



LOGI-710: LOGISTICS FUNDAMENTALS (FORMERLY ENGR-710)

Effective Term

Fall 2026

BOT Approval Date

06/12/2025

Discipline

LOGI - Logistics

Course Number

710

Course Title

Logistics Fundamentals (formerly ENGR-710)

Short Title

Logistics Fundamentals

Credit Status (CB 04)

D - Credit - Degree applicable

Units

Lecture Units

3.00

Total Units

3.00

Hours

Lecture Contact Hours

48-54

Out of Class Hours Lecture

96-108

Total Contact Hours

48 - 54

Total Out of Class Hours

96 - 108

Total Student Learning Hours

144 - 162

Distance Education

Yes

Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course



b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times. ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course equips students with a fundamental understanding of what is arguably the most critical and complex component of global supply chain: Logistics. Topics include: activities of logistics, demand forecasting, customer service, intermodal, and the exciting careers in the logistics industry. (formerly ENGR-710)

Codes

TOP Code (CB 03)

0510.00* - *Logistics and Materials Transportation

CIP Code

52.0203 - Logistics, Materials, and Supply Chain Management.

Repeatability Code

No

Grading Option

Letter grade OR P/NP

Minimum Qualifications

Minimum Qualifications	And/Or
Small Business Development	Or
Business (Masters Required)	Or
Engineering (Masters Required)	Or
Supply Chain Technology	End

Learning Objectives

Learning Objectives

Learning Objective
1. Analyze globalization and the role and importance of transportation.
2. Compare and contrast the urbanization, land and its resources.
3. Define and identify the economic basis and logic of improved global trade.

4. Evaluate the economics of transportation and its political significance.
5. Examine the value of third party logistics to consumers.
6. Examine the career opportunities in the logistics industry
7. Summarize the importance of transportation to globalization and how it contributes to the effective flow of commerce among close and distant regions.
8. Evaluate the underlying economic basis for international exchange of goods and services for the overall benefit of two or more countries or regions and gain some perspective on the volume and overall importance of the more advanced countries of the world.
9. Assess the importance of transportation to the economic vitality of the United States and other countries and regions and why it is probably our most important industry.
10. Examine the size and scope of the third party logistics market.
11. Analyze the unique capabilities of ocean, air, and intermodal transportation in moving freight globally.
12. Evaluate the crisis in the gap for supply chain talent, its causes, solutions and the power of a culturally diverse, equitable and inclusive workforce that breaks through cross-cultural barriers.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

1. Describe the fundamental understanding and critical role of global supply chain logistics
2. Engage with other learners to explore the vast and growing careers in logistics.
3. Discriminate between the four modes of transportation and their particular functions.
4. Evaluate and synthesize the value that the third-party logistics brings to the global supply chain.

Content

Course Lecture Content

1. Global Supply Chains: The Role and Importance of Transportation
 - a. Global Supply Chain Flows
 - b. The Economic Basis and Logic of Improved Global Trade
 - i. Absolute and Comparative Advantage
 - c. Contributing Factors for Global Flows and Trade
 - i. Population Size and Distribution
 - ii. Urbanization
 - iii. Land and Resources
 - iv. Technology and Information
 - d. Globalization
 - e. Supply Chain Concept
 - i. Development of the Concept
2. Transportation and the Economy
 - a. Historical Significance
 - b. Economics of Transportation
 - i. Demand for Transportation
 - ii. Demand Elasticity
 - iii. Freight Transportation Demand
 - iv. Service components of Freight Demand
 - v. Value of Goods
 - c. Environmental Significance
 - i. The Environment
 - ii. Safety

- d. Social Significance
- e. Political Significance
- 3. Transportation Technology and Systems
 - a. Information Requirements
 - i. Quality Standards
 - ii. Multidirectional Flow
 - iii. Decision Support
 - b. Transportation Software
 - c. Transportation Management Systems
 - i. TMS Decision Support Capabilities
 - ii. TMS Functionality
 - iii. Additional Applications
 - d. Transportation Software Selection and Implementation
 - i. Needs Assessment
 - ii. Software Selection
 - iii. Implementation Issues
 - e. Transportation Equipment Technology
 - i. Sustainability Initiatives
 - ii. Safety Efforts
 - iii. Cargo Security Innovations
 - f. Emerging Technologies
 - i. Autonomous Transportation
 - ii. Blockchain for Freight
 - iii. Next Generation TMS
- 4. Motor Carrier
 - a. Types of Carriers
 - i. Market Structure
 - ii. Competition
 - b. Operating and Service Characteristics
 - i. Equipment
 - ii. Types of Vehicles
 - iii. Terminals
 - c. Terminal Management Decisions
 - i. Number of Terminals
 - ii. Locations of Terminals
 - d. Cost Structure
 - e. Private Trucking
 - f. Current Issues
- 5. Railroads
 - a. Industry Overview
 - i. Number of Carriers
 - b. Competition
 - i. Intramodal
 - ii. Intermodal
 - c. Operating and Service Characteristics

