

# Supply Chain Management

Success in today's business environment is driven by competitive advantage and profitability. Customer-focus, value added product differentiation and cost management are the elements associated with industry leaders. The Supply Chain Management undergraduate major at Lehigh University, housed in the Department of Decision and Technology Analytics (DATA), prepares students to understand and manage the processes that distinguish the successful company from its competitors.

The Supply Chain Management major equips students with the knowledge, skills and abilities necessary for success in the complex business environment of the 21st Century. This program:

- Provides solid exposure to supply management, logistics, business-to-business, and operations management topics.
- Emphasizes advanced cost analysis, quality and financial management and improvement, logistics network modeling, risk management, analytical tools, and enterprise technologies that support supply chain operations, as well as buyer-supplier negotiation.
- Integrates core business courses with supply chain major courses.
- Provides field study and experiential learning opportunities.

Supply Chain Management graduates will be prepared to enter industry at a level that accelerates their on-the-job learning and development. Supply Chain Management graduates typically work within five areas, each with its own set of positions and career paths:

- procurement and supply management
- transportation and logistics
- operations management
- inventory management and control
- supply chain planning

## SUPPLY CHAIN MANAGEMENT PROGRAM

Lehigh's undergraduate major and minor in supply chain management equips students with the knowledge, skills and abilities necessary for success in today's complex business environment.

This innovative program provides solid exposure to supply management, logistics, cost and risk management, demand and supply chain planning, e-business enterprise planning, supply chain analytics, transportation management and operations management topics. The supply chain program has an increased emphasis on analytical tools, advanced cost analysis, negotiation, product development, and e-business; integrates core business courses with supply chain major courses; and provides field study and experiential learning opportunities.

### Required Major Courses

SCM 309	Supply, Cost, and Risk Management	3
SCM 330	Analytics for Service Operations	3
SCM 340	Demand and Supply Chain Planning	3
BIS/SCM 342	e-Business Enterprise Applications	3
SCM 345	Analytical Approaches to Supply Chain Management	3
SCM 354	Integrated Logistics and Transportation Management	3

**Total Credits** 18

## SUPPLY CHAIN MANAGEMENT MINOR

The Supply Chain Management minor is designed to offer students in other disciplines an opportunity to learn about supply chain topics and issues. The College of Business offers a Supply Chain Management minor to any student that has completed the following:

The Supply Chain Management minor is designed to offer students an opportunity to learn about supply chain topics and issues. The minor is available to all undergraduate students in all colleges. Some courses that apply to the minor have prerequisites. These prerequisites do not count toward the minor, and students

attempting to complete the minor are not recused from these prerequisites. Students must complete all courses for the minor with a grade point average of 2.0 or higher. The Supply Chain Management minor consists of the following:

### Required

SCM 354	Integrated Logistics and Transportation Management	3
Select two of the following:		6
SCM 309	Supply, Cost, and Risk Management	
SCM 330	Analytics for Service Operations	
SCM 342	e-Business Enterprise Applications	
SCM 340	Demand and Supply Chain Planning	
SCM 345	Analytical Approaches to Supply Chain Management	

**Total Credits** 9

### Courses

#### SCM 186 Supply Chain Operations Management 3 Credits

Introduction to managing global supply chains and operations within the context of an integrated value chain. Topics include supply chain management, total quality management, project management, demand forecasting, supply management, lean operations, aggregate planning, capacity planning, inventory management, distribution and transportation management, and performance measurement.

**Prerequisites:** (MATH 021 or MATH 076 or MATH 097 or MATH 081) and (ECO 045 or ECO 145 or MATH 231 or ISE 121)

**Attribute/Distribution:** ND

#### SCM 240 Health Care Operations Management 3 Credits

The healthcare industry faces many unique operational challenges. Managing tradeoffs between cost, quality, and access is not only important to individual care organizations, it has become a national priority. This course will focus on how operational decisions influence these tradeoffs and the organizational drivers that yield positive patient experiences. We will examine the roles of people, systems, and technology in matching capacity and demand as well as performance measurement.

**Prerequisites:** SCM 186 and BUAN 044

#### SCM 300 Apprentice Teaching 1-4 Credits

(No catalog description exists for this course).

#### SCM 309 Supply, Cost, and Risk Management 3 Credits

This class presents a framework for achieving sustainable competitive advantage through progressive supply management leadership and approaches. It presents the need for supply leadership, the organizational enablers that must be in place, and the strategies and approaches that leading organizations pursue to achieve competitive advantage in price and cost, quality, delivery, cycle time, technology, flexibility, and end customer responsiveness. Special attention is given to a wide range of price, cost and risk management techniques.

