Operations & Supply Chain Mgmt (OSCM)

OSCM 3001 Operations and Supply Chain Management (3 credits)
Examines manufacturing and service firms' operations and supply chain functions from a managerial perspective. Core concepts and issues following the SCOR model include planning, sourcing, making, delivering, returning and enabling the operational flow of materials, cash flow and information from suppliers to customers. Engage in applied exercises to reinforce theoretical lectures. Also integrates marketing, economics, accounting and finance touchpoints related to the supply chain.
Prerequisite: Soph. stndg.
Level of Study: Undergraduate
Marquette Core Curriculum: NSM Crossing Boundaries
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%203001)

OSCM 3986 Internship Work Period (0 credits)
S/U grade assessment.
Prerequisite: OSCM 3001; cons. of prog. dir. and cons. of Business Career Center. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%203986)

OSCM 4005 Digital Supply Chain Technologies (3 credits)
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 drives optimal decision-making back into the physical world. Following the SCOR-DS model, students review multiple areas of Industry 4.0 elements in place today, such as Digital Ecosystems, Artificial Intelligence and Machine Learning, Cybersecurity, Planning and Simulations, Blockchain, the Internet of Things, Additive Manufacturing, Robotics, Augmented and Virtual Reality, and Autonomous Vehicles. Combines case studies, active problem-solving, and student discussion/ presentations.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204005)

OSCM 4010 Manufacturing, Planning and Control (3 credits)
Focuses on leading-edge techniques used in manufacturing planning and control. Topics include demand management, ERP systems, forecasting, sales and operations planning (S&OP), master production scheduling (MPS), material requirements planning (MRP), capacity requirements planning (CRP), and lean manufacturing. Additionally, students are given hands-on experience with automation in manufacturing. Specific topics include: Demand Management - what role does demand management play in planning - what communication linkages between demand management and planning? Forecasting - using regression, trends, moving averages, and causal modeling; using Pyramid Forecasting. Sales and Operating Planning (SOP) - how SOP links to strategic planning and exploring the fundamental activities of S&OP. Master Production Schedule (MPS) - understanding the role of master production scheduling, scheduling techniques, and how to structure bills of material (BOM). Material Requirements Planning (MRP) - how MRP fits in the system, the MRP record, and its time-phased logic. Capacity Planning (CRP) - how to estimate capacity and to use finite schedules. Automation - exploring the role and how manufacturing utilizes robotics, with hands-on experience with programming robots in Marquette's Automation Lab Lean Manufacturing - exploring the "The Toyota Way" and the 14 TPS principles.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204010)

OSCM 4015 Supply Chain Service and Customer Management (3 credits)
Addresses the problems and challenges arising from designing, managing and delivering customer and consumer-facing services. These service-specific issues include the challenge and breakthrough design, service productivity, quality, innovation and flexibility, demand and capacity management, workforce planning, scheduling, technology management, strategy, and integration.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204015)

OSCM 4020 Quality and Process Management (3 credits)
Examines the principles, tools and practices of quality and process management in both manufacturing and service industries. Topics include quality management philosophies, effective team structures, measurement of quality, productivity and competitiveness, quality assurance, statistical process control, and capability, Lean Six Sigma and DMAIC, ISO 9000 and ISO 14000, and SERVQUAL. The interrelationships of each concept are explored by examining customer focus, leadership and organizational change, process design and benchmarking.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204020)

OSCM 4025 Purchasing and Supply Management (3 credits)
Delves into crucial operational, tactical and strategic purchasing and supply management aspects. It emphasizes the strategic role of procurement in a company's success, covering category strategy design, spend analytics, supplier segmentation, evaluation, negotiations and sustainability principles. Students enhance critical thinking through theoretical and practical approaches using case studies, discussions, projects, data analytics and industry interactions, preparing them for purchasing and supply chain management careers.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204025)

OSCM 4035 Supply Chain Sustainability & Risk Management (3 credits)
Explores the emerging field of supply chain sustainability and resilience, focusing on the integration of environmental, social and economic factors for creating sustainable and resilient supply chains. Provides students with a comprehensive understanding of the latest concepts, frameworks, tools and best practices in supply chain sustainability and resilience. Students develop critical thinking skills through a combination of conceptual learning and practical applications by utilizing case-based learning, computer simulations and interaction with industry leaders.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204035)

OSCM 4040 Global Logistics Management (3 credits)
Focuses on global logistics and global trade management and relates these practices to global supply chain management. Key objectives help students think critically about how end-to-end 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 provide a “vocabulary” for students to carry forward into the rest of their studies and beyond. Also, considers and explores how to enhance global logistics by adopting more sustainable and resilient perspectives within end-to-end operations. Finally, explores the interconnections between logistics and other business functions, such as finance, accounting, marketing and information technology.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204040)

OSCM 4045 Globalization and Global Operations (3 credits)
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.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204045)

OSCM 4057 Enterprise Systems in Supply Chain Management (3 credits)
Focuses on how an information system like ERP supports and integrates core business processes within an organization and across its supply chains. Based on a combination of lectures and in-class exercises using SAP’s ERP system. Includes a discussion of critical ERP concepts and issues from functional, technical and implementation viewpoints. It 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.
Prerequisite: OSCM 3001 and INSY 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204057)

