

# Transportation & Logistics (TL)

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## **TL 116. Business Software Applications. 3 Credits.**

Instruction on the use of popular spreadsheet and database software applications including how and when to apply the features of these types of applications to address a variety of business problems. Content emphasizes leveraging widely used business tools via hands-on activities. Credit will be awarded only for TL 116, MIS 116, CSCI 114, or CSCI 116 but not more than one.

## **TL 462. Modeling the Supply Chain. 3 Credits.**

Development of spreadsheet models representing different positions in the supply chain. The models can be used to enhance decision making and achieve a better understanding of how the different stages in a supply chain interact. Prereq: MGMT 320, STAT 330 and at least a cumulative GPA of 2.50.

## **TL 711. Integrated Supply Chain System. 3 Credits.**

Foundation material critical to establishing effective supply chains and analyzing existing supply chains under different decision-making environments. Topics include supply chain strategy, procurement, inventory theory, aggregate planning, six sigma quality, lean production, forecasting, logistics, and project management.

## **TL 715. Introduction to ERP. 3 Credits.**

This course introduces students to Enterprise Systems and their implementation. Topics covered include: process integration, value chain management, change management, project management, and knowledge management.

## **TL 719. Crisis Analysis and Homeland Security. 3 Credits.**

Provides an integrated approach to crisis analysis and response within the contexts of military logistics and homeland security. Focus is on the social and cultural context of emergencies, disasters and catastrophes.

## **TL 721. Global Supply Chain Management. 3 Credits.**

This course provides a coherent perspective on contemporary global logistics from raw materials through production to the customer. Addresses the roles of governments and intermediaries, international sourcing and the application of local trade laws. Discussion of economic, political, and social issues that may affect international transportation. Prereq: TL 711.

## **TL 725. ERP Configuration. 3 Credits.**

Examines the impact of sensor network systems driving business data collection, and the configuration of Enterprise Systems. Includes peer reviewed articles pertaining to enterprise network system application theory with a focus on supply chain systems. Prereq: TL 715.

## **TL 731. Supply Chain Decision Analysis. 3 Credits.**

This course covers collection, management and analysis of logistics information necessary to make good decisions as well as quantitative decision analysis models for systematic evaluation of decision situations involving uncertainty, complexity, alternatives, and preferences. Prereq: TL 711.

## **TL 733. Case Studies in Supply Chain. 3 Credits.**

This course will focus on actual supply chain cases along with solutions and how individual/organizational decisions relate to the ultimate outcome. Analyzing processes which would have reduced/eliminated the supply chain's susceptibility to success or failure.

## **TL 735. Practical Data Analytics. 3 Credits.**

This course provides a comprehensive overview of data analytics and business intelligence concepts with practical experience using market-leading enterprise software solutions. Topics include data management, the extract-transform-load process, data cleansing, data reporting and visualization, building dashboards, development and use of online analytical processing (OLAP) cubes, data warehouses, and data mining.

## **TL 751. Supply Chain Transport Security. 3 Credits.**

Fundamentals of multimodal transportation physical security and cybersecurity, crisis management, and best practices to enable a safe and reliable supply chain.

## **TL 752. Transportation Planning and Environmental Compliance. 3 Credits.**

This course provides an overview of the procedures of transportation planning and environmental compliance, to include an understanding of the related policies and procedures as they relate to transportation systems, and compliance with local, state, and federal laws. A discussion of emissions, hazardous cargo, and permitting also will be provided.

## **TL 754. Urban Transportation Systems Analysis. 3 Credits.**

This course provides students with an understanding of system analysis tools used in urban transportation. Students will work with analytical techniques employed in urban transportation planning, such as traffic forecasting and system capacity analysis and apply these techniques using real-world data for analyzing both the demand and supply of transportation.

## **TL 755. City Logistics. 3 Credits.**

This course studies urban freight distribution, issues and challenges of city logistics, and strategies that can improve the overall efficiency of the movement of goods in cities, while meeting customer demands and mitigating externalities such as congestion and emissions.

## **TL 756. Transportation and Land Use Integration. 3 Credits.**

This course provides students with an understanding of the interrelationships that exist between land use and transportation and the related impacts to the economy, environment and to society as a whole in the planning context.

**TL 757. Technologies for Supply Chain Transport Solutions. 3 Credits.**

Fundamentals of technologies deployed and emerging such as vehicle automation, electrification, sharing, and connectivity. Technologies address critical issues that affect supply chain movements and reliability, such as congestion, safety, security, and energy efficiency.