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- i. Constraints
 - ii. Strengths
 - iii. Equipment
 - d. Cost Structure
 - i. Fixed Costs
 - ii. Semi Variable Costs
 - 6. Airlines
 - a. Types of Carriers
 - i. Private Carriers
 - ii. For-Hire Carriers
 - b. Market Structure
 - i. Number of Carriers
 - c. Competition
 - i. Intermodal
 - ii. Intramodal
 - iii. Service Competition
 - iv. Cargo Competition
 - d. Operating and Service Characteristics
 - i. General
 - ii. Speed of Service
 - iii. Length of Haul and Capacity
 - e. Cost Structure
 - f. Rates
 - 7. Water Carriers and Pipelines
 - a. History of Water Transportation
 - b. Water Transport Industry Overview
 - i. Significance of Water Transport
 - ii. Types of Carriers
 - c. Number and Categories of Carriers
 - i. Competition
 - d. Operating and Service Characteristics
 - e. Equipment
 - f. History of Pipelines
 - i. Significance of Pipelines
 - g. Types of Carriers
 - h. Ownership
 - i. Current Issues
 - 8. Third Party Logistics
 - a. Industry Overview
 - b. Types of 3PL Providers
 - i. Nonasset-Based Providers
 - ii. Transportation Based
 - iii. Distribution Based
 - c. 3PL Services and Integration
 - i. Surface Freight Forwarding
 - ii. Air Freight Forwarding
 - d. Establishing and Managing 3PL Relationships

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- e. Strategic Needs of 3PL Users
 - i. Strategic Innovation
 - ii. Technological Strength
 - iii. Capacity Access
 - f. 3PL Versus Private Carrier
 - i. Operating Cost
 - ii. Equipment
 - iii. Organizing the Private Fleet
 - 9. Transportation Risk Management
 - a. Risk Concepts
 - i. Disruption
 - ii. Risk
 - b. Transportation Risk
 - i. Product Loss
 - ii. Product Damage
 - iii. Product Contamination
 - iv. Delivery Delay
 - v. Supply Chain Interruption
 - vi. Security Breach
 - c. Transportation Risk Management Process
 - i. Risk Identification
 - ii. Risk Assessment
 - iii. Risk Management Strategy Development
 - iv. Risk Review and Monitoring
 - 10. Global Transportation Management
 - a. Transaction Processes
 - b. Terms of Trade
 - c. Cargo Insurance
 - d. Financial Risks
 - e. Managing Risks
 - f. Terms of Payment
 - 11. Governmental Roles in Transportation
 - a. Transportation Policy
 - i. Why Do We Need a Policy?
 - ii. Who Establishes Policy?
 - b. Transportation Regulation
 - i. Basis of Regulation
 - ii. Responsibility of Regulation
 - c. A Concise Chronology of Transportation Regulation
 - d. Transportation Planning, Promotion, and Programs
 - e. Modal Promotion Activities
 - 12. Evaluate the crisis in the gap for supply chain talent, its causes, solutions and the value of a cultural, diversity and equitable workforce.
 - a. Develop Strategic Goals that Achieve a Diverse, Equitable and Inclusive Recruitment Strategy
 - b. Establish Minority Recruitment, Retention, and Mentoring Programs
 - c. Conduct Diversity Training
 - d. Conduct Anti-Bias Training
 - e. Conduct Cross-Cultural Training

- f. Avoid Group Characteristics When Hiring for Person-Organization Fit
- g. Identify Underrepresentation of Women and Minorities in Leadership Positions in Logistics

Methods of Instruction

Method

Lecture

Integration

Lecture will be used to verbally present course material to students utilizing slide presentations, videos, and other media. Lecture will cover all course material from transportation risk management, global transportation management, and the gap for supply chain talent, its causes, solutions and the value of a cultural, diverse and equitable workforce.

DE Adaptations for MOI

Lecture content will be delivered through recorded presentations incorporating slides, videos, and other media. Lectures will cover topics such as transportation risk management, global transportation management, and the supply chain talent gap, including its causes, solutions, and the value of a culturally diverse and equitable workforce. All materials will be posted in the CMS and designed for accessibility, including captioned videos, screen reader-compatible documents, and alternative text for images.

