TRANSPORTATION INSTITUTE AT THE UNIVERSITY OF DENVER

Office: Transportation Institute at the University of Denver
Mail Code: University Hall, 2197 S. University Blvd. Suite 359, Denver, CO 80208
Phone: 303-871-7449
Email: du-dti@du.edu (du-iti@du.edu)
Web Site: http://www.du.edu/transportation/

Master of Science in Transportation Management

The University of Denver offers an MS in Transportation Management designed to prepare transportation professionals for leadership roles in the transportation, supply chain, and logistics industries, which are becoming increasingly intermodal, international, and interdependent. This professionally oriented degree combines a rigorous academic program delivered by highly qualified industry practitioners and faculty with insight from a board of directors composed of transportation industry leaders, thereby ensuring that course content remains relevant and current. Throughout the program, students learn to effectively address the wide-ranging management and business challenges facing today’s global transportation industry while gaining an understanding of the broad range of transportation modes and options available to meet these challenges.

The program’s unique format, a week-long residency held each quarter for six consecutive quarters and a week-long international trip, allows students to continue working full-time while earning their graduate degree. It also affords students professional networking opportunities that offer significant professional advantages for the future. Upon earning a Master of Science in Transportation Management from the Transportation Institute at the University of Denver, program participants join a group of distinguished alumni who have gone on to play pivotal roles in the transportation industry.

Students will do the following as a part of the program:

• Create strategies to build and actively contribute to professional networks consisting of executive cohort members, board, and alumni
• Develop strategies to enhance professional and personal management skills in classroom and career settings
• Compare and contrast transportation, operational, and managerial processes in the United States and internationally to make informed process-related decisions
• Solve real-world problems by: applying principles from core management disciplines in transportation contexts; analyzing, evaluating, and responding to transportation challenges within and between modes; and measuring, theorizing, and assessing financial and operational management problems using quantitative methods

Master of Science in Transportation Management with a Concentration in Supply Chain Operations

The Denver Transportation Institute DTI concentration in Supply Chain prepares leaders in the Transportation and Logistics industry with advanced-graduate-level knowledge in Supply Chain to supplement the Transportation Management topics offered in the Transportation Management degree. The concentration highlights graduates’ advanced knowledge in critical Supply Chain topics such as supply chain management analysis through both national and international lenses.

This degree prepares students to do the following:

• Articulate principles of supply chain management to construct models to address supply chain problems.
• Analyze the impact of various concepts related to modes of supply chain to both shape and respond to supply chain trends.
• Articulate the complexities of international supply chain issues to inform strategies that positively impact the global economy.

Graduate Certificate in Supply chain management

Supply chains are everywhere, from the local store to a large multinational electronics manufacturer operating halfway across the world. From cradle to grave, it is the supply chain management system that links all of the numerous stakeholders into one strategic plan for us as customers in markets. These systems link processes such as product design, sourcing, forecasting, planning, manufacturing, distribution, logistics, retailing and material disposal and reuse. In today’s fast paced markets driven by globalization and technology, knowledgeable professionals in supply chain management are increasingly important for companies to achieve their business objectives. Some of the most successful manufacturers (e.g., Apple and Samsung) and retailers (e.g., Wal-Mart and Amazon) are winning as a result of their supply chain strategies. Especially as markets change rapidly, supply chain management professionals will be integral to a company’s success.
The graduate certificate in Supply Chain Management was developed in partnership with the Transportation Institute at the University of Denver and Daniels College of Business. The purpose of a Supply Chain Management certificate is to provide a student with a baseline of knowledge, skills, and abilities to succeed in various types of supply chain management roles at the entry levels of an organization. It is designed as a four course program, starting with the basics of an end to end supply chain system, and then diving deeper into the planning and execution aspects of a supply chain, and with a capstone course as a practicum to focus on a specific focus areas relating to a student’s interest. Students will also gain additional skills and knowledge in supply chain management through elective coursework.

This degree prepares students to do the following:

- Articulate the six pillars of supply chain management to diagram the process to appraise their role in the market system.
- Apply the six pillars of supply chain management to realistic problem scenarios to develop strategies to diagnose and address future supply chain problems.
- Assess supply chains using a multidimensional perspective that includes connections between supply chain processes and fundamental business topics such as financial management and technology.
- Solve supply chain problems using a nonlinear process that addresses connections between supply chain pillars, market trends, and business best practices.
- Apply best practices to address an authentic supply chain problem in a work setting.

