



# Supply Chain Short Courses



## OBJECTIVE

The objective is to provide the participant with a structured foundation of transportation and logistics understanding to enhance the logistics processes in their organizations.

## WHO SHOULD ATTEND

This course is designed to have a broad appeal across professionals. It is aimed to provide an understanding of how transportation and logistics in business performed effectively in organizations can benefit. Professionals from supply chain management will particularly benefit from this program.

## COURSE DATES

■ MARCH 28<sup>th</sup>, 2019

## THE FACULTY



**Dr. Chris Caplice**  
 Executive Director, MIT Center for Transportation & Logistics  
 Silver Family Research Fellow, MIT  
 Sr. Lecturer, MIT

Dr. Caplice serves as the Executive Director of the Massachusetts Institute of Technology's Center for Transportation & Logistics (CTL) where he is responsible for the planning and management of the research, education, and corporate outreach programs for the center. He created and currently serves as Director of the MITx MicroMaster's Program in Supply Chain Management. He was selected as the first Silver Family Research Fellow in 2016 in recognition of his contribution to supply chain education and research. Also in 2016, he received the Council of Supply Chain Management Professionals (CSCMP) Distinguished Service Award.

*Please note: Faculty is subject to change.*

## Logistics & Transportation

Program Code: (R/345/7/0208)(07/2022)  
 MQA Code:(MQA/FA 2296)

### INTRODUCTION

Logistics and transportation is part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. This course will draw on real issues in transportation and logistics management that confront companies today.

The course will consist of readings prior to the classes, lectures, case study discussions, and small team exercises to apply concepts learned in the course. If desired, small but relevant projects can be undertaken immediately after the course to further embed the learnings in the participants and their organizations.

### PROGRAM CONTENT HIGHLIGHTS

#### Freight Transportation

- Learn basic terminology and concepts such as time-space diagrams, types of transportation networks etc.

#### Local Routing

- Learn the concepts of network algorithms and how they are used in solving local routing problems.

#### Transportation Procurement

- Learn how transportation is typically procured and use of innovative approaches such as combinatorial optimization.

#### Hubs & Transshipment

- Learn freight consolidation techniques and enable movement of goods with or without transshipment points.

### NEXT STEPS

Learn more and apply  
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# Logistics & Transportation

## Schedule

### DAY 1

Session	Topic	Description
Session 1	Introduction to Freight Transportation	We introduce freight transportation and provide some historical context focusing on sources of innovation. We demonstrate how improvements in freight systems (infrastructure, conveyances, etc.) have ripple effects throughout an entire economy. We compare and contrast freight and passenger transportation. We introduce the basic terminology and concepts such as of time-space diagrams, types and classifications of transportation networks, and the four core components: load/unload, linehaul, sorting, and local delivery.
Session 2	Local Routing	Building from direct or one-to-one moves, we next consider local routing where we deliver from one origin to many destinations. We introduce the concepts of network algorithms and how they are used in solving local routing problems. We will cover shortest path, traveling salesman, and vehicle routing problems.
Session 3	Transportation Procurement	Transportation is one of, if not the, most outsourced activities for a company. Better procurement of transportation services is critical for any manufacturer, retailer, or distributor. We will discuss how transportation is typically procured and illustrate innovative approaches to include using combinatorial optimization.
Session 4	Hubs & Transshipment	We introduce the idea of consolidation at facilities that enables many to many movements with and without transshipment points. We discuss how to make trade-offs in cost and time to determine how to flow products from multiple sources to multiple destinations. We will work through the classic transportation problem as well as different flow problems.