Pearson | PROFESSIONAL PROGRAMS

edX | **MIT** Massachusetts Institute of Technology

MicroMasters® in
Supply Chain Management

Become an expert with
**MIT's #1 ranked
Supply Chain Management Program**

Blended   09 Months*   ₹ ~~1,05,000~~ 84,506**
                                  (+ applicable taxes)

*(Fastrack Mode)   **Limited Period Offer

Overview

As Supply Chain Management continues to grow as a critical business function for organizations' competitive and financial performance, it makes it one of the top skills to invest in both today and in the future.

Today's leaders are faced with a wide variety of business challenges including forecasting uncertainty, shrinking product life cycles and increasing use of technology.

In the face of such challenges, performance expectations from supply chain have increased substantially. To keep up, supply networks must find ways to respond faster to the market, to become more flexible and lower costs significantly.

This MicroMasters® Credential will showcase your understanding of supply chain analytics, design, technology, dynamics and end-to-end Supply Chain Management. Build on the credential and take advantage of a great opportunity to be accepted into the #1 ranked Supply Chain Management Masters Degree program for a fraction of the cost.

What you'll learn :

✓ To apply core methodologies (probability, statistics, optimization) used in supply chain modeling and analysis

✓ To understand and use fundamental models to make trade-offs between forecasting, inventory, and transportation

✓ To design supply chain networks as well as financial and information flows

✓ To understand how supply chains act as systems and interact

✓ How technology is used within supply chains; from fundamentals to packaged software systems

✓ End to end supply chain management

✓ Impact of capacity utilization on throughput time under demand variability

✓ Managing uncertainty & risks in the supply chain

✓ Industry best practices from leading practitioners

Real Career Impact Walmart

"Walmart is always looking to hire the most talented associates in the world, and completing online courses like the MITx MicroMasters® credential in Supply Chain Management is a powerful way for people to learn the important skills required to be successful."

— Chris Sultemeier, EVP of Logistics, Walmart U.S.

Program **Benefits**

Cutting Edge Curriculum

This innovative online program is designed to help you build cutting-edge expertise in Supply Chain Management and to demonstrate this expertise through a credit-bearing Micromasters® from MIT. This MicroMasters® Program is an advanced, professional, graduate-level foundation in Supply Chain Management. It represents the equivalent of 1 semester's worth of coursework at MIT.

For The Industry. By The Industry

Apart from the latest research and academic inputs, this program offers critical inputs from Industry leaders to ensure the highest degree of practical relevance. Participants are eligible to join a series of online interactions with 10 Supply Chain experts and Sr.Industry practitioners to learn about how these concepts are being applied in the Indian environment.
In addition, participants will be pitted against each another in a Live Simulation and Projects to test their ability to apply course concepts in the real world.

Career Support

Our career support team would assist you with compelling resume writing, focused interview preparation and applying for suitable Supply Chain Management Profiles.

Rankings

#3	#3	#1
Best Undergraduate Supply Chain Management / Logistics Programs, 2019	SCM world future of Supply Chain Survey, 2016	Best Undergraduate Production / Operations Management Programs, 2018
U.S.News	Forbes	U.S.News

Job Outlook

Supply Chain Management
positions growing
at nearly
**270,000
opportunities
per year**

Source: Fortune and Materials Handling Institute

Greater demand for
Supply Chain professionals
than supply –
**6 to 8 management
positions
available per applicant**

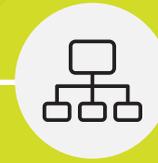**Source:** Fortune and Materials Handling Institute

Supply Chain jobs
to grow globally by **26%**
between
2010 & 2020

Source: Supply and Demand Chain Executive

Most of the global
Supply Chain
**openings exist in
middle management**
in which there
is a current shortage
of 54 %

Source: Supply and Demand Chain Executive

**By 2025, multiple
Supply Chain solutions**
(considering labor availability,
space availability, and
traffic congestion)
will be required to
cater to mega and
Indian hyper cities.

Source: Supply Chain 2025 –
Trends and Implications for India

Median salary
for Indian Supply Chain
Professionals is
₹824,332

Source: Navbharat Times

Program **Vitals**

Course Starts	Time Commitment	Program Fee	Payment by Debit Card / Credit Card Accepted
March 2019	**8-12 hours**	~~₹1,05,000**~~ ₹84,506** **Limited Period Offer**	VISA MasterCard **Visit website to pay**
Blended, 9 Months* *(Fastrack Mode)	Per Week	+Applicable taxes	Loan Facility Available

Who should attend

✓ Procurement/Purchasing Managers

✓ Logistics & Transportation Managers

✓ Distribution & Inventory Management Professionals

✓ Operations/Delivery Heads

✓ Planners/PPC/PDM

✓ Category Managers

✓ Consultants responsible for identifying and solving supply chain related issues