**specialized graduate certificate in supply chain management**

The specialized graduate certificate in Supply Chain Management provides a student with a baseline of knowledge, skills, and abilities to succeed in various types of supply chain management roles at the entry levels of an organization. The certificate is designed as a four course program, starting with the basics of an end to end supply chain system, and then diving deeper into the planning and execution aspects of a supply chain, and with a capstone course as a practicum to focus on a specific focus areas relating to a student's interest. At the end, the student will be successfully able to move forward in his/her career in a chosen field based on theoretical, strategic, and practical knowledge and applied research.

**Master of Science in Transportation Management**

**Degree and GPA Requirements**

- Bachelors degree: All graduate applicants must hold an earned baccalaureate from a regionally accredited college or university or the recognized equivalent from an international institution.
- Grade point average: The minimum undergraduate GPA for admission consideration for graduate study at the University of Denver is a cumulative 2.5 on a 4.0 scale or a 2.5 on a 4.0 scale for the last 60 semester credits or 90 quarter credits (approximately two years of work) for the baccalaureate degree. An earned master's degree or higher from a regionally accredited institution supersedes the minimum standards for the baccalaureate. For applicants with graduate coursework but who have not earned a master’s degree or higher, the GPA from the graduate work may be used to meet the requirement. The minimum GPA is a cumulative 3.0 on a 4.0 scale for all graduate coursework undertaken.
- Program GPA requirement: The minimum undergraduate GPA for admission consideration for this program is a cumulative 2.5 on a 4.0 scale.

**Other Requirements**

- Organizational Sponsorship Form: http://www.du.edu/transportation/media/documents/du-dti-support.pdf

**English Language Proficiency Test Score Requirements**

The minimum TOEFL/IELTS/CAE test score requirements for this degree program are:

- Minimum TOEFL Score (Internet-based test): 80 with minimum of 20 on each subscore
- Minimum TOEFL Score (Paper-based test): 550
- Minimum IELTS Score: 6.5 with minimum of 6.0 on each band score
- Minimum CAE Score: 169

**English Conditional Admission**: No, this program does not offer English Conditional Admission.

**Master of Science in Transportation Management**

**Degree Requirements**

Students must complete 60 quarter hours of coursework credit.

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Transportation Institute at the University of Denver

TRAN 4410  Executive Management Practices in Organizations  1
TRAN 4420  Leading with Integrity  1
TRAN 4870  Individual Leadership Development Project  4

**Finance Accounting and Economics**

TRAN 4430  Applied Micro Economics & Pricing  4
TRAN 4460  Financial & Managerial Accounting  2
TRAN 4470  Financial Analysis & Capital Structures  2
TRAN 4480  Capital Decision Making and Capital Markets  2
TRAN 4490  Global Trade & Economics  4

**Marketing and Sales**

TRAN 4440  Marketing & Sales Management Strategies  4

**Legal and Compliance**

TRAN 4450  Legal Studies: Contracts & Regulation  2

**Advanced Supply Chain and Global Transportation Management Courses**

TRAN 4800  Analysis of Passenger & Freight Transportation Business Segments  2
TRAN 4810  Big Data & Analytics  4
TRAN 4820  Principles of Supply Chain Management  4
TRAN 4830  Advanced Transportation & Supply Chain Management  4
TRAN 4840  Passenger-Freight Multimodal Transportation Systems  4
TRAN 4850  International Transportation & Supply Chain Management Analysis  4
TRAN 4890  International Study Seminar  2

**Capstone Applied Business Planning and Value Creation**

TRAN 4860  Senior Management: Executives & Issues Seminar  4
TRAN 4880  Business Planning Thesis Project  4

Total Credits  60

**MASTER OF SCIENCE IN TRANSPORTATION MANAGEMENT with a CONCENTRATION in Supply chain operations**

**Degree Requirements**

Students must complete 60 quarter hours of coursework credit.

