

DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

Location: 2612B Cherry Building

Phone: (409) 880-8804

Chair: James Curry

Industrial and systems engineering serves vital functions in today's world and provides a wide range of career opportunities. It is particularly well-positioned to develop individuals who provide solutions for the fields of supply chain management, automation, data science, logistics, operations research, design and manufacturing, project management, six sigma and "lean" engineering, economic analysis, safety, quality assurance management, plant operation control/design, and managerial problems. Industrial and systems engineering deals not only with technology but also with people.

The bachelor's program in industrial engineering is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

Mission and Objectives

Mission

The mission of the Department of Industrial and Systems Engineering is to provide students with high-quality, accessible undergraduate and graduate industrial engineering education; to engage and empower students with skills and knowledge to thrive in professional careers, and to serve society through economic and technological development of Southeast Texas and beyond.

Educational Objectives

Constituents: Current students, alumni, employers, and faculty

The Bachelor of Science in Industrial Engineering (BSIE) program's educational objectives are to produce exceptional graduates who within a few years after graduation:

- Advance professionally with increasing leadership and responsibility beyond entry-level in an industry relevant to industrial engineering.
- Contribute to organizational objectives with significant societal benefits in an environmentally and ethically responsible manner.
- Engage in life-long learning through professional activities and training, the pursuit of higher educational degrees, and individual professional development.

Degree Information

Bachelor of Science Industrial Engineering Online (2+2) Option

The Department offers a Bachelor of Science degree in Industrial Engineering (BSIE) in a 2+2 online format. This program allows students to complete the final two years of an Industrial Engineering degree online with minimal travel from home. The program is designed for students who are unable to attend a traditional IE program due to geographic location and scheduling issues (work and other issues). The program also offers a lower-cost approach to becoming an Industrial Engineer.

The BSIE degree earned with this delivery method is identical to the degree earned by on-campus students. Our on-campus students often

enroll in the same online courses due to co-op and employment at local companies.

The 2+2 online program is designed for students who have completed lower-division courses at a community college or four-year institution and want to finish their industrial engineering degree via online instruction. All junior and senior courses are delivered via online instruction, except for a 3-day manufacturing lab that requires one weekend visit to Beaumont, Texas. Most freshmen and sophomore courses are also available online from Lamar or at your local community college. A maximum of 66 hours can be transferred from 2-year community colleges. To ensure that your transfer credits are maximized, it is important that you speak with a college of engineering undergraduate advisor early in the application process

Bachelor of Science in Industrial Technology (B.S.) Online

The department offers the Bachelor of Science in Industrial Technology (B.S.) in an online format. This algebra-based degree can accept up to 33 hours of technology credit from a 2-year AAS degree, certifications at a technology program, or military training. The degree covers topics of interest to the industry including project management, six sigma, lean manufacturing, logistics, supply chain management, work design, safety, maintenance, and production planning.

Programs

- Engineering (D.E.) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/engineering-deng/>)
- Engineering (M.E.) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/engineering-me/>)
- Engineering (MES) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/engineering-mes/>)
- Engineering Management (MEM) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/engineering-management-mem/>)
- Industrial Automation and Robotics Certificate (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/industrial-automation-robotics-certificate/>)
- Industrial Engineering (B.S.) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/industrial-engineering-bs/>)
- Industrial Engineering (B.S.) Online (2+2) Option (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/industrial-engineering-bs-online-2-2-option/>)
- Industrial Technology (B.S.) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/industrial-technology-bs/>)
- Management of Ports and Marine Terminals Certificate (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/management-ports-marine-terminals-certificate/>)
- Port and Marine Terminal Development and Operations Certificate (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/port-marine-terminal-development-operations-certificate/>)
- Port and Terminal Management (M.S.) (<https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/port-terminal-management-ms/>)

- [Ports, Trade and Global Logistics Certificate \(https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/ports-trade-global-logistics-certificate/\)](https://catalog.lamar.edu/college-engineering/industrial-systems-engineering/ports-trade-global-logistics-certificate/)

Student Outcomes

The student outcomes used by the industrial engineering program are those published in the ABET “Criteria for Accrediting Engineering Programs” document. Those outcomes are as follows:

- a. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- b. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- c. an ability to communicate effectively with a range of audiences.
- d. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- e. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- f. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- g. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Criteria 1. Curriculum

The curriculum must provide both breadth and depth across the range of engineering science, computer science, and engineering design topics implied by the title and objectives of the program.

The curriculum must include the design, analysis, operation and improvement of integrated systems that produce or supply products or services in an effective, efficient, sustainable and socially responsible manner.

The curriculum must utilize real-world experiences and business perspectives.

The curriculum must include the topical areas of productivity analysis, operations research, probability, statistics, engineering economy, and human factors.

Program Criteria 2. Faculty

The program must demonstrate that faculty members who teach core industrial engineering courses have an understanding of the professional practice and maintain currency in their respective professional areas.