

Industrial Engineering and Management

Department Information

- **Department Web Site:**
www.ndsu.edu/ime/ (<http://www.ndsu.edu/ime/>)
- **Credential Offered:**
 B.S.I.E.Mgt.; Minor
- **Official Program Curriculum:**
catalog.ndsu.edu/undergraduate/program-curriculum/industrial-engineering-management/ (<http://catalog.ndsu.edu/undergraduate/program-curriculum/industrial-engineering-management/>)

Industrial engineering students have the opportunity to design systems and processes that improve the quality and productivity of an organization's business activities. They employ a strong foundation in fundamental engineering and management skills to effectively integrate people and resources to create positive change. Simply put, students will design and implement the best way to get work done.

THE PROFESSION

The field of industrial engineering is inherently interdisciplinary and spans across various industries, including manufacturing, healthcare, hospitality, banking and finance, food processing, chemical and oil, distribution and logistics, and more. Industrial engineers play a crucial role in designing, enhancing, and installing integrated systems involving people, materials, information equipment and energy. Their responsibilities often encompass improving productivity, optimizing supply chains, project management, and conducting feasibility studies for new technologies, lean and just-in-time implementation, health care management and logistics, and systems integration and engineering solutions. Whether it involves reducing wait times in a rollercoaster line, streamlining an operating room, overseeing a global supply chain, developing high-performance automobiles, or resolving complex logistics issues, industrial engineers are at the forefront of driving efficiency and innovation.

THE PROGRAM

The Department of Industrial and Manufacturing Engineering (IME) at North Dakota State University provides two programs that culminate in a Bachelor of Science degree. Students can pursue a degree in either Industrial Engineering and Management or Manufacturing Engineering. Notably, NDSU has the only Industrial Engineering and Management program in North Dakota. The Bachelor of Science in Industrial Engineering and Management program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the commission's General Criteria and Program Criteria for Industrial and Similarly Named Engineering Programs. This accreditation reflects the program's commitment to maintaining high educational standards and ensuring its graduates are well-prepared for the engineering profession.

Motivated undergraduate students within the program have the opportunity to explore two options for accelerated master's degrees:

1. **Accelerated MBA:** The IE&M/MBA accelerated program is offered by the IME Department in collaboration with the College of Business. This program enables students to earn their MBA within one additional year.
2. **Accelerated Master of Engineering:** The advantage of the Master of Engineering program lies in the application of pre-established coursework at the 600 level to be applied to both degrees, offering a streamlined educational experience. This degree program offers a non-thesis option for those wishing to earn a graduate degree. The program consists of a minimum of 30 credits of study and a written examination and only requires one additional year of study beyond the undergraduate degree.

To be eligible for admission to the graduate school and pursue either the IE&M/MBA or Master of Engineering accelerated programs, students must have completed a minimum of 60 credits and maintained a cumulative GPA of 3.0 or higher.

THE FACULTY AND FACILITIES

The IME department is currently housed in the Engineering Building, which is part of an eight-building engineering complex. The department has seven laboratories well equipped for teaching and research, offering valuable support for students' educational and research needs. These specialized laboratories cover a range of areas, including computer simulation, human factors, automation and robotics, additive manufacturing and biomanufacturing, computational modeling, bioinformatics and operations research, PLC's, manufacturing processes, rapid prototyping, CNC machining, and microfabrication, as well as welding and precision manufacturing. In the fall of 2026, NDSU's College of Engineering is set to open the new Richard Offerdahl '65 Engineering Complex. This cutting-edge facility will feature state-of-the-art research and learning spaces, equipping future engineers to meet the ever-changing demands of both the University and industry for generations to come.

The faculty and staff within the IME department have extensive experience in industrial and manufacturing specialties. They prioritize a personalized learning environment, dedicated to personally knowing each student, recognizing their strengths, understanding potential challenges, and providing support whenever necessary. Upon completion of a degree at NDSU, students will leave not only with a strong foundation for career success but also the confidence and capability for lifelong personal growth. Additionally, they will have established a network of both friends and professional colleagues.

