Operations and Supply Chain Management

Chairperson: Mark Barratt, Ph.D.
Department of Management website (http://business.marquette.edu/departments/management/)

The curriculum is built around applied learning and a comprehensive understanding of Operations and Supply Chain Management (OSCM) processes and further supported by internships. This “Top Twelve” program is designed to encourage: critical thinking, analytics, problem solving, communication, business writing, technical knowledge and skills needed for positions ranging from entry level positions to leadership development programs. New curriculum additions include Supply Chain Sustainability, Risk Management and Digital Supply Chain Technology.

Operations and Supply Chain Management Major

Required Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>OSCM 3001</td>
<td>Operations and Supply Chain Management</td>
<td>3</td>
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<tr>
<td>OSCM 4010</td>
<td>Manufacturing Planning and Control</td>
<td>3</td>
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<tr>
<td>OSCM 4130</td>
<td>Integrated Supply Chain Strategy</td>
<td>3</td>
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<tr>
<td>Three electives (of which one must be OSCM 4020, OSCM 4025 or OSCM 4040):</td>
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<tr>
<td>OSCM 4005</td>
<td>Digital Supply Chain Technologies</td>
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<td>OSCM 4015</td>
<td>Service Management</td>
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<tr>
<td>OSCM 4020</td>
<td>Quality and Process Management</td>
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<td>OSCM 4025</td>
<td>Purchasing and Supply Management</td>
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<tr>
<td>OSCM 4035</td>
<td>Supply Chain Sustainability</td>
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<tr>
<td>OSCM 4040</td>
<td>Global Logistics Management</td>
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<td>OSCM 4045</td>
<td>Globalization and Global Operations</td>
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<tr>
<td>OSCM 4057</td>
<td>Enterprise Systems in Supply Chain Management</td>
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<tr>
<td>or INSY 4057</td>
<td>Enterprise Systems in Supply Chain Management</td>
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<tr>
<td>OSCM 4060</td>
<td>Supply Chain Analytics</td>
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<tr>
<td>OSCM 4065</td>
<td>Supply Chain Risk and Resilience</td>
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<tr>
<td>OSCM 4080</td>
<td>Applied Procurement</td>
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<tr>
<td>OSCM 4082</td>
<td>Applied Lean Six Sigma</td>
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<tr>
<td>OSCM 4085</td>
<td>Applied Logistics</td>
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<tr>
<td>OSCM 4931</td>
<td>Topics in Operations and Supply Chain Management</td>
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<tr>
<td>INSY 4053</td>
<td>Project Management</td>
<td></td>
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<tr>
<td>MANA 3034</td>
<td>Negotiation</td>
<td></td>
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Four Business electives: 12

Total Credit Hours: 30

Note: An approved internship is required for the OSCM major. In extenuating circumstances, this requirement may be satisfied, with department approval, by the following courses: OSCM 4080 or OSCM 4082 (with an additional class project) or OSCM 4085 (with an additional class project).

Major requirements are in addition to the business curriculum course requirements listed on the College of Business Administration Degree Requirements page of this bulletin.

Courses

OSCM 3001. Operations and Supply Chain Management. 3 cr. hrs.
Examination of the operations and supply chain function in manufacturing and service firms from a managerial perspective. Core concepts and issues include planning, designing and managing operations, and the flow of materials and information from suppliers to customers. Prereq: Soph. stndg.

OSCM 3986. Internship Work Period. 0 cr. hrs.
SNC/UNC grade assessment. Prereq: OSCM 3001; cons. of prog. dir. and cons. of Business Career Center.

OSCM 4005. Digital Supply Chain Technologies. 3 cr. hrs.
Industry 4.0 is a term that supports the evolution of a new industrial revolution – one that sees the convergence of both existing and new technologies in creating a digital supply chain, that is connected, analyzes all available information to derive insight, and drive optimal decision making back into the physical world. Prereq: OSCM 3001.
OSCM 4010. Manufacturing Planning and Control. 3 cr. hrs.
Focused on leading edge techniques used in developing a manufacturing strategy, inventory management, cycle time reduction, production scheduling
ERP, JIT/Kanban, synchronous manufacturing, supply chain management and advanced manufacturing systems. Prereq: OSCM 3001.

