

# MASTER OF INDUSTRIAL TECHNOLOGY AND OPERATIONS

The Master of Industrial Technology and Operations (MITO) is designed to enhance the ability of students to pursue their professional goals by providing up-to-date knowledge of the technologies and modern management approaches used in world-class industrial companies. The curriculum prepares students to move into managerial, supervisory, and staff positions in industry. The MITO is a professional master's degree which blends practical application of current technologies with the managerial skills needed to oversee a wide range of industrial operations. Students build a program of study suited to their career interests and experience. The MITO is not a M.B.A. or an engineering degree, therefore it is not recommended for those planning to pursue careers in academia or research.

Each student's plan of study is customized to best serve individual career objectives. Of the 30 credit hours required for the MITO degree, the student must complete at least 18 credit hours of INTM graduate courses. Up to 12 credit hours of senior (400-level) courses may be completed as part of the degree. A maximum of six credit hours may be applied from special project courses (INTM 597) or an Interprofessional Project (IPRO 497). A total of nine credit hours taken at a different university (passed with the grade of "B" or better) may be transferred to the university and applied towards the MITO degree if those credits have not been applied toward any earned degree (subject to administrative approval). No thesis or comprehensive examination is required as part of this degree.

The flexibility of course options within the MITO program allows students to complete an industrial specialization, or simply take the ten courses of greatest interest. A specialization requires the completion of 12 credit hours (four courses) in any one of five concentrations within the INTM curriculum: Construction Technology (CT), Facilities Management (FM), Industrial Sustainability (ST), Manufacturing Technology (MT), or Supply Chain Management (SCM). Alternatively, students may complete up to four courses in another university department with appropriate qualifications and approvals. For example, students have taken courses from Stuart School of Business, Armour College of Engineering, and the Food Science and Nutrition program.

INTM courses are presented live at the university's Mies Campus in Chicago and also made available online. The MITO degree can be completed entirely online.

## Curriculum

Code	Title	Credit Hours
<b>Elective Courses</b>		<b>(18-30)</b>
Select a minimum of 18-30 credit hours from the following: <sup>1</sup>		18-30
INTM 403	Management and Leadership	3
INTM 404	Marketing, Sales, and Product Introduction	3
INTM 406	Quality Management Systems	3
INTM 410	Operations Management	3
INTM 411	Functional Facilities Management	3
INTM 413	Contract Administration for Construction Projects	3
INTM 417	Construction Estimating	3
INTM 419	Budgeting and Finance for Facility Managers	3
INTM 425	Human Resource Management	3
INTM 427	E-Commerce in Marketing and Supply Chain Networks	3
INTM 432	Sales and Operations Planning	3
INTM 436	Lean Manufacturing	3
INTM 477	Entrepreneurship in Industry	3
INTM 502	Industrial Engineering Concepts and Applications	3
INTM 505	Maintenance Technology and Management	3
INTM 507	Construction Technology	3
INTM 508	Cost Management	3
INTM 511	Industrial Leadership	3
INTM 515	Advanced Project Management	3
INTM 516	Integrated Facilities Management	3
INTM 518	Industrial Risk Management	3
INTM 520	Applied Strategies for the Competitive Enterprise	3
INTM 522	Modeling for Decision-Making	3
INTM 523	Sustainable Facilities Operations	3
INTM 530	Global Logistics Management	3

INTM 534	Digital Transformation	3
INTM 535	Performance Management in Food Operations	3
INTM 537	Smart Factory Automation	3
INTM 538	Advanced Machining for Manufacturing 1	3
INTM 539	Advanced Machining for Manufacturing 2	3
INTM 542	Warehousing and Distribution	3
INTM 543	Purchasing	3
INTM 544	Export/Import	3
INTM 545	Strategic International Business	3
INTM 546	Manufacturing and Logistics Information Systems	3
INTM 547	Supply Chain Strategies	3
INTM 548	Agile Methodologies for New Product/Process Development	3
INTM 550	Demand Planning and Forecasting	3
INTM 551	Data Analytics for Industry	3
INTM 552	Pharmaceutical Manufacturing Technologies, Regulation and Practice	3
INTM 559	Issues in Industrial Sustainability	3
INTM 560	Sustainability of Critical Materials	3
INTM 561	Energy Options in Industry	3
INTM 562	Special Topics in Sustainability	3
INTM 597	Special Projects <sup>2</sup>	1-4
I PRO 497	Interprofessional Project (I PRO)	3
CAE 515	Building Energy Modeling	3
CAE 573	Construction Management with Building Information Modeling	3