CAREER OPPORTUNITIES

Graduates of the IME programs at NDSU are employed in a diverse array of industries across the United States and globally. Industries seek individuals with a high level of education, adept problem-solving skills, and effective communication abilities. IME graduates are well-equipped to meet these demands, presenting them an endless number of opportunities for career choices and geographic locations, as well as fast-paced career growth. Graduates of the IME programs have become a source of talent working in industries such as health care, manufacturing, consulting, food, transportation and distribution, and information systems. Recent IME graduates command starting salaries in the top rank of engineering disciplines. According to the U.S. Bureau of Labor Statistics, the national median salary for industrial engineers is \$96,350 (<https://www.bls.gov/ooh/architecture-and-engineering/industrial-engineers.htm>).

TRANSFER ADMISSION

Students who transfer with an AA or AS degree will have lower division general ed credits satisfied.

SCHOLARSHIP AND FINANCIAL AID

The Department awards several scholarships annually. Scholarships are available for incoming freshman, transfer students, and currently enrolled students. Other forms of financial aid are available through the Office of Financial Aid and Scholarships.

SELECTIVE ADMISSION

Transfer students must have a minimum cumulative grade point average of 2.3.

INDUSTRIAL ENGINEERING AND MANAGEMENT MINOR

Students pursuing a major in any engineering discipline have the option to elect a minor in Industrial Engineering and Management. This elective path provides engineering students the opportunity to add important career-enhancing skills to their technological competencies. The elected courses in an IE&M minor add skills for integrating technology and resources within the complex framework of people, technology, machinery and information that constitutes a successful modern business enterprise. Students completing this minor will achieve a better understanding of organizational and management processes and will be better prepared to work in the multi-functional teams crucial to success in industry. The total requirement for this minor is 18 credits (6 credits are required courses and 12 credits of approved electives), 9 of which must be unique and not count towards the major.

Sample Program Guide

IMPORTANT DISCLAIMER: This guide is not an official curriculum. This guide is a sample four-year degree plan of how students might plan this major with other degree requirements to complete their education in four years. Student plans will vary from this sample due to a variety of factors, such as, but not limited to, start year, education goals, transfer credit, and course availability. To ensure proper degree completion, enrolled students should utilize Degree Map (<https://www.ndsu.edu/registrar/degreemap/>) and Schedule Planner (<https://www.ndsu.edu/onestop/degree-map-and-planning/>) in Campus Connection and consult regularly with academic advisors to ensure graduation requirements are being met.

Freshman			
Fall	Credits	Spring	Credits
CHEM 121 & 121L		4 IME 111	3
ENGL 110		3 MATH 166	4
ENGL 120		3 ME 212	3
MATH 165		4 ME 221	3
Comp Sci Elective (CSCI 122, 159, 160, 227, orvECE 173)		3 CHEM 122	3
		17	16
Sophomore			
Fall	Credits	Spring	Credits
COMM 110		3 IME 311	3
IME 330		3 ME 223	3
MATH 129		3 MATH 266	3
MATH 259		3 PHYS 252 & 252L	5
ME 222		3 Gen Ed Social & Behavioral Science/ Global Perspectives	3

Gen Ed Humanities/Fine Arts/ Cultural Diversity		3		
		18		17
Junior				
Fall	Credits		Spring	Credits
IME 456		3	IME 461	3
IME 460		3	IME 470	3
ENGL 321		3	IME 472	3
CE 309		3	ME 350	3
IME 440		3	Gen Ed Social & Behavioral Science	3
			Gen Ed Wellness	2
		15		17
Senior				
Fall	Credits		Spring	Credits
IME 480		3	IME 450	3
ENGR 327		3	IME 489	3
IME 482		3	Engr Sci Elective (Select one from EE 206, ECE 275, ECE 301)	3
IME 485		3	Tech Elective (Select from official curriculum)	3
Tech Elective (Select from official curriculum)		3	Tech Elective (Select from official curriculum)	3
		15		15

Total Credits: 130

Degree Notes:

- Grades less than 'C' will not be accepted for required courses in CHEM, MATH, and PHYS.
- Students may request approval for other 300-400 level engineering or related courses to be approved as technical electives. To request approval, a student should submit a request to the IME Department indicating the course of interest and why the course should be approved as a technical elective. This request will be reviewed by the IME Department Chair for approval.
- 300-400 level BUSN courses require at least junior standing and a minimum 2.50 cumulative GPA.