

## Learning Goals and Objectives – Master of Supply Chain Management

- 1 Ability to use logistics theories and methodologies to design and manage logistics systems
  - a. Demonstrate an understanding of inventory theory, forecasting, aggregate planning, and project management to design effective supply chains
  - b. Demonstrate an understanding of the supply chain, evaluate factors influencing its performance, and recommend actions for improving supply chain performance
  - c. Apply quantitative techniques to evaluate logistics problems involving complexity and uncertainty
  - d. Demonstrate an understanding of economic, political, and social issues in designing and managing a global supply chain
  - e. Demonstrate an ability to collect, manage and analyze logistics information, and to derive lessons from real-life cases in logistics and supply chain.
- 2 Ability to effectively utilize and understand technology impacting logistics problems
  - a. Utilize enterprise resource planning software to solve logistics problems
  - b. Demonstrate an understanding of new technologies that have influenced advanced logistics and their benefits
- 3 Ability to evaluate contemporary issues from a logistics perspective
  - a. Evaluate the role of logistics in dealing with emergencies and formulate logistics strategies to address emergency situations
  - b. Demonstrate an understanding of transportation and logistics security issues and solutions, including cyber security issues and solutions.
- 4 Effective written communication skills
  - a. Write grammatically correct, well organized papers that effectively address logistics issues
- 5 Ability to recognize ethical dilemmas and make ethical decisions
  - a. Demonstrate an understanding of ethical implications of decisions
  - b. Demonstrate the ability to identify solutions that take ethical implications into account
- 6 Understand leadership practices
  - a. Identify and demonstrate leadership style

## Learning Goals and Objectives – Master of Science in Transportation & Urban Systems

- 1 Ability to use transportation theories and methodologies to design and manage transportation systems
  - a. Demonstrate an understanding of transportation planning and the legal environment in designing effective urban transportation systems
  - b. Utilize analytical techniques such as traffic forecasting and system capacity analysis to assess the performance of urban transportation systems and recommend improvements
  - c. Use an understanding of the relationships between transportation and land use, and the impact of transportation on the community, including transportation safety, to design a transportation system that has positive impacts on the economy, the environment, and society
  - d. Demonstrate an understanding of economic, political, and social issues in designing, planning, and managing a public transportation