✓ Product managers & IT professionals responsible for designing & implementing supply chain software systems

Instructors

Yossi Sheffi
Faculty
MIT

James Blayney Rice
Deputy Director, CTL
MIT

Jarrod Goentzel
CITE Scalability Lead
MIT

Bruce Arntzen
Executive Director,
Supply Chain
Management Program
MIT

Christopher Cassa
Lecturer, Supply Chain
Management Program
MIT

Chris Caplice
Director, MITx MicroMasters[®]
Program in Supply Chain
Management MIT

Eva Ponce
Executive Director, MITx
MicroMasters[®] Program in
Supply Chain Management
MIT

Syllabus

Module 1: Courses

Supply Chain Fundamentals

About this course

Companies worldwide are leveraging supply chain management to create and maintain a strategic competitive advantage. This trend, in turn, is fueling a growing demand for supply chain professionals. This course is the first of three in the Supply Chain Management XSeries that is specifically designed to teach the critical skills needed to be successful in this exciting field.

This first course, SC1x, provides the foundational skills for supply chain management and logistics. You will learn how to develop and apply analytic tools, approaches, and techniques used in the design and operation of logistics systems and integrated supply chains. The material is taught from a managerial perspective, with an emphasis on where and how specific tools can be used to improve the overall performance and reduce the total cost of a supply chain. We place a strong emphasis on the development and use of fundamental mathematical models to illustrate the underlying concepts involved in both intra- and inter-company logistics operations.

 The main topic areas we will focus on are:

- Demand Forecasting, Planning, and Management

- Inventory Planning, Management, and Control

- Transportation Planning, Management, and Execution

While our main objective is to develop and use models to help us analyze these situations, we will make heavy use of examples from industry to provide illustrations of the concepts in practice. This is neither a purely theoretical nor a case study course, but rather an applied analytical course that addresses real problems found in practice.

In order to qualify for the XSeries certificate you will need to earn a Verified Certificate in each of the three courses. When you sign up for a CTL.SC1x Verified Certificate you will also be granted access to supplemental content such as additional practice problems and complementary videos.

What you'll learn

- Incorporate and manage uncertainty and risk within supply chain management

- Segment different customers, products, and channels and design an optimal portfolio of logistics approaches and strategies for these various segments

- Identify, design, and implement the appropriate forecasting methodology for each segment

- Identify, design, and implement the appropriate inventory replenishment policy for each segment

- Select the optimal transportation routing and modal choice for each segment

Supply Chain Design

About this course

CTL.SC2x Supply Chain Design covers all aspects involved in the design of supply chains for companies and organizations anywhere in the world. The course is divided into four main topic areas: Physical flow design, Supply chain finance, Information flow design, and Organization/Process design. In the design of physical flows, we show how to formulate and solve Transportation, Transshipment, Facility Location, and Network Design Problems. For financial flows we show how to translate supply chain concepts and actions into the language of the Chief Financial Officer (CFO) of a company. We cover Activity Based Costing, Working Capital, the Cash-to- Cash cycle and Discounted Cash Flow Analysis. The design of the information flow section describes how firms communicate with suppliers (procurement, risk contracts), internal resources (production planning, bills of materials, material requirements planning), and customers (Sales & Operations Planning and other collaboration based processes). In the last section, we introduce performance metric design and organizational design within the supply chain organization focusing mainly on the centralize/decentralize decision.

The main topic areas we will focus on this course are:

✓ Supply Chain Network Design
✓ Supply Chain Finance
✓ Supplier Management
✓ Production and Demand Planning
✓ Process and Organizational Design

This course is indispensable if you're considering a supply chain management career and, specifically, the positions of Supply Chain Analyst, Operations Manager, or Logistics Coordinator.

What you'll learn

✓ Network design and facility location

✓ Supply chain finance

✓ Procurement and sourcing

✓ Production planning

✓ Demand management and sales & operations planning

Supply Chain Dynamics

About this course

Supply Chains are complex systems involving multiple firms and organizations with different goals and objectives. Additionally, there are external forces and trends that can impact (positively or negatively) a supply chain's efficiency and effectiveness. Understanding the dynamics and risks within supply chains, both large and small, is key to being a successful supply chain professional.

This course builds on the fundamental models introduced in SC1x and the design trade-offs covered in SC2x. It is essentially a capstone in understanding how to successfully model, design, and manage a supply chain in any industry. We will divide the course into three sections.

First, we will introduce the field of System Dynamics. Developed at MIT, system dynamics is an approach that examines and models complex systems that feature interacting, non-linear, and dynamic elements. The objective is to better understand the underlying features of a complex system and to recommend policies and other actions to improve overall performance.

Second, we will explore the concepts of supply chain risk. Supply chains are subject to a wide number of potential disruptions – from both within and outside of the supply chain. Students will understand how supply chains can be better designed and managed to not only mitigate the downside of supply chain disruption but also to leverage and capture any upside.