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Global Transportation Management
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TRAN 4810 Big Data & Analytics 4
TRAN 4840 Passenger-Freight Multimodal Transportation Systems 4

Capstone: Applied Business Planning and Value Creation
TRAN 4860 Senior Management: Executives & Issues Seminar 4
TRAN 4880 Business Planning Thesis Project 4
Total Credits 60

Specialized Graduate Certificate in Supply Chain Management
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Graduate Certificate in Supply Chain Management
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<td>TRAN 4140</td>
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<td>TRAN 4150</td>
<td>Supply Chain Finance</td>
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Courses
TRAN 4010 Introduction to Freight and Passenger Transportation (2 Credits)
This course will provide an overview of the freight and passenger transportation sector of the North American economy, focusing on all of the modes. It will include a discussion of the vision of a transportation system for the future: one that moves people and goods efficiently, economically, safely and securely, and in an environmentally benign manner on an integrated, seamless, ethical transportation system that uses the strengths of all modes and minimizes their weaknesses. The course will discuss how such multi-modal systems for freight and intermodal systems for passengers operate in an impact the development and growth of the US and global economies.

TRAN 4020 Applied Micro Economics for Transportation (4 Credits)
This course will discuss basic microeconomic concepts used in the analysis of transportation with a focus on pricing for the firm relative to costs, market framework, and competitive issues both within the mode and between modes. In addition, the course will involve fieldwork observing and discussing the physical elements underlying the economics of the firm and its pricing.

TRAN 4030 Quantitative Tools for Transportation Management (4 Credits)
This course will introduce the quantitative transportation tools of GIS and statistics; GIS to help solve data management, modeling, and visualization challenges, and statistics for analysis of transportation data to support decisions. GIS addresses (1) the challenge of “big data” which is a current discussion topic in business, (2) modeling (including linear programming) of networks, routing/scheduling, and location analysis, and (3) the visualization output and how it is used for decision making. The statistics component would focus on the framing, tools, and appropriate applications of the statistical processes and how statistics can be correctly used in different data analysis situations in transportation.

TRAN 4050 International Transportation Survey and Analysis (4 Credits)
This course will survey and analyze at a macro level the international freight and passenger operations, policies, and other concepts covered in fundamental courses, as applied to the locations and facilities included in the planned International Transportation Seminar. In addition, this course will explore the specific passenger and freight transportation structure and systems operation for transportation in these international locations and facilities.
TRAN 4060 Transportation Marketing and Sales Tools (4 Credits)
The marketing mix is presented as it relates to both freight and passenger transportation services. Demand forecasting and market analysis for transportation markets. Understanding capacity, marginal costs of capacity market segmentation, pricing capacity and revenue maximization within available capacity constraints will be addressed. Customer service is discussed fully in terms of understanding both the freight- and passenger- customer perspectives and relating this information to marketing and management decision making, especially with regard to the intermodal industry.

TRAN 4070 US and International Law (4 Credits)
This course will survey the main issues facing transportation professionals in managing and operating a safe and secure intermodal transportation system. Particular attention will be given to labor and management practices that have proven effective in addressing these issues and to their potential for intermodal transportation. Topical content will include the history of labor relations, fatigue in transportation, personnel safety, ergonomics, negotiation strategies, ethical issues, security issues, and others.

TRAN 4080 Transportation Law, Policy, and Regulation (4 Credits)
This course addresses the history of transportation and its regulation, constitutional law, regulatory agencies and administrative procedures, railroad regulation, motor carrier regulation, taxicab regulation, air carrier regulation, pipeline regulation, carrier liability (passengers and cargo), labor law, safety regulation, environmental law, antitrust law, and disabilities law as well as issues of intermodalism.

TRAN 4100 Fundamentals of Supply Chain Management (4 Credits)
This course will provide a broad overview of the discipline of supply chain management, providing to students an understanding of “people, processes, and technologies” related to the field. Supply Chain Management is the discipline that brings together B2B and B2C markets, and the University of Denver’s model defines this as an end to end system within six pillars that has a goal of a “cradle to cradle” system. Participants will learn of the key operating, financial, and technical measures and tools of supply chain management, which is necessary to be a successful professional in the field. Specific current and future trends will be covered, including the implications across local, national and global systems. The focus will be on learning and applying how supply chain will continue to transform in the future, but from an understanding of the end to end system and its principles as the foundation.

