

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/>)

As an industrial engineer students will have the opportunity to design systems and processes that improve the quality and productivity of an organization's business activities. Students will also employ a strong base of fundamental engineering and management skills to effectively integrate people and resources to create positive change. Quite simply, students will design and implement the best way to get work done.

THE PROFESSION

Industrial engineering is an interdisciplinary program by nature and are hired in every industry type such as manufacturing, healthcare, hotel, banking and finance, food processing, chemical and oil industry, distribution and logistics, and more. Industrial engineers are involved in the design, improvement and installation of integrated systems of people, materials, information equipment and energy. Industrial engineers are often responsible for productivity improvements, supply chain optimization, project management, feasibility studies for new technologies and applications, lean and just-in-time implementation, health care management and logistics, and systems integration and engineering. Whether it's shortening a rollercoaster wait line, streamlining an operating room, managing a worldwide supply chain, manufacturing and designing superior automobiles, or solving logistics problems, industrial engineers are at the forefront.

THE PROGRAM

The Department of Industrial and Manufacturing Engineering (IME) at North Dakota State University offers two programs leading to either a Bachelor of Science degree in Industrial Engineering and Management or in Manufacturing Engineering. 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> (<https://www.abet.org/>), under the General Criteria and the Industrial and Similarly Named Engineering Programs Program Criteria.

Undergraduate students who excel in the program may consider pursuing an MBA/IE&M accelerated program offered by the IME Department in collaboration with the College of Business. This option gives the student a jump-start on their MBA requirements while they finish their Bachelor of Science degree by allowing pre-established coursework at the 600 level to be applied to both degrees. In order to apply to the graduate school, students must complete at least 60 credits and have a cumulative GPA of 3.0 or higher.

THE FACULTY AND FACILITIES

The IME department is 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 to provide valuable services in support of students' educational and research needs. The departmental laboratories include computer simulation, human factors, automation and robotics, additive manufacturing engineering, quality & reliability, SPACHES, PLC's, manufacturing/fabrication, rapid prototyping, CNC machining, and microfabrication, as well as electronics, welding and precision manufacturing.

The faculty and staff have extensive experience in industrial and manufacturing specialties. The IME faculty and staff will know your name, understand your potential and problems, and will give encouragement when you need it. When you leave NDSU, you will have built excellent capabilities for career success, the confident ability for life-long personal growth, and a network of friends and professional colleagues.

CAREER OPPORTUNITIES

NDSU industrial engineers are employed in a wide range of industries throughout the United states. Industry demands highly educated, skilled problem solvers with great communication abilities. IME graduates are well-positioned to meet these needs. This gives our graduates nearly an endless number of opportunities for career choices and geographic locations, as well as fast-paced career growth. The IME programs' core will help you develop industry-standard skills—the skills you can use to open the door to many career opportunities that can offer you financial rewards and exceptional professional 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 Bureau of Labor Statistics, the national median salary was \$95,300 (<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 majoring in any engineering discipline may elect a minor in Industrial Engineering and Management. These optional studies offer 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 of people, technology, machinery and information that make up the successful modern business enterprise. Students completing this minor will achieve better understanding of organizational and management processes and will be better prepared to work in the multi-functional teams crucial to success in industry. Total requirement 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: A Sample Program Guide provides an unofficial guide of program requirements and should be used by prospective students who are considering attending NDSU in the future. It is NOT an official curriculum and should NOT be used by current NDSU students for official degree planning purposes. Note that the official curriculum used by current NDSU students can vary from the Sample Program Guide due to a variety of factors such as, but not limited to, start year, education goals, transfer credit, and course availability.

To ensure proper program 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 their academic advisor to ensure 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 (Select from approved list of computer science electives)		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/Global Perspectives		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 from approved list of electives)	3
IME 485		3 TECHNICAL ELECTIVE (Select from approved list of electives)	3
TECHNICAL ELECTIVE (Select from approved list of tech electives)		3 TECHNICAL ELECTIVE (Select from approved list of electives)	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.