**TL 785. Spatial Analysis in Transportation. 3 Credits.**

This course focuses on applications of Geographic Information Systems (GIS) to transportation networks and problems. The emphasis is on data modeling. Topics include: linear referencing, dynamic segmentation, network analysis, urban and land use planning, routing of hazardous materials, and asset management applications.

**TL 786. Public Transportation. 3 Credits.**

This course focuses on public transportation issues, concepts, and modeling procedures. Topics covered include policy issues, impacts of transit, government's role in transit, service planning, operations, demand analysis, performance evaluation, quality of service concepts and estimation, and bus and rail capacity.

**TL 787. Public Transportation II. 3 Credits.**

This course focuses on concepts and modeling procedures used when planning and operating public transportation systems. Topics covered include transit demand analysis, quality of service concepts and estimation, bus and rail capacity, and service planning. Prereq: TL 786.

**TL 789. Managerial Leadership for Supply Chain Professionals. 3 Credits.**

This course focuses on exploring theories, concepts, and practices of managerial leadership and their application to supply chain issues. The most current leadership theories and practices will be examined and applied to supply chain professionals.

**TL 790. Graduate Seminar. 1-5 Credits.****TL 791. Temporary/Trial Topics. 1-5 Credits.****TL 792. Graduate Teaching Experience. 1-6 Credits.****TL 793. Individual Study. 1-5 Credits.****TL 794. Practicum/Internship. 1-8 Credits.****TL 795. Field Experience. 1-10 Credits.****TL 796. Special Topics. 1-5 Credits.****TL 797. Master's Paper. 1-3 Credits.****TL 798. Master's Thesis. 1-10 Credits.****TL 811. Modeling for Logistics Research. 4 Credits.**

Models used in logistics research are studied. Topics include statistical models, mathematical programming, network models, stochastic decision processes, and simulation. The ability to perform and present logistics research is cultivated.

**TL 823. Seminar in Supply Chain Research. 3 Credits.**

This course focuses on challenges and research opportunities in supply chain management. Topics include supplier and customer relationships, distribution, warehousing, information technology enablers, transportation issues in supply chain, supply chain sustainability, supply chain resilience, different types of inventory challenges, and human factors in supply chain. The ability to perform and present supply chain research is cultivated.

**TL 831. Supply Chain Modeling Algorithms and Decision Analysis. 3 Credits.**

This course focuses on the application of supply chain techniques to model and solve new and emerging supply chain management problems. It emphasizes critical thinking skills and excel spreadsheet modeling skills to solve deterministic analytic models, stochastic analytic models, and simulation model applications in supply chains. It includes an introduction to modeling, excel, add-in tools. Prereq: TL 888.

**TL 881. Human Wellbeing through Transportation. 3 Credits.**

This course focuses on how passenger transportation services and transportation infrastructure contributes to human wellbeing. Topics include public transportation's and on-demand technology enabled transportation services contribution to livability, and contribution of transportation facilities and infrastructure towards human wellbeing.

**TL 882. Transportation Systems. 3 Credits.**

This course provides an overview and fundamental introduction of transportation systems in the view of global supply chain management. Highlighted topics include the role and importance of transportation in global supply chains, the economy, transportation technology, costing and pricing, all modes of freight transportation, and transportation issues and challenges for global supply chains.

**TL 883. Introduction to Rail Transportation. 3 Credits.**

This course provides an overview of rail transportation and industry including: rail transportation system components, regulations, organizations, the economy, environmental considerations, operations, route analysis, line capacities, technology, and multimodal freight issues. The emphasis is on railway and freight transportation including: planning, operations, capacity, sustainability and environmental considerations. Prereq: TL 882.

**TL 885. Spatial Analysis in Transportation & Supply Chain. 3 Credits.**

Fundamentals of geospatial analysis and optimization with applications in transportation, logistics, and supply chain management. Highlighted topics include mobility optimization, logistical distribution balancing, facility coverage optimization, spatial autocorrelation, and spatial regression.

**TL 888. Research Methods. 3 Credits.**

This course focuses on the conduct of scientific research in transportation and supply chain management. Students will study quantitative, qualitative, and mixed methods concepts, strategies, and practices. The course will also cover formulating research problems, choosing and applying proper research method design, writing proposals and reports, and presenting results. Critical research issues are highlighted.

**TL 892. Graduate Teaching Experience. 1-6 Credits.****TL 893. Individual Study/Tutorial. 1-5 Credits.****TL 899. Doctoral Dissertation. 1-15 Credits.**