**Optional Specialization Courses** (0-12)

Select 12 credit hours from approved specialization courses <sup>3</sup> 0-12

**Minimum degree credits required: 30**

<sup>1</sup> Up to 12 elective credit hours of 400-level INTM courses may be completed. Up to 12 elective credit hours of 400- or 500-level courses from a different academic discipline may be completed, with adviser and instructor approval.

<sup>2</sup> Students may complete an optional special project for up to six credit hours.

<sup>3</sup> Students may select courses in order to fulfill a desired specialization. See Specializations tab on this page for more details.

## Specialization Courses

Five industrial specializations are available. To earn a specialization, the student must complete four courses within an identified focus area.

### Construction Technology (CT)

Code	Title	Credit Hours
Select a minimum of four courses from the following:		12
INTM 413	Contract Administration for Construction Projects	3
INTM 417	Construction Estimating	3
INTM 507	Construction Technology	3
INTM 515	Advanced Project Management	3
CAE 515	Building Energy Modeling	3
CAE 573	Construction Management with Building Information Modeling	3
<b>Total Credit Hours</b>		<b>12</b>

### Facilities Management (FM)

Code	Title	Credit Hours
Select a minimum of four courses from the following:		12
INTM 411	Functional Facilities Management	3
INTM 413	Contract Administration for Construction Projects	3
INTM 419	Budgeting and Finance for Facility Managers	3

INTM 505	Maintenance Technology and Management	3
INTM 515	Advanced Project Management	3
INTM 516	Integrated Facilities Management	3
INTM 523	Sustainable Facilities Operations	3
CAE 515	Building Energy Modeling	3
CAE 573	Construction Management with Building Information Modeling	3

**Total Credit Hours** 12

### Industrial Sustainability (ST)

Code	Title	Credit Hours
Select a minimum of four courses from the following:		12
INTM 523	Sustainable Facilities Operations	3
INTM 559	Issues in Industrial Sustainability	3
INTM 560	Sustainability of Critical Materials	3
INTM 561	Energy Options in Industry	3
INTM 562	Special Topics in Sustainability	3

**Total Credit Hours** 12

### Manufacturing Technology (MT)

Code	Title	Credit Hours
Select a minimum of four courses from the following:		12
INTM 406	Quality Management Systems	3
INTM 436	Lean Manufacturing	3
INTM 534	Digital Transformation	3
INTM 535	Performance Management in Food Operations	3
INTM 537	Smart Factory Automation	3
INTM 538	Advanced Machining for Manufacturing 1	3
INTM 539	Advanced Machining for Manufacturing 2	3
INTM 546	Manufacturing and Logistics Information Systems	3
INTM 548	Agile Methodologies for New Product/Process Development	3
INTM 552	Pharmaceutical Manufacturing Technologies, Regulation and Practice	3

**Total Credit Hours** 12

### Supply Chain Management (SCM)

Code	Title	Credit Hours
Select a minimum of four courses from the following:		12
INTM 427	E-Commerce in Marketing and Supply Chain Networks	3
INTM 432	Sales and Operations Planning	3
INTM 530	Global Logistics Management	3
INTM 542	Warehousing and Distribution	3
INTM 543	Purchasing	3
INTM 544	Export/Import	3
INTM 546	Manufacturing and Logistics Information Systems	3
INTM 547	Supply Chain Strategies	3
INTM 550	Demand Planning and Forecasting	3

**Total Credit Hours** 12