OSCM 4015. Service Management. 3 cr. hrs.
Particular problems and issues of designing, managing and delivering services will be addressed. Issues include service challenge and breakthrough
design, productivity, quality, innovation and flexibility, demand and capacity management, manpower planning, scheduling, technology management,
strategy and integration. Prereq: OSCM 3001.

OSCM 4020. Quality and Process Management. 3 cr. hrs.
A foundation to quality philosophies, principles, techniques and tools is provided. The interrelationship of each is highlighted through addressing
customer focus, value and satisfaction; leadership and organizational change; process design, measurement and improvement; and benchmarking.
Application of decision making, planning and measurement tools will occur. Prereq: OSCM 3001.

OSCM 4025. Purchasing and Supply Management. 3 cr. hrs.
Focuses on the understanding of operational, tactical and strategic role of purchasing and supply management function in an organizational and supply
chain management context. Students are taken systematically through an entire process of design and execution of sourcing strategies, supplier
evaluation and selection process and design and execution of buyer-supplier relationship strategies. Throughout this process students also learn basics
of negotiations and contracting, supply risk management and costing techniques that help them with their careers in purchasing and supply chains.
Prereq: OSCM 3001.

OSCM 4035. Supply Chain Sustainability. 3 cr. hrs.
We will explore companies’ efforts to consider the environmental and human impact of their products or services as they journey across the entire supply
chain, from the sourcing of raw materials to manufacturing, storage, distribution and every transportation link in between, until final delivery to the end
consumer. Prereq: OSCM 3001.

OSCM 4040. Global Logistics Management. 3 cr. hrs.
Focuses on global logistics and global trade management, and relates these practices to global supply chain management. Key objectives are to help
students think critically about the ways in which global logistics and trade management concepts are fundamental to the overall functioning of the
business (regardless of which other disciplines a student may study), and to provide a “vocabulary” for students to carry forward into the rest of their
studies and beyond. During the course linkages between operations and other business functions (particularly, finance, accounting, marketing and
information technology) will be made. Prereq: OSCM 3001.

OSCM 4045. Globalization and Global Operations. 3 cr. hrs.
Provides an overview of the recent rapid growth of the so-called emerging economies of the world. These include the BRICS nations (Brazil, Russia,
India, China, and South Africa) and other countries that are collectively changing the landscape of the global economy. Emerging nations now
account for fifty percent of global output and are poised to be the growth markets of the 21st century. Also includes several perspectives on the critical
role played by corporations in this fascinating growth story and also material on global operations from the strategic, supply chain, and marketing
perspectives. Relevant to business students interested in studying the role of globalization in economic growth. Prereq: OSCM 3001.

OSCM 4057. Enterprise Systems in Supply Chain Management. 3 cr. hrs.
Focuses on how an information system like ERP supports and integrates core business processes within an organization and across its supply chains.
A combination of lectures and in-class exercises using SAP’s ERP system. Includes a discussion of key ERP concepts and issues from functional,
technical and implementation viewpoint. Also, includes hands-on working experience (through simulation) in manufacturing and distribution using SAP in
the following areas: Sales Order Process, Purchasing, MRP, Production Ordering, Accounting and Forecasting. This is the same course as INSY 4057
and credit cannot be earned for both INSY 4057 and OSCM 4057. Prereq: OSCM 3001 and INSY 3001.

OSCM 4060. Supply Chain Analytics. 3 cr. hrs.
Introduction to spreadsheet-based decision modeling in operations and supply chain management, primarily using Microsoft Excel. Exposed to relevant
decision models widely applied in industry. Focuses on relevance and application rather than theory. Topics include network and transportation models,
linear programs, decision trees, and simulation. Prereq: OSCM 3001.

