six Sigma facilitates prospective students to transfer earned program credits to pursue a B.S. degree in Industrial Management and Applied Engineering at SIUC. Students not wishing to pursue a baccalaureate must complete the unclassified undergraduate application.

### Professional Development Sequence (PDS) in Lean Six Sigma Requirements

Degree Requirements	Credit Hours
Requirements for PDS in Lean Six Sigma	12

Courses: IMAE 450, IMAE 465, IMAE 470A, IMAE 470B.  
All courses are offered Face-to-Face and Online.

## Capstone Option for Transfer Students

A Capstone Option may be available in the Industrial Management and Applied Engineering major. Students holding technical associate degrees of at least 60 credit hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.0 are qualified. For the Industrial Management and Applied Engineering major, the associate degree or equivalent certification should be in an industry-related field. This option permits qualified students to fulfill their degree requirements by completing 60 credit hours of work approved by the Capstone advisor. Each individual's program of study may differ according to the previous academic work.

The Association of Technology, Management, and Applied Engineering accredits the Industrial Management and Applied Engineering program. For each curriculum, a minimum of 30 credit hours in Industrial Management and Applied Engineering courses must be taken in residence at SIUC.

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