

Industrial Mathematics P.S.M.

Industrial Mathematics Major

This program is currently suspended.

The Professional Science Master's Degree in Industrial Mathematics is designed to prepare students for a career in industry. The curriculum combines a business and experiential component with advanced course work.

Students interested in this program must submit a completed Application for Admission to Graduate Study and should refer to their MyUNiverse Student Center To-Do list or contact the Department of Mathematics for any other application requirements. Graduate information and application for graduate admission can be found at <https://admissions.uni.edu/application>.

The Graduate Record Examination (General Test) **is not** required for admission to the program.

Only graduate courses (course numbers 5000 or above) will apply to a graduate degree, even if the undergraduate course number (4999 or less) is listed. No exceptions will be made.

This major is a **non-thesis** program. A **minimum of 30 hours** is required. A **minimum of 12 hours of 6000-level course work is required.**

No comprehensive examination is required for this **non-thesis** option.

Requirements for admission to the program include the completion of a bachelor's degree with a GPA of 3.00 or higher and successful completion of the following university-level courses:

Prerequisite Courses:

MATH 1420	Calculus I	4
MATH 1421	Calculus II	4
MATH 2422	Calculus III	4
MATH 2500	Linear Algebra for Applications	3
STAT 1772	Introduction to Statistical Methods	3
One course in computer programming (or equivalent):		
CS 1130	Visual BASIC Programming	3
CS 1160	C/C++ Programming	3
CS 1510	Introduction to Computing	4

This major requires completion of 9 hours of the PSM Industrial Mathematics core, and 21 hours of electives.

Required Core:

MATH 6745	Deterministic Operations Research	3
MATH 6747	Discrete-Event System Simulation	3
MATH 6796	PSM Capstone Project	3

Electives from the following: **21**

Marketing:

MKTG 4170/5170	Marketing Strategy
or MKTG 6170	Marketing Management

Management:

MGMT 6250	Business Strategy
MGMT 6262	Cross-Functional Operations

Finance:

FIN 6266	Financial Management and Markets
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Technology:

TECH 3024/5024	Solid Modeling and Additive Manufacturing for Design
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Mathematics:

ACT SCI 4735/5735	Actuarial Mathematics
ACT SCI 4739/5739	Topics in Actuarial Science
ACT SCI 4785/5785	Introduction to Financial Engineering
ACT SCI 4788/5788	Loss Models

MATH 3425/5425	Differential Equations
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MATH 3430/5430	Partial Differential Equations
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MATH 3440/5440	Numerical Analysis
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MATH 3630/5630	Differential Geometry
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MATH 4460/5460	Introduction to Complex Analysis
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MATH 6746	Probabilistic Operations Research
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MATH 6748	Modeling Industrial Systems Using Queueing Networks
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MATH 6779	Topics in Probability and Statistics
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STAT 3771/5771	Applied Statistical Methods for Research
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STAT 3775/5775	Introduction to Mathematical Statistics
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STAT 3776/5776	Regression Analysis
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STAT 3778/5778	Spatial Data Analysis
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STAT 4772/5772	Statistical Computing I
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STAT 4773/5773	Design and Analysis of Experiments
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STAT 4777/5777	Statistical Quality Assurance Methods
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STAT 4779/5779	Applied Multivariate Statistical Analysis
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STAT 4782/5782	Statistical Computing II
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STAT 6772	Advanced Statistical Methods
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Computer Science:

CS 6400	Computer Systems
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Physics:

PHYSICS 6100	Modeling and Simulation of Physical Systems
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Total Hours	30
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Industrial Mathematics P.S.M.

Learning Outcomes

Industrial Mathematics, P.S.M.

- Students will demonstrate an in-depth understanding of a variety of mathematical models and techniques needed in business/industry.
- Students will demonstrate the practical skills needed to apply mathematical models and techniques to problem-solving in business/industry.
- Students will demonstrate communication skills appropriate for working in business/industry.

Related Programs

- Mathematics M.A.