TRAN 4109 Fundamentals of Supply Chain Planning (4 Credits)
This course focuses on the first three pillars of the supply chain management system, design, source, and schedule, the steps that are taken before a product is made. Supply Chain Planning is focused on how agents in the front end of the supply chain system are centered on how to create, procure, and plan/forecast within the overall process within and across companies. Students are exposed to concepts and practical examples of how front-end activities are achieved within the overall supply chain model. The course introduces concepts and tactics in product and supply chain design, strategic sourcing, forecasting, demand planning, and supplier management. Upon completion of this course, the student will understand how these three pillars are critical to an overall successful supply chain strategy. The student will be introduced on how to apply these concepts and practical applications within a real world market environment. Prerequisite: TRAN 4100.

TRAN 4110 Fundamentals of Supply Chain Execution (4 Credits)
This course focuses on the final three pillars of the supply chain management system, make, deliver, and sustain, the steps that are taken as and after the product is made. Supply Chain Execution is focused on how agents in the back end of the supply chain system are centered on how to make, deliver and reuse within the overall process within and across companies. Students are exposed to concepts and practical examples of how back-end activities are achieved within the overall supply chain model. The course introduces concepts and tactics in materials resource planning (MRP), manufacturing, transportation, warehousing, distribution, retailing and sustainability. Upon completion of this course, the student will understand how these three pillars are critical to an overall successful supply chain strategy. The student will be introduced on how to apply these concepts and practical applications within a real-world market environment. Prerequisite: TRAN 4100.

TRAN 4130 Supply Chain Management Practicum (4 Credits)
This course provides opportunities for students to apply concepts covered in the first three courses of the program to an individual project through the completion of a structured problem-solving exercise in an area of study related to the student’s specific area of interest. Potential topics will either relate to one of the six pillars in the SCM model, or a specific area of interest as a special topic, such as sustainable supply chains, supply chain structure, supply chain risk management, etc. Upon completion of this course, the student will possess a deeper understanding in an area of focus related to application of the student’s future interests. The student will be introduced to how this topic area can be applied in a company in a real market setting. Prerequisites: TRAN 4100, TRAN 4110, TRAN 4120.

TRAN 4140 Supply Chain Technology and Systems (4 Credits)
The key to an effective supply chain are its people and processes, but technology and systems are often the glue that keeps everything together. Even since its inception, technology and systems have been critical to supply chain strategy; given the complexity and fast paced nature, it can be a key determinant of a company’s success or failure. Because technology is so rapidly changing, it is critical to understand how to develop a successful plan to enhance the overall supply chain strategy. In this course, we will not focus on a specific technology or system, but rather the fundamental concepts and how it intersects to people and processes. Specific technologies will be addressed, such as ERP, WMS, and TMS systems. As well, the course will focus on how a company’s strategy and business requirements should be developed into process flows, and a technology/system strategy. The course will also address how companies make technology and system solutions, as well as special topics related to supply chain strategy. Note that this course is only for a six class SCM certificate; it will need to be determined whether this course occurs before or after the SCM Practicum. TRAN 4100, 4110, 4120, 4130.
TRAN 4150 Supply Chain Finance (4 Credits)
A successful supply chain strategy must be effective not just in its material flow within the six pillars and the information flow from its systems, but its financial flow as well. Companies and their corresponding supply chains can achieve improved cost management that leads to greater top line revenue growth through improvements in financial flows achieved waste reduction, inventory carrying cost, capital investment and management and terms with suppliers and customers, to name a few. How the financial flow of the company and its supply chain is dependent on the entity's material and information flows, and vice versa. This course will provide an understanding of how these flows work in conjunction with one another, and how supply chain professionals must understand the role of financial management fundamentals in the process. Note that this course is only for a six class SCM certificate; it will need to be determined whether this course occurs before or after the SCM Practicum. Prerequisites: TRAN 4100, 4110, 4120, 4130.

TRAN 4310 Freight Transportation Executives Seminar (4 Credits)
Through the use of transportation executives in the classroom, this course will explore in depth some of the key concepts covered during the course of the program to include topics such as applied transportation finance, shipper transportation metrics/requirements, global freight flows to/from North America, government/military transportation, etc. In addition, in a case study, students will propose options for a real-world challenge using knowledge and data from current-event case material and guest executive presentations.

