

# Industrial and Manufacturing Engineering

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## Program and Application Information

<b>Interim Department Chair:</b>	Dr. Om Prakash Yadav
<b>Assistant to Chair:</b>	Beth Dahl
<b>Department Location:</b>	202 Civil & Industrial Engineering Bldg.
<b>Department Phone:</b>	(701) 231-9818
<b>Department Web Site:</b>	<a href="http://www.ndsu.edu/ime/">www.ndsu.edu/ime/</a>
<b>Application Deadline:</b>	International applications due April 30 for fall; August 15 for spring and summer. Domestic applications due one month prior to start of semester. For assistantship consideration, fall applications due March 1; limited spring openings.
<b>Degrees Offered:</b>	Ph.D., M.S.
<b>Test Requirement:</b>	GRE-general M.S.310 (Verbal + Quantitative) and 160 Quantitative minimum and Analytical Writing score of 4.0 or better; Ph.D. 310 or better (Verbal + Quantitative) and 160 Quantitative minimum and Analytical Writing score of 4.5 or better
<b>English Proficiency Requirements:</b>	TOEFL iBT 81 (Speaking 23; Writing 21) IELTS 6.5 (Writing 5.5; Speaking 5.5)

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## Program Description

The Department of Industrial and Manufacturing Engineering offers graduate studies at both the Master of Science and Doctor of Philosophy levels. A Master of Science degree may be earned in either Industrial Engineering and Management (IE&M) or Manufacturing Engineering (MfgE). The Master of Science degree can be completed through a thesis option or project option. The project option is available only to candidates who have been professionally employed in industrial engineering, manufacturing engineering or a related field and are working in their field at the time of application for admission to graduate study. The IE&M master's programs is designed to equip students with the ability to analyze, design, and manage industrial and business systems as well as to enable students to develop scholarly abilities to further pursue a Ph.D. degree in industrial and manufacturing engineering. Students have an opportunity to conduct research in the development of theoretical concepts and industrial systems.

For more information about our department and programs, please visit our department website at [www.ndsu.edu/ime/](http://www.ndsu.edu/ime/).

## Admissions Requirements

Graduate study in the Department of Industrial and Manufacturing Engineering is open to all qualified baccalaureate graduates from universities and colleges of recognized standing. In addition to the Graduate School requirements, applicants must submit a GRE score.

## Financial Assistance

There are a limited number of teaching assistantships available in Industrial and Manufacturing Engineering, which are normally assigned as support for classes with large enrollments and/or heavy laboratory content. Research assistantships are offered when student capabilities and background experience match the needs of the project. While teaching assistantships are funded through the University, research assistantships are generally funded through externally-funded grants and contracts. In both cases, assistantships are considered as employment, and the graduate student should view these appointments as a job. The student's thesis or dissertation may or may not be in the area of their job duties for the assistantship.

Full assistantships are for half-time employment (20 hours per week). Tuition for all graduate credits, resident or nonresident, are waived for individuals officially appointed as research or teaching assistants. Student fees are not waived. When a student is offered an appointment as a Graduate Research Assistant, the faculty and the department will carry the expectation that the student has made a full commitment to fulfill both the degree requirements and the job responsibilities.

The Master of Science degree in Industrial Engineering and Management or Manufacturing Engineering requires 30 credits of graduate-level study. For the thesis option, of the required minimum 30 credits, at least 21 credits must be didactic courses numbered 601-689, 691, 700-789, and 791, while the research credits (798) must be at least 6, but not more than 10, credits. For the project option, of the required minimum 30 credits, at least 27 credits must be didactic courses numbered 601-689, 691, 700-789, and 791, while the research credits (797) must be at least 3, but not more than 4, credits.

The Doctor of Philosophy degree requires 60 credits beyond the M.S. requirement (90 credits total). Didactic course work must account for at least 27 credits, and of these, 15 credits must be earned in 700-level courses. It is customary for the remainder of the didactic credit requirement to be dedicated directly to the dissertation, either through course preparation, focused research or writing.

For either the M.S. or Ph.D., all courses taken outside of the IME Department must be approved in advance by the student's academic adviser. The total course of study must be approved by the student's academic adviser, thesis committee, and department chair. Students completing graduate degrees within the IME Department responsibility are expected to exhibit demonstrable expertise in the core competencies of either industrial engineering or manufacturing engineering. Students whose undergraduate major is in another field may be required to include some or all of the core competencies in their graduate coursework. For further information in this regard, please consult the IME department.

Each new student must complete a preliminary thesis or project proposal within six months of beginning graduate studies, and it is recommended that this be completed during the first semester in residence. The proposal, if approved by the IME Graduate Studies Committee, will provide the direction for the remainder of the student's degree work. At the same time, the student will choose a thesis or project adviser from the IME department faculty. By the end of the first year in residency, the student must have selected a supervisory committee. This committee will be chaired by the faculty adviser and will provide direction, advice and examination of the student's work and achievement.

**Canan Bilen-Green, Ph.D.**

University of Wyoming, 1998

Research Interests: Statistical Process Control, Quality Management

**Gokhan Egilmez, Ph.D.**

Ohio University, 2012

Research Interests: Applied Operations Research, Metaheuristic Optimization

**Kambiz Farahmand, Ph.D., P.E.**

University of Texas, 1992

Research Interests: Ergonomics Design, Layout Planning and Management

**Bashir Khoda, Ph.D.**

University at Buffalo, 2012

Research Interests: Bio-Manufacturing, Additive Manufacturing

**Val R. Marinov, Ph.D.**

Technical University of Sofia, 1992

Research Interests: Advanced Packaging for Flexible Microelectronics

**Jing Shi, Ph.D.**

Purdue University, 2004

Research Interests: Renewable Energy and Healthcare Systems Modeling

**Chrysafis Vogiatzis, Ph.D.**

University of Florida, 2014

Research Interests: Applied Operations Research

**Om Prakash Yadav, Ph.D.**

Wayne State University, 2002

Research Interests: Reliability Engineering, Robust Design