**Prerequisites:** SCM 186 or MGT 186

#### SCM 328 (MGT 328) Negotiations and Conflict Management 3 Credits

This course covers the theory and processes of negotiation in a variety of settings including face-to-face, virtual and cross-cultural business environments. Students will learn negotiating skills by preparing and simulating a broad mixture of negotiations, ranging from one-on-one, to three-person, to multiparty and team negotiations. They will learn to analyze outcomes and strategies during the debriefing sessions and will have an opportunity to compare results of their negotiations to the results of other people in class.

**SCM 330 Analytics for Service Operations 3 Credits**

Students learn to transmute data into decisions through a curated portfolio of real-world cases. The course explores elements that unite services and those that differentiate service processes from non-service processes. Key analytical tools from statistical modeling to queueing theory are introduced through hands-on data-analysis using appropriate programming language. Cases illustrate how analytical models can help assess service operations, redesign service processes, and establish systems that ensure an excellent customer experience. Assignments emphasize business communication skills deemed critical by employers.

**Prerequisites:** SCM 186 and (BIS 044 or BUAN 044)

**SCM 340 Demand and Supply Chain Planning 3 Credits**

Students will learn how businesses work with other businesses to build relationships and integrate demand and supply planning activities across the supply chain to deliver value to customers. They will learn about tools and technologies enabling integration, and the critical drivers and key metrics of supply chain performance. Current readings, case studies, simulations and written assignments will be used.

**Prerequisites:** MGT 186 or SCM 186

**SCM 342 (BIS 342) e-Business Enterprise Applications 3 Credits**

Introduction to the implications of key information technologies used within and across businesses to conduct e-business. The course covers the functionality of various enterprise applications and their integration: customer relationship management, enterprise resource planning, supply chain management, supplier relationship management, data warehousing and mining, business intelligence, and product lifecycle management.

**Prerequisites:** BIS 111

**SCM 345 Analytical Approaches to Supply Chain Management 3 Credits**

This class presents and requires the application of various tools and techniques that support an analytic approach to supply chain analysis and decision making. In particular, tools and techniques related to quality management, lean, constraint analysis, inventory management, new product development, process design, statistical analysis, predictive analytics, and supply chain optimization are emphasized. The class features lectures, exams, case analyses, projects, and problem sets.

**Prerequisites:** SCM 186 and BIS 111

**SCM 354 Integrated Logistics and Transportation Management 3 Credits**

A combined lecture, discussion, and experiential course designed to provide students (1) exposure to the fundamentals of logistics and transportation and (2) the opportunity to work in teams to manage a company's supply chain within a strategic supply chain simulation. Students will gain hands-on-experience integrating supply chain management concepts to optimize business performance outcomes. Topics addressed include integrated logistics, transportation, warehouse management and global logistics.

**SCM 371 Directed Readings 1-3 Credits**

Readings in various fields of supply chain management designed for the student who has a special interest in some field of supply chain management not covered by the regularly scheduled courses. Consent of the department chair.

**Repeat Status:** Course may be repeated.

**SCM 372 Special Topics 1-3 Credits**

Special problems and issues in supply chain management for which no regularly scheduled course work exists. When offered as group study, coverage varies according to interests of instructor and students. Consent of the department chair.

**Repeat Status:** Course may be repeated.

**SCM 373 Supply Chain Management Internship 1-3 Credits**

A sponsoring faculty member shall direct readings, projects and other assignments including a comprehensive final report in conjunction with an industry sponsored internship. The work experience itself, whether paid or unpaid, is not the basis for academic credit.

Intellectual development in the context of a field study learning experience comparable to BUS 211 (ENGR 211), Integrated Product Development Projects, and SCM 372, Special Topics, will be the determining factor in awarding academic credit. This course cannot be used to satisfy requirements of the Supply Chain Management major. Consent of the department chair. Must have junior standing in the College of Business and Supply Chain Management declaration.

**Repeat Status:** Course may be repeated.

**SCM 423 Supply Chain Operations Management 2 Credits**

This course provides an essential understanding of managing global supply chains and operations within the context of an integrated value chain. Topics addressed include the fundamentals of supply chain management; supply chain risk management; quality management; demand and supply chain planning, including forecasting, capacity planning, aggregate planning, and scheduling; the components of a lean supply chain; inventory and working capital management; distribution and transportation management; and performance measurement. Special emphasis is given to managing supply chains from a financial perspective.

**SCM 435 Operations and Supply Chain Management 3 Credits**

This course provides students with an overview of supply chains, operations of organizations within the supply chain and the impact of their designs on organizational competitive strategies. It provides basic techniques organizations use when operating within modern supply chains and reviews key decision tools such as demand planning, capacity management and processes improvement.

**Prerequisites:** (ECO 045 or BUEC ) and MGT 431

**Can be taken Concurrently:** MGT 431