Method

Discussion

Integration

Discussions over the course material will encourage students to exchange ideas while feeling safe and respected expressing diverse and inclusive views. Discussion as a class, or in smaller groups will be used to encourage students to exchange ideas, findings and comprehension of course material in a learning environment where students feel safe and respected expressing differing views. The instructor will facilitate questions for small group discussions related to ethical, social and political issues in e-commerce among other topics.

DE Adaptations for MOI

Discussion boards will encourage students to exchange ideas, findings, and interpretations of course material in an inclusive environment that respects diverse perspectives. Structured prompts will guide small group conversations on ethical, social, and political issues in e-commerce and related topics. Discussions will be facilitated through the CMS and designed for accessibility, including compatibility with screen readers, captioned media, and alternative text for images, to ensure all students can fully participate.

Method

In-class Exercises

Integration

In-class exercises facilitating student participation will be essential in this course. In-class exercises will allow for feedback on global supply chains, transportation and the economy and third party logistics among other topics. Groups will be pre-arranged to ensure diversity in each group. Class participation will be inclusive, vital and enriched as students are able to provide input based on their understanding as well as their socio-cultural background.

DE Adaptations for MOI

Student participation will be facilitated through structured, asynchronous exercises delivered via the CMS. Pre-assigned diverse groups will collaborate on activities related to global supply chains, transportation, and third-party logistics. Exercises will encourage contributions based on students' understanding and socio-cultural perspectives. All activities will be designed for accessibility, including compatibility with screen readers, captioned media, and alternative text for images, to ensure full participation in a flexible, distance learning environment.



Methods of Evaluation

Method

Exams/Tests

Integration

Exams will evaluate student comprehension of class material. Exams will include information on definition, trends and directions of e-logistics, global transportation management and transportation policies, among other topics. Exams will be administered in an equitable fashion in true or false, multiple choice, fill-in-the-blanks, and short answer questions providing an equitable opportunity for all students. Exams will be evaluated by the instructor based on the student's ability to incorporate information from the course material to support findings.

DE Adaptations for MOE

Exams will be submitted and administered through the CMS. Exams will be graded and students will receive feedback within 72-hours via the grade book, chat, or other accessible conferencing tools.

Method

Homework

Integration

Homework assignments will be assigned periodically to ensure understanding of course content. Homework assignments will cover transportation and the economy, transportation management systems, and emerging technologies. Periodic homework assignments will evaluate students on their understanding of the course content.

DE Adaptations for MOE

Homework will be submitted utilizing the CMS. Homework will be evaluated on accuracy and completeness. Instructor will provide feedback within 72 hours for all assignments turned into the CMS.

Method

Papers

Integration

Students demonstrate their ability to write and articulate fundamental logistics principles in an equitable manner in their written responses, discussion questions, and case studies that are completed as part of their end-of-chapter written exercises and quizzes. Students will write a research paper on the topic of the economic basis and logic of improved global trade. Papers will be evaluated based on the students' ability to analyze class course content and incorporate it to support findings.

DE Adaptations for MOE

Students will upload their papers into the CMS and will receive feedback and a grade within 72 hours of the due date via the grade book, chat, or other accessible conferencing tools.

Assignments

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative



Assignment

Make a list of 10 items that you use frequently (i.e. clothing, shoes, electronics, school materials, etc.) 1. Determine each product's origins. What store did it come from? Does it come from a different country? Describe the (potential) process/methods of transportation that brought each item to you. 2. Provide examples of the products you use that come from another country.

How assignment will be adapted in online format

This assignment will be completed individually and submitted through the CMS. Instructions will be provided in accessible formats, and students may use text-based or supported multimedia submissions, as appropriate. Materials will be compatible with screen readers and designed to ensure all students can complete the assignment independently. Instructor feedback will be provided through the CMS within 72 hours after the assignment due date.

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Read current event articles that inquire about finding items at a store that were not available because the store did not have it in stock. Follow through with reading and discussing the possible consequences for the store if this situation happens repeatedly. Lastly, read and discuss the possible benefits for a company that focuses on correctly forecasting product demand.

Example Articles include:

Raxer, X. (2025, January 30). The rising egg crisis: Exploring contributing factors and supply chain solutions. The Supply Chain Report. <https://supplychainreport.org/the-rising-egg-crisis-exploring-contributing-factors-and-supply-chain-solutions/>

Sturge, T. (2025, March 20). Small chips, big business: Securing semiconductors for the modern world. Maersk. <https://www.maersk.com/insights/resilience/2025/03/20/small-chips-big-business>

How assignment will be adapted in online format

Students will read assigned articles posted in the CMS and respond to structured discussion prompts or written reflection questions. All materials will be provided in accessible formats, including screen reader-compatible documents and captioned or transcribed media if applicable. Student responses will be submitted through the CMS, and instructor feedback will be provided within 72 hours of the due date.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Write a four page essay on how to close the talent gap for supply chain by identifying multiple and diverse recruitment strategies that draw from multiple sources such as community, high schools, colleges and universities, and formerly incarcerated adults, thus demonstrating an inclusive and equitable outreach approach. You will be evaluated by providing the practical step-by-step approach of how you will reach these diverse audiences.