OSCM 4060 Supply Chain Analytics (3 credits)
Technology and analytics have changed the way we manage supply chains today. Deals with data analytics applied to supply chain processes such as demand forecasting, inventory management, supply chain planning, transportation, distribution, network design, sustainability, pricing and revenue management. Develop analytical skills in predictive data mining, machine learning, optimization and Monte Carlo simulation techniques. These techniques give students a framework to support managerial decision-making in supply chain management. Utilize Excel (along with add-ins) and introduce Python for interfacing with other supply chain software. Demonstrate the applicability of artificial intelligence to specific topics covered in this course.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204060)

OSCM 4065 Artificial Intelligence in Supply Chain (3 credits)
Explores how AI enhances supply chain management by enabling automation, predictive analytics, and real-time decision-making. Presents how machine learning algorithms improve demand forecasting, optimize inventory levels and reduce excess stock. Presents how AI-powered systems improve logistics by streamlining route planning and tracking shipments in real time. Presents how automation boosts warehouse operations and enhances supplier management through performance analysis and risk assessment; and covers how AI enhances supply chain visibility.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204065)

OSCM 4080 Applied Procurement (3 credits)
Combines comprehensive classroom work on the tasks, processes and procedures involved in the procurement function with on-the-job work, which executes essential procurement functions against real-world priorities in a local company or Marquette University Purchasing Department. The instructor evaluates the student's in-class work. On-the-job work is 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. The value to the student and the company is enhanced by linking classroom work with applied work addressing real-world needs.
Prerequisite: OSCM 3001 and cons. of instr. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204080)

OSCM 4082 Applied Lean Six Sigma (3 credits)
An advanced survey course that, combines 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 significantly benefit a company's processes. There is an ever-increasing amount of content and material related to these continuous improvement strategies and classroom instruction includes the concepts, processes, tools, analyses and procedures conveyed through presentation formats. There is also hands-on application and training, business case learning, real-world examples and best practice review. The required project involves working directly in the sponsoring company's business area or a Marquette University department, applying the skills learned in class. In this setting, the students facilitate actual Lean Six Sigma events, activities and projects, focusing 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.
Prerequisite: OSCM 3001 and cons. of instr. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204082)

OSCM 4085 Applied Logistics (3 credits)
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.
Prerequisite: OSCM 3001, OSCM 4040, OSCM 4060 and cons. of instr. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204085)

OSCM 4931 Topics in Operations and Supply Chain Management (3 credits)
Topics vary. Specific topics are designated in the Schedule of Classes.
Prerequisite: OSCM 3001.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204931)

OSCM 4986 Operations and Supply Chain Management Internship - Grading Period (3 credits)
S/U grade assessment.
Prerequisite: OSCM 3986; cons. of prog. dir. and cons. of Business Career Center. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204986)

OSCM 4989 Operations & Supply Chain Management Internship Work and Grading Period (3 credits)
S/U grade assessment.
Prerequisite: OSCM 3001; cons. of prog. dir. and cons. of Business Career Center. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204989)

OSCM 4995 Independent Study in Operations and Supply Chain Management (1-4 credits)
Faculty-supervised, independent study/research of a specific area or topic in Operations and Supply Chain Management.
Prerequisite: Cons. of dept. ch. Consent required.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204995)

OSCM 4997 Capstone in Integrated Supply Chain Strategy (3 credits)
Developing an appropriate supply chain strategy, one that, if correctly executed, helps deliver a competitive advantage to a firm, has become a critical process for most, if not all, organizations. Presents a synthesis of strategic and supply chain management principles and how supply chain strategies are developed and executed, including lean and agile-based approaches. Also explores how organizations can incorporate more sustainable and resilient perspectives within their chosen strategy. Students develop critical thinking skills through conceptual learning and practical applications by utilizing case-based learning, computer simulations and a live project with an industry-leading organization.
Prerequisite: OSCM 3001 and Sr. stndg.; OSCM 4010 and one additional course from OSCM 4020, OSCM 4025 or OSCM 4040.
Level of Study: Undergraduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%204997)

OSCM 5931 Topics in Operations and Supply Chain Management (3 credits)
Topics vary. Specific topics are designated in the Schedule of Classes.
Prerequisite: Admitted to graduate ACCO, BUAD, ECON or NURS program; MBA 6010 and MBA 6090; or cons. of M.B.A. prog. dir. Other prerequisites may vary by topic.
Level of Study: Graduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%205931)

OSCM 6200 Operations and Supply Chain Management (3 credits)
An advanced core course in operations and supply chain management, focusing on the design, planning, coordination and improvement of operations and supply chains. Topics are examined from an integrative and managerial perspective.
Prerequisite: Admitted to graduate ACCO, BUAD, CCOM, ECON, or MGMT; MBA 6010 and MBA 6090; or cons. of M.B.A. prog. dir.
Level of Study: Graduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%206200)

OSCM 6931 Topics in Operations and Supply Chain Management (1-3 credits)
Topics vary.
Prerequisite: Admitted to the graduate ACCO, BUAD, ECON or NURS program; MBA 6010 and MBA 6090; or cons. of M.B.A. prog. dir. Other prerequisites may vary depending on topic.
Level of Study: Graduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%206931)

OSCM 6995 Independent Study in Operations and Supply Chain Management (1-3 credits)
Faculty-supervised, independent study/research of a specific area or topic in Operations and Supply Chain Management.
Prerequisite: Admitted to the graduate ACCO, BUAD, ECON or NURS program; MBA 6010 and MBA 6090; and cons. of M.B.A. prog. dir.
Level of Study: Graduate
Schedule of Classes (https://bulletin.marquette.edu/class-search/?details&code=OSCM%206995)