



MSIE/MBA: A Two Year Dual Degree Program
Department of Industrial Engineering
Swanson School of Engineering, University of Pittsburgh

Master of Business Administration & Master of Science in Industrial Engineering

The Department of Industrial Engineering, in partnership with the University of Pittsburgh's Katz Graduate School of Business (KGSB), offers an integrated program that leads to a Master of Science in Industrial Engineering from the Swanson School of Engineering and a Master of Business Administration degree from Katz. This MSIE/MBA dual-degree program is designed to hone your skills to meet the growing needs of industry sectors with technology and/or engineering as drivers for managers to oversee a range of critical activities requiring sophisticated engineering *and* business skills such as product development and management.

Indeed, the "signature track" – the major focus area of study – in the MBA/MSIE program is the *Management of Engineered Products*. This focus leverages and integrates expertise and facilities at the Swanson School of Engineering and Katz in perhaps the single most critical activity for and engineering as well as all other technology companies – the design, development, and deployment of new products and services, and the ongoing management of the company's product line. This program is designed to give students the ability to complete two rigorous graduate programs in less than two years, combining the best of the Katz MBA with a technology specialization. Students in this integrated program earn both a Master of Science in Industrial Engineering and a Master of Business Administration from the Katz School in approximately 20 months – or in as few as 18 months, with a modest course overload in some terms.



Academic Details

The curriculum is designed to provide cutting edge – and highly marketable – business and technical skills by combining the options available in the MSIE and the Katz MBA programs. The full-time MSIE/MBA program is consists of a total of at least 64.5-65.5 credits, broken up as follows:

- at least 39 credits of business courses, taken at Katz: Core 27, Tech Workshops 3, Electives 7.5, Integrated Project* 1.5
- at least 25.5-26.5 credits of I.E. courses, taken at the Swanson School of Engineering: Core 6-7, (the core course I.E. 2000: Introduction to I.E. (1 cr.) is required only for students without undergraduate degree in Industrial Engineering), Electives 18, Integrated Project* 1.5

The part-time MSIE/MBA program requires a total of at least 69-70 credits and is broken up as follows:

- at least 43.5 credits of business courses, taken at Katz: Core 34.5, Electives 7.5, Project* 1.5
- at least 25.5-26.5 credits of I.E. courses, exactly as required in the full-time option

*The integrated project is a single course that earns a total of 3 credits; 1.5 each in Business and Industrial Engineering. It uses an integrated business and engineering/technology perspective to address important management issues at a company. In most cases, this project is likely to be in the form of an internship at the company.

Note that the above curriculum reduces the total number of credits required in the traditional MBA program by 9, since three I.E. classes are counted towards satisfying these credits. Similarly, the 1.5 MBA credits from the integrated project are applied towards the MSIE program and the 3-credit Business Statistics is used to substitute for I.E. 2005: Probability & Statistics for Engineers, which is normally a required core course in the I.E. program. Thus the total number of credits required in the traditional MSIE program is reduced by 4.5. Out of the 18 I.E. elective credits, at least 6 must come from the elective core of IE 2003: Engineering Management, IE 2004: Database Design, IE 2007: Statistics and Data Analysis, and IE 2100: Supply Chain Analysis.

Who Should Apply?

Students with an interest in a rigorous program designed to prepare them for management careers involving product development and management (or in other areas involving managerial *and* engineering/technical skills) at companies with a significant engineering and/or technological focus. They must hold an undergraduate degree in engineering or in the *hard* sciences or mathematics. At least two years of relevant industry experience is preferred.