Finally, the students will engage in a series of more extended case studies and simulations that demonstrate these complex relationships. Actual case studies and examples from companies will be used to help students better prepare for actual situations.

What you'll learn

✓ Supply chain risk management   ✓ Supply chain dynamics   ✓ End to end supply chain management

Supply Chain Analytics

About this course

Supply chains are complex systems involving multiple businesses and organizations with different goals and objectives. Many different analytical methods and techniques are used by researchers and practitioners alike to better design and manage their supply chains. This business and management course introduces the primary methods and tools that you will encounter in your study and practice of supply chains. We focus on the application of these methods, not necessarily the theoretical underpinnings.

We will begin with an overview of introductory probability and decision analysis to ensure that students understand how uncertainty can be modeled. Next, we will move into basic statistics and regression. Finally, we will introduce optimization modeling from unconstrained to linear, non-linear, and mixed integer linear programming.

This is a hands-on course. Students will use spreadsheets extensively to apply these techniques and approaches in case studies drawn from actual supply chains.

What you'll learn

✓ Basic analytical methods

✓ Statistics in supply chains

✓ How to apply basic probability models

✓ Formulating and solving optimization models

Supply Chain Technology and Systems

About this course

There are underlying fundamental principles and concepts that apply to all supply chains, which can be expressed in relatively straightforward models. However, to actually implement them across a real supply chain requires the use of technology across multiple systems. Supply chains have a long history of using technology to improve efficiency and effectiveness. The shear scale and scope of most supply chains require many distinct systems to interact with each other.

Unfortunately, technology is a moving target. It is constantly evolving and improving so that today's technology is outdated within a few years or months. Rather than focusing on a specific software system, this business and management course will focus on three aspects: fundamental concepts, core systems, and data analysis.

We will start with the introduction of fundamental concepts that are used in all software tools. We will cover IT fundamentals, including project management and software processes, data modeling, UML, relational databases and SQL. We will also introduce Internet technologies, such as XML, web services, and service-oriented architectures. No prior programming experience required.

We will then provide an overview of the main types of supply chain software including ERP, WMS, and TMS systems. We will describe their main functionality, how they work, how they are used, their architecture, data flows, and how they are organized into modules. We will also cover the software selection process and how software upgrade and implementation projects should be organized and managed.

Finally, we will dive into data analysis that is core to all large supply chains. We will introduce visualization and big data analysis techniques that are used in practice today.

What you'll learn

✓ Fundamental IT concepts   ✓ Supply chain ma nagement systems   ✓ Analysis of data from supply chain systems

Module 2. Project and Case Study

Kellogg Case Study - Supply Disruption & Risk Management

When faced with a major supply chain disruption, responsive risk management can make or break a company's fortunes. A classic example occurred soon after a major fire at the Philips microchip fabrication plant which impacted downstream supplies including both Nokia and Ericsson. Each of these two competing rivals took totally different approaches toward managing the incident, thus demonstrating how well-executed risk management can aid in handling disruptions effectively (or not)!

Industry Project - Supply Chain Makeover

After several consecutive years of bad forecasting, a Chinese computer peripherals & mobile phone accessory brand finds themselves facing a severe cash crunch. With most of their working capital (and warehouse space) tied up in finished goods inventory, they nevertheless face frequent stock outs of fast moving items. Due to minimal availability of funds, difficult choices must be made while purchasing components & raw materials. What could be the way out?

Takeaways from this six-week project include identifying the constraint, supply chain mapping & restructuring, identifying where to hold inventory, effects of statistical aggregation, warehouse rationalization, prioritizing distribution channels, product mix rationalization, targeting overstocked inventory SKUs for liquidation, deciding on Make to Order vs. Make to Stock, calculating inventory stock points & target levels using cutting-edge techniques. Each team of participants would create and present a holistic plan for reinventing the supply chain and receive instructor feedback on their work.

Module 3: Industry Expert Talks *Tentative

Participants are eligible to join a series of online interactions with 5 Supply Chain experts and Sr. Industry practitioners to learn about how these concepts are being applied in the Indian environment.

Rajesh Nair
Vice President Supply Chain,
Reliance Retail

Saurabh Bhatnagar
Managing Director,
Accenture

Harvinder Singh Minhas
Vice President,
Accenture

Anand Rao Moram
Sr. Director,
Delhivery

Joseph A. Hopper
Kellogg Case Study
Supply Chain Disruption & Risk Management
Supply Chain Consultant

Module 4: MicroMasters® Credential

Earn The MicroMasters® Credential by Completing and successfully earning a Verified Certificate in all five supply chain courses and passing the final capstone exam.

Learners who successfully earn the MicroMasters® Credential in Supply Chain Management are eligible to apply to a number of institutions across the globe to pursue a full Master's degree.

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Contact Us

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