Industrial Engineering, M.S.I.E., Ph.D.

Degrees Offered

- Masters of Science, Industrial Engineering (M.S.I.E.)
- Doctor of Philosophy, Industrial Engineering (Ph.D.)

Masters of Science in Industrial Engineering

A graduate of this master's program will be prepared to accomplish the following:

1. Practice industrial engineering and to initiate and develop leadership roles in business, industry and/or government
2. Continue professional development and life-long learning
3. Interact in society and business in a professional and ethical manner
4. Be proficient in written and oral communication and to utilize people-oriented skills in individual and team environments
5. Apply the skills from industrial engineering to be proficient in his/her chosen field or further advanced studies

In order to meet the educational objectives, students of this master's program must be able to meet the following educational outcomes at the time of their graduation. Students will have acquired:

1. The ability to use and master modern and classical industrial engineering methodologies in their area of concentration
2. The ability to apply knowledge of math, science, and engineering
3. The ability to do research, and to design and conduct experiments, analyze and interpret data, develop implementation strategies, and shape recommendations so that results will be achieved and findings will be communicated effectively
4. The ability to work individually, on teams, and/or on multi-disciplinary teams to identify, formulate, and solve problems using industrial engineering knowledge, skills, and tools
5. The ability to design and implement or improve integrated systems that include people, materials, information, equipment, and energy using appropriate analytical, computational, and experimental practices
6. An understanding of professional and ethical responsibility and the broad education and knowledge of contemporary issues necessary to understand the impact of solutions in a global and societal context
7. A recognition of the need for and an ability to engage in life-long learning
8. The professional characteristics expected of a successful industrial engineer

Doctor of Philosophy with a Major in Industrial Engineering

A graduate of the Industrial Engineering doctoral program will be prepared to:

1. Practice/teach Industrial Engineering and to initiate and develop leadership roles in education, business, industry and/or government.
2. Continue professional development and life-long learning.
3. Interact in society and business in a professional and ethical manner.
4. Be proficient in written and oral communication and to utilize people-oriented skills in individual and team environments.
5. Apply the skills from Industrial Engineering to be proficient in his/her chosen field.

In order to meet the educational objectives, students of the Industrial Engineering Doctoral program must be able to meet the following educational outcomes at the time of their graduation. Students will have acquired:

1. The ability to use, master, and teach modern and classical Industrial Engineering methodologies in their area of concentration
2. The ability to apply knowledge of math, science, and engineering
3. The ability to do research, and to design and conduct experiments, analyze and interpret data, develop implementation strategies, and shape recommendations so that results will be achieved and findings will be communicated effectively
4. The ability to work individually, on teams, and/or on multi-disciplinary teams to identify, formulate, and solve problems using industrial engineering knowledge, skills, and tools
5. The ability to design and implement or improve integrated systems that include people, materials, information, equipment, and energy using appropriate analytical, computational, and experimental practices
6. A thorough understanding of professional and ethical responsibility and the broad education and knowledge of contemporary issues necessary to fully evaluate the impact of solutions in a global and societal context.
7. A recognition of the need for and an ability to engage in life-long learning.
8. The professional characteristics expected of a successful Industrial Engineer.
Masters Admissions

To be eligible for admission into the Master of Science in Industrial Engineering degree program, a candidate must fulfill the following requirements:

- Bachelor of science degree from an engineering, physics, chemistry, computer sciences, mathematics, or a similar technical or science program. The applicant must have completed at least two years of calculus or equivalent mathematics in their degree program.
- Earned a GPA of 3.0 or better (out of a possible 4.0). Applicants with a cumulative GPA of less than 3.00 may be considered for admission if they have professional or other relevant experience.
- A statement of purpose.
- Two letters of recommendation
- Official transcripts of all previous college course work
- While not required for admission, all applicants are encouraged to submit GRE scores for fellowship and funding options.
- International applicants must meet the WVU requirement of English language proficiency (https://graduateadmissions.wvu.edu/how-to-apply/apply-for-2023-2024/international-graduate-applicant/).

Doctoral Admissions

To be eligible for admission into the doctoral program, a candidate must fulfill the following requirements:

- A bachelors and masters degree from engineering, physics, chemistry, computer sciences, mathematics, or a similar technical or science program. The applicant must have completed at least two years of calculus or equivalent mathematics in their degree program.
- Earned a GPA of 3.0 or better (out of a possible 4.0) in their undergraduate and graduate coursework. Applicants with a cumulative GPA of less than 3.0/4.0 may be considered for admission if they have professional or other relevant experience.
- A statement of purpose.
- Two letters of recommendation
- Official transcripts of all previous college course work
- While not required for admission, all applicants seeking fellowship and departmental funding must submit GRE scores.
- International applicants must meet the WVU requirement of English language proficiency (https://graduateadmissions.wvu.edu/how-to-apply/apply-for-2023-2024/international-graduate-applicant/).

Direct-Track Doctoral Admissions

The Department of Industrial and Management Systems Engineering offers a direct track option from the bachelor of science (B.S.) to the doctor of philosophy (Ph.D.) degree for prospective qualified students with exceptional academic record and/or professional experience. The qualified students must hold a B.S. degree in engineering, physics, chemistry, computer sciences, mathematics, or a similar technical or science program. In general, a degree in one of the related science programs is required with at least two years of calculus or equivalent mathematics. This is an accelerated track that provides outstanding candidates the option of earning a Ph.D. degree in less than five years after graduating from an undergraduate program by engaging early in their Ph.D. dissertation research. To qualify for the direct-track degree option, all applicants must have:

- Applicants must have earned a GPA of 3.0 or better (out of a possible 4.0) in their undergraduate
- A statement of purpose
- Two letters of recommendation
- Official transcripts of all previous college course work
- While not required for admission, all applicants seeking fellowship and departmental funding must submit GRE scores.
- International applicants must meet the WVU requirement of English language proficiency (https://graduateadmissions.wvu.edu/how-to-apply/apply-for-2023-2024/international-graduate-applicant/).

Admission Requirements 2024-2025

The Admission Requirements above will be the same for the 2024-2025 Academic Year.

MSIE Major Code: 3045
PhD Major Code: 3046

For specific information on the following programs, please see the links to the right:

- Industrial Engineering, M.S.I.E.

For specific information on the following programs, please see the links to the right:

- Industrial Engineering, Ph.D.