TRAN 4320 Transportation Management, Leadership and Values (4 Credits)
This course will address personal behavior; understanding yourself as a leader and organizational behavior issues such as organizational structures, motivation, power and politics, culture and change management. The course will focus on ways of dealing more effectively with the organizational upheaval that comes with change, including planning and information-sharing techniques to help keep your team focused on solutions. Developing leaders- creating a vision, gathering resources, motivating others, handling conflict- together with advice about how to create a climate that encourages others to take initiative and develop their own potential will be a vital part of the course. Strategies in human resource with a system level macro focus will be discussed.

TRAN 4330 Principles of Supply Chain: Management and Technologies (4 Credits)
This course will assist students in gaining awareness, knowledge, and understanding of the distribution patterns and relationships that play a key role in determining company success. We will view perspectives within the context of the global marketplace and across both freight and passenger transportation. We will address external value chains and internal value chains; stakeholder relationship management; the supply chain and the demand chain complexities; strategies of E-business; the strategic use of IT; strategic planning to gain a competitive advantage; end-to-end supply chain visibility and the strategies use of technologies in the enterprise-wide system.

TRAN 4340 Freight Transportation in Supply Chains (4 Credits)
As freight can be two-thirds of logistics costs, this course expands on a traditional Supply Chain course, providing detailed concepts and application for freight transportation in supply chains. This will include modal comparisons and contrasts of operational, financial, marketing, and information technology tools/software in the freight industry. Collaboration and competition between and among the modes will be explored to understand specific tactics to improve modal and supply-chain efficiencies in both the global and domestic arenas. Additionally, current trends in freight transportation and supply chain management across the globe will be studied and discussed for strategies and tactics to shape, manage, and respond to those trends.

TRAN 4400 Excellence in Leadership for Transportation (2 Credits)
This course will provide an integrated exploration of current topics most important for leadership success within the transportation industry. Current best leadership practices will be reviewed, and common leadership challenges within transportation will be analyzed for successful resolution.

TRAN 4410 Executive Management Practices in Organizations (1 Credit)
This course will provide a comprehensive view of best practices for executive management in transportation workplaces. Organizational situations will be assessed from a variety of viewpoints and policies analyzed for optimal execution of strategy.

TRAN 4420 Leading with Integrity (1 Credit)
This course will explore ethical decision making and values-based leadership. Values, ethics and organizational philosophies will be assessed for best application in various corporate settings within the transportation industry.

TRAN 4430 Applied Micro Economics & Pricing (4 Credits)
The course will involve fieldwork and U.S. site visits observing and discussing the physical elements underlying the long-term and marginal economics of the firm and its pricing strategies and policies. In addition, the course will discuss basic microeconomic concepts used in the analysis of business services, including the concepts of market size; marginal, average, short-run, and long-run costs; and production levels as they relate to revenue and contribution with a focus on pricing for the firm relative to its fixed and variable costs, market share framework, and competitive issues both within the mode and between modes.

TRAN 4440 Marketing & Sales Management Strategies (4 Credits)
This course will examine the foundations of marketing as well as the process of developing, assessing and implementing marketing strategies in the transportation and supply chain industries. The foundations are grounded in an understanding of customers’ wants and needs and a commitment to satisfying those needs within the resources of the organization, the long-term benefits of society and the economy, and the highest ethical and moral standards in this global economy. Based on this foundation, students will learn the process of formulating marketing strategies, such as segmentation, targeting, positioning and the four P’s of marketing: product, price, place and promotion.

TRAN 4450 Legal Studies: Contracts & Regulation (2 Credits)
This course will focus on the fundamentals of creating and implementing effective contracts, whether with customers, suppliers, or labor. The contract discussion will be framed by regulatory and policy realities both in domestic and international contexts, including an understanding of federal and international laws, liability, regulations, policies, programs, and agencies impacting contracts.
TRAN 4460 Financial & Managerial Accounting (2 Credits)
This course will cover the basic theory, principles and practice of financial accounting and examine accounting statements including income and cash flow statements and balance sheets. Discussions include managerial use of accounting data useful in making investment and cost decisions, assessing cash flows, and the use of the organization resources to produce profit. Additional topics will include reading and understanding the 10-K, basic accounting standards and practices, and assessing the quality of financial information found in the accounting reports.