MSIE/MBA: A Two Year Dual Degree Program

Sample Curriculum (Full-Time MSIE/MBA Dual Degree Program)

- Subject to change depending on the actual course schedule offered at KGSB and Industrial Engineering
- Students can elect to take additional credits of electives at either school up to a total of 72 credits

Term	Business Core/Required	Engineering Core/Required	Katz Credits	Engr. Credits	Term Credits
August (before Fall term)	2-week transition module				
Fall 1	Statistics 3 Accounting 3 Finance or Marketing 3	IE 2000: Intro to IE 1 IE 2006: Manufacturing Systems 3 Industrial Engineering Elective 1 3	9	6-7	15-16
Spring 1	Information Systems 3 Decision Technologies 1.5 Marketing or Finance 3 Elective 3	IE 2001: Operations Research 3 Industrial Engineering Elective 2 3	10.5	6	16.5
Fall 2 or Spring 2	Integrated Project (1.5 credits each in Business and Industrial Engineering)		1.5	1.5	3
Fall 2	Economics 3 Org Behavior 3 Electives 3	Industrial Engineering Elective 3 3 Industrial Engineering Elective 4 3	9	6	15
Spring 2	Strategic Management 3 Electives 1.5 Distributed req. 1.5 Technical Workshops 3	Industrial Engineering Elective 5 3 Industrial Engineering Elective 6 3	9	6	15
Total			39	24.5-25.5	64.5-65.5

Signature Track

The “signature track” – the major focus area – is on *Management of Engineered Products*. This track leverages faculty expertise at Katz and the Swanson School of Engineering in the area from a variety of perspectives to yield an integrated, cross-functional course of study in design, development, and deployment of new products and services, and the ongoing management of the company’s product line. Laboratories at the School of Engineering in Reverse Engineering and Rapid Prototyping provide opportunities for hands-on product development projects.

Electives for this track include:

- Business courses in Product Development and Management, Marketing Research, Strategic Cost Management, Management of Technological Innovation, and Technical Strategy and Intelligence. These courses cover marketing, accounting, strategy, and interdisciplinary perspectives
- Industrial Engineering courses in Reverse Engineering and Rapid Prototyping, Automation in Manufacturing and Product Design, Computer Aided Manufacturing, and Facility Layout and Material Handling.

Of course, other focus areas are possible, depending on the student’s interests. For example, one may choose to combine one of the other focus areas offered by Industrial Engineering (in Operations Research and Engineering Management) with one of the signature programs in a particular functional area (e.g., in strategy, operations, or finance) offered at Katz.



MSIE/MBA: A Two Year Dual Degree Program

Frequently Asked Questions

- Q.** What is the advantage to pursuing the MBA/MSIE dual degree instead of just a regular MBA?
- A.** In less than the two years in typically takes to get an MBA, you get an MBA *and* a Master of Science in Industrial Engineering, in a rigorous, integrated program that prepares you for a career in product development and management (or in other relevant areas) at manufacturing and service companies with a significant engineering and/or technological focus. The combination of managerial and engineering/technical skills that this program is designed to provide is particularly valued in today's environment by the se companies.
- Q.** What types of jobs could a graduate from the MBA/MSIE program expect to hold upon graduation?
- A.** The primary focus of the program is on specialized training in the area of design, development and management of engineered/technology-based products and services. You would be an ideal member (or leader) of a cross-functional product development team, or in product/product line management. Other options include manufacturing management, supply chain management, operations research, and positions in other business functional areas – as well as opportunities in new business start-ups in the engineering/technology sectors.
- Thus, examples of the types of jobs you could expect to hold include director of product development, product/product line manager, project manager, director of business planning, director of product engineering/manufacturing, logistics manager, operations program analyst, and vice president of manufacturing.
- Q.** Besides Management of Engineered Products, what other options for focus areas are available within the MBA/MSIE program?
- A.** While Management of Engineered Products in the “signature track,” you are free to choose from a menu of options for specialization available at Katz and at the Industrial Engineering department, depending on your interests. For example, you may combine one of the other focus areas offered by Industrial Engineering (in Operations Research, Information Systems Engineering, and Engineering Management) with one of the signature programs in a particular functional area (e.g., in strategy, operations, or finance) at Katz.
- Q.** What is the purpose of the summer project or internship?
- A.** The summer project focuses on an integrated business and engineering/technology perspective to address important management issues at the kinds of companies you would target for your permanent job. In most cases, this project is likely to be in the form of an internship at the company.