How assignment will be adapted in online format

Students will complete and submit the essay through the CMS in a screen reader-compatible format. Assignment guidelines and evaluation criteria will be posted in accessible formats to ensure clarity for all students. Instructor feedback will be provided through the CMS within 72 hours after the assignment due date.

Course Materials

Textbooks

Langley, John et al. "Supply Chain Management: A Logistics Perspective" 12th Edition, Cengage. 2025.

Novack, Robert et al. "Transportation, A Global Supply Chain Perspective. 9th Edition" Cengage. 2024. ISBN, 9780357908600

Wisner, Joel et al. "Principles of Supply Chain Management: A Balanced Approach. 6th Edition". Cengage. 2022. ISBN: 9780357715703

Other Resources

We will use library resources on International trade topics.

Class Size Information

Class Size

40

Class Size Category

A - Lecture/discussion 40

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

Diversity and inclusion is infused throughout the course. Through lecture and group discussions, students will analyze topics such as the crisis in the gap for supply chain talent. Students will be encouraged to analyze and discuss all new topics while pulling from their own unique knowledge and diverse experiences. Through inclusive group discussion, students gain an appreciation for people's diverse backgrounds, cultures, and ethnicities. Assignments will lead students to consider issues related to racial/cultural diversity and potential inequities or bias in regards to diversity, equitable and inclusive recruitment strategies. Learning objectives examine issues related to problems and solutions for a diverse, equitable and inclusive workforce that breaks through cross-cultural barriers.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

This course is designed to promote equitable learning outcomes for all students. All course content including lecture, assignments, group discussions and projects will be presented through different instructional methods including interactive lectures, small group discussions, and self-reflection. There will be opportunities for feedback intertwined in all lessons to ensure students are grasping the content and do not fall behind. Course content will cover diversity, anti-bias and cross-cultural trainings to ensure an equitable workforce. Learning outcomes cover the crisis in the gap for supply chain talent, its causes, solutions and the power of a culturally diverse, equitable and inclusive workforce that breaks through cross-cultural barriers. Students will be encouraged to draw from their own cultural experiences, backgrounds, and socio-cultural backgrounds when participating in class discussions, completing assignments and class participation. A variety of teaching methods will be used including: slideshows, PDFs, videos and websites.

Interactions**Explain how the course will incorporate student-to-student interaction.**

Student-to-student interactions will occur during in-class discussions and after class. Students will collaborate in small and large group discussions which will foster interaction with one another. Chat functions will be enabled throughout the course. Students will discuss topics such as government roles in transportation, third party logistics and water carriers. Discussion questions will be given to small groups by the instructor and pre-arranged groups of students will be broken up into separate discussion areas in the CMS. Then, each group will report their findings to the class.

Explain how the course will incorporate instructor-to-student interaction.

Instructor-to-student interactions will occur virtually using the CMS via accessible video conferencing tools. The instructor will present all course materials in lecture format. The instructor will facilitate questions of small group discussions related to issues of global supply chains, the gap in supply chain talent and other topics. Instructors will provide feedback for assignments and presentations, and meet with students individually. Instructor interaction would also occur during office either in person or via video conferencing.

Explain how the course will incorporate student-to-content interaction.

Student-to-content interactions will occur through active diverse and equitable learning activities. In class, or online, students will engage with the lecture materials and reading. Learning activities will include discussion assignments, problem-solving tasks, content research and synthesis. Students will engage with the lecture materials and readings and will take notes and study the material which will enhance their understanding of the course content. For example, students may be given an assignment on identifying multiple and diverse recruitment strategies that draw from multiple sources such as community, high schools, colleges and universities, and formerly incarcerated adults, thus demonstrating an inclusive and equitable outreach approach. This will cause them to reflect on ways they can incorporate these skills in their personal and professional lives.

Explain how the course will incorporate student-to-self interaction (metacognitive).

Student-to-self interaction will occur through reflective assignments that connect course concepts to students' lives. For example, students will analyze how transportation systems affect the availability and cost of products they use daily, and reflect on their experiences with access, equity, and representation in logistics-related fields. These activities promote metacognitive awareness of transportation's role in society and their personal connection to global supply chains.