TRAN 4470 Financial Analysis & Capital Structures (2 Credits)
Complementing 4460, this course will use ratio analysis to determine relative performance of companies and the industry to enable management to assess operating efficiency, profitability and effective use of capital. Capital structure concepts, fixed and variable cost considerations, the use of operating and financial leverage and the concepts of business and financial risk will be discussed. The course also includes a basic review of the principle of time value of money.

TRAN 4480 Capital Decision Making and Capital Markets (2 Credits)
This course will examine the management decision process for making capital expenditures that enhance the value of the firm, cash flow estimation for capital budgeting purposes, decision models for capital budgeting, weighted average cost of capital, decisions in capital constrained situations, sensitivity analysis, and a review of the capital markets.

TRAN 4490 Global Trade & Economics (4 Credits)
This course will examine the World Trade F15 Organization and the regional trade agreements, such as NAFTA, EU, and ASEAN, with regard to their impact on North American transportation, trade, and economy overall including their relationship to account deficits and their N20; and their impact on disputes and how trade disputes are settled. In addition, the course will address the global economy and economics and its drivers, comparing and contrasting North America, China/Asia, the European Union and selected emerging economies to include impacts on global trade, such as trading patterns, outsourcing, and changing production areas.

TRAN 4610 Multimodal Passenger-Freight Transportation Systems (4 Credits)
The purpose of this course is to explore the multimodal characteristics of transportation systems with emphasis on the interactions between freight and passenger flows. The students will learn about how passenger transportation systems are planned and operated, and the potential impacts on freight movements. At the end of the course, students will have a better understanding of how both public and private sector transportation decisions affect on another.

TRAN 4700 Transportation Roles in Global Trade (4 Credits)
This course will examine the World Trade Organization and the regional trade agreements, such as NAFTA, EU, and ASEAN, with regard to their impact on North American transportation, trade, and economy overall including their relationship to account deficits and their significance; and their impact on disputes and how trade disputes are settled. In addition, the course will address the global economy and economics and its drivers, comparing and contrasting North America, China/Asia, the European Union, and selected emerging economies to include impacts on global trade, such as trading patterns, outsourcing, and changing production areas.

TRAN 4710 Transportation Finance (4 Credits)
This finance course focuses on the transportation managers ability to understand and analyze financial statements. Topics covered will be the basics of major accounting statements, income and balance sheets, use of operating leverage, ratio analysis to determine relative performance of companies and the industry individual modes and across modes. An emphasis will be placed on time value of money and capital expenditure analysis and decision models for capital budgeting. Exploring markets and the sources of financial capital, securities, public and private financing will be discussed.

TRAN 4800 Analysis of Passenger & Freight Transportation Business Segments (2 Credits)
This course will provide an overview of the freight and passenger transportation sectors of the North American economy, focusing on various modes and their financial profiles, including aggregate revenue, income, market share and investment. The course will include a discussion of the vision of a transportation system for the future—one that moves people and goods efficiently, economically, safely and securely, and in an environmentally benign manner on integrated, seamless, ethical transportation processes using the strengths of all modes and minimizing their weaknesses. The course will discuss how such multi-modal systems for freight and intermodal systems for passenger operate in and impact the development and growth of the U.S. and global economies.

TRAN 4810 Big Data & Analytics (4 Credits)
This course will cover the principles of big data and analytics with a focus on applying quantitative methods within the transportation and logistics sector, including a review of technology-based tools that support problem solving with data management, modeling, and visualization. This course will address (1) the challenge of real-world application of “big data” with a focus on ROI and outcomes, (2) modeling (including linear programming) of networks, routing/scheduling, and location analysis, and (3) visualization output and how it is used for decision making. The course covers statistical analysis including framing, tools, and appropriate application of statistics within the transportation sector.

TRAN 4820 Principles of Supply Chain Management (4 Credits)
This course will provide an overview of the basic principles of supply chain management, giving students an understanding of supply chain processes from sourcing to finished goods and customers to suppliers, identifying the five core supply chain processes and examining the role that transportation and logistics play in the supply chain. Students will learn the key operating and financial measures of supply chain management that impact the users and providers of services. Additionally, current trends in the technology of supply chain management, including applicable global trends, will be covered.
TRAN 4830 Advanced Transportation & Supply Chain Management (4 Credits)
Transportation costs and inventory considerations are significant drivers of total logistics and supply chain management costs. This course expands on the earlier Principles of Supply Chain Management course, providing detailed concepts and applications for freight transportation and inventory considerations in supply chains. This will include modal comparisons and contrasts of operational, financial, marketing, and information technology tools/software available in the freight and supply chain industries. Collaboration and competition between and among the modes will be explored to understand specific tactics to improve modal and supply chain efficiencies and competitive alternatives in both the global and domestic markets. Additionally, current trends in freight transportation and supply chain management across the globe will be studied and discussed to consider strategies and tactics to shape, manage, and respond to those trends.