In addition to providing important experience in applying the skills learned in the MBA/MSIE dual degree program to real business problems, the project provides significant value to the host company. In addition, you might have an inside track on possible full-time positions after your graduation with the company for which you worked over the summer!

Why an MBA/MSIE dual degree at the University of Pittsburgh?

- The Katz MBA is one the leading 11-month programs. The Industrial Engineering department is one of the oldest in the country, and its programs have been consistently ranked among the Top Twenty. The combined expertise available at the Katz Business School and the Swanson School of Engineering is leveraged to offer an integrated program that is market-oriented, while meeting the academic requirements of to the two degrees – the MBA and the Master of Science in Industrial Engineering – without compromise.
- The program can be completed in 22 months – or, with a modest overload of credits in some terms – in 18 months. This makes it among the fastest dual degree programs of this type anywhere in the nation, and is made possible by leveraging the platform provided by the Katz 11-month MBA.
- The program's major focus area is on *Management of Engineered Products*. This “signature track” offers an integrated, cross-functional course of study in design, development, and deployment of new products and services.
- Laboratories at the Swanson School of Engineering in Reverse Engineering and Rapid Prototyping provide opportunities for hands-on product development projects.



MSIE/MBA: A Two Year Dual Degree Program

Career Options

While the primary focus of the program is on specialized training in the area of design, development and management of engineered/technology-based products and services, there are other options. These include manufacturing management, supply chain management, operations research, and positions in other business functional areas – as well as opportunities in new business start-ups in the engineering/technology sectors.

The Swanson School of Engineering: University of Pittsburgh (Pitt)

Founded in 1787, the University of Pittsburgh is one of the nation's leading centers of teaching and research. Pitt serves over 32,000 students, with the majority enrolled at the Pittsburgh campus in Oakland. Since conferring its first engineering degree in 1846, the Swanson School of Engineering has played an important role at the University of Pittsburgh. The school is research oriented and offers a wide scope of engineering disciplines in seven departments. The school has approximately 100 full-time faculty, many of whom have had industrial experience and continue to participate in industrial, educational, and governmental consulting activities.

Department of Industrial Engineering

The Industrial Engineering (I.E.) Department is one of five oldest in the world and has consistently been ranked in the top 20 programs nationally. The departmental philosophy is to develop in all students a strong commitment to the profession, to provide those earning a master's degree the technical and managerial skills necessary to practice at a sophisticated level, and to provide those earning a doctoral degree the scholarly experience necessary for a lifetime of innovation and research. To help accomplish these goals, the department depends on a faculty that is active in research and is committed to outstanding teaching and mentoring.

The Department of Industrial Engineering offers a professional M.S. degree program as well as a Ph.D. program, both with several choices of major areas of concentration. These include the primary areas of Operations Research, Product Realization & Manufacturing Systems, and Engineering Management. In addition, the department also offers an innovative flexible doctoral program with minimal residency requirements that is aimed at outstanding individuals who already have a Master's degree.

Living and Studying in Pittsburgh

Pittsburgh has consistently been voted one of the nation's most livable cities. A friendly city, enriched by many unique ethnic neighborhoods, Pittsburgh is also a comparatively safe city with a significantly lower crime rate than most other major metropolitan areas.

The University of Pittsburgh is located in the Oakland cultural section of the city. It is adjacent to major museum centers, concert halls, shopping areas, restaurants, and a variety of housing. The Pitt campus is within easy walking distance of the 450-acre Schenley Park, which includes miles of wooded trails, a swimming pool, ice rink, golf course, tennis courts, and a large greenhouse conservatory.

For further information, please contact:

The Department of Industrial Engineering

Attn: Graduate Programs

1048 Benedum Hall

University of Pittsburgh

Pittsburgh PA 15261

Email: gradie@enr.pitt.edu

<http://www.enr.pitt.edu/industrial/>