OSCM 4065. Supply Chain Risk and Resilience. 3 cr. hrs.
We are witnessing an unprecedented increase in supply chain disruptions, which have been adversely impacting not only businesses but communities of
people around the globe. Global trends and forecasts are strongly indicating that the magnitude and frequency of supply chain disruptions are on the rise
and that supply chain risk management must become one of the central topics in designing and managing our supply chains. Prereq: OSCM 3001.

OSCM 4080. Applied Procurement. 3 cr. hrs.
Combines comprehensive classroom work on the tasks, processes and procedures involved in the procurement function with on-the-job work which
executes key procurement functions against real world priorities in a local company or Marquette University Purchasing Department. Student in-class
work will be evaluated by the instructor. On-the-job work will be reviewed and supported by professional procurement staff from a local company. The
key objectives of the course are (1) to help students understand and think critically about the essential functions of procurement; (2) to execute those
functions in a real-world environment; and (3) to add value to their assigned company. By linking the classroom work with applied work addressing real-world needs, the value to both the student and the university will be enhanced. Prereq: OSCM 3001 and consent of instructor.
OSCM 4082. Applied Lean Six Sigma. 3 cr. hrs.
An advanced survey course in Operations and Supply Chain Management (OSCM) that brings together the two most prevalent continuous improvement methodologies – Lean and Six Sigma – into a single comprehensive approach. Students are exposed to the Lean Six Sigma methodology and thinking that underscores the necessity for process standardization, target management and problem solving. Around this framework, the various tools that are application specific are covered. Demonstrates how using Lean and Six Sigma together at the appropriate times can be a big benefit to a company’s processes. There is an ever increasing amount of content and material related to these continuous improvement strategies and the classroom instruction includes the concepts, processes, tools, analyses and procedures conveyed through presentation formats. There is also hands-on application and training, as well as, business case learning, real world examples and best practice review. The required project involves working directly in the sponsoring company’s business area or in a Marquette University department, applying the skills learned in class. In this setting, the students facilitate actual Lean Six Sigma events, activities and projects, with the focus being on completing a semester long project approved and mentored by the sponsor. The ultimate goal is to have each student emerge from the class fully prepared and comfortable in setting up, managing, facilitating and monitoring continuous improvement projects and programs. Prereq: OSCM 3001 and cons. of instr.

OSCM 4085. Applied Logistics. 3 cr. hrs.
Entails a combination of traditional classroom lectures with applied work in a real-world setting. The objectives are to provide students with the theoretical foundations of network design and modeling and expose students to the nuances and complexities of network modeling and application in the real world. To these ends, students work in teams on a real-world project in an area company under the supervision of a professional designated by the company. Classroom work will be evaluated by the instructor and applied work will be evaluated by both the work supervisor and the instructor. Prereq: OSCM 3001, OSCM 4040, OSCM 4060 and cons. of instr.

OSCM 4130. Integrated Supply Chain Strategy. 3 cr. hrs.
Presents a synthesis of the principles in strategic and supply chain management, and how supply chain strategies are developed and executed. Developing an appropriate supply chain strategy, one that if correctly executed will help deliver a competitive advantage to a firm, has become a critical process for most, if not all organizations. Prereq: OSCM 3001 and Sr. stndg.; OSCM 4010 and one additional course from OSCM 4020, OSCM 4025 or OSCM 4040.

OSCM 4931. Topics in Operations and Supply Chain Management. 3 cr. hrs.
Topics vary. Specific topics are designated in the Schedule of Classes. Prereq: OSCM 3001.

OSCM 4986. Operations and Supply Chain Management Internship - Grading Period. 3 cr. hrs.

OSCM 4989. Operations & Supply Chain Management Internship Work and Grading Period. 3 cr. hrs.

OSCM 4995. Independent Study in Operations and Supply Chain Management. 1-4 cr. hrs.
Faculty-supervised, independent study/research of a specific area or topic in Operations and Supply Chain Management. Prereq: Cons. of dept. ch.