TRAN 4840 Passenger-Freight Multimodal Transportation Systems (4 Credits)
The purpose of this course is to explore the multimodal characteristics of transportation systems with emphasis on shared assets and the interactions between freight and passenger flows. Students will learn how passenger transit and vehicular transportation systems are planned and operated, the concept of external benefits, and the potential impacts on freight movements. By the end of the course, students will have a better understanding of how public and private sector transportation management and investment decisions affect one another.

TRAN 4850 International Transportation & Supply Chain Management Analysis (4 Credits)
This course will survey and analyze at a macro level the international freight and passenger operations, policies, and other concepts covered in fundamental and advanced courses, as applied to the locations and facilities included in the planned International Transportation Travel Seminar. In addition, this course will explore specific passenger and freight transportation management structures and operations for transportation systems in important international locations and facilities.

TRAN 4860 Senior Management: Executives & Issues Seminar (4 Credits)
Through the use of transportation executives in the classroom, this course will explore in-depth some of the key concepts covered during the course of the degree program, to include topics such as applied transportation finance, merger and acquisition issues, shipper transportation metrics/requirements, global freight flows to/from North America, and government/military transportation. In addition, in case studies, students will propose options for real-world challenges using knowledge and data from current events, degree program courses, case material, and guest executive presentations.

TRAN 4870 Individual Leadership Development Project (4 Credits)
This course will guide students through the process of developing and executing individualized leadership development projects to enhance specific leadership skills and goals within their current management structure or an assigned organization. Through work over the six quarters of the program, the leadership projects will provide a unique opportunity for each student to hone critical aspects of her/his leadership, which, in turn, benefits the students, their organizations, and the larger transportation, logistics, and supply chain community.

TRAN 4880 Business Planning Thesis Project (4 Credits)
This course will guide students through the creation of a comprehensive business development and/or productivity improvement-oriented business plan, with a preferred focus on the transportation industry, to develop a new revenue growth or new service opportunity for their organization or an assigned organization. Through work over the six quarters of the program, this project provides each student with important business planning and development skills to create an implementable business plan, which may provide tangible benefits to their sponsoring organization as well.

TRAN 4890 International Study Seminar (2 Credits)
The Seminar will provide an onsite experience for students as they visit and study freight and passenger-related facilities and governmental agencies in major international locations. This international travel seminar will allow students to see new and emerging technologies in action that may provide significant productivity improvements. Students will also have the opportunity to examine the management and operation of transportation and supply chain operations in other countries. Students will meet with executives, government leaders and local managers of these systems to learn directly about the challenges of serving the global economy.

TRAN 4910 International Transportation Travel Seminar (2 Credits)
This course will provide exposure to real-world issues and problems in the intermodal transportation industry through an intensive four-to-seven-day onsite visit to a major transportation facility in North America. The course will include research and data gathering prior to the actual visit and will result in team projects with the final presentations being made during the final Quarter.

TRAN 4920 Leadership Development in Transportation Project (4 Credits)
This course will guide participants through the process of developing and executing an individualized leadership development plan to enhance specific leadership skills in the transportation or transportation-related industry. With work over the six quarters of the program, the leadership plan will provide a unique opportunity for each participant to hone critical aspects of his/her leadership, which, in turn, benefits the participant, the organization, and the larger transportation and supply chain community.

TRAN 4950 Transportation Business Planning Project (1-8 Credits)
This course will guide participants through the creation of a comprehensive transportation oriented business plan to develop a new or enhanced product or service for a transportation related organization. With work over the six quarters of the program, this project provides the participant with important business planning and development skills and an implementable transportation related business plan, which may provide a tangible benefit to the organization as well.

TRAN 4991 Independent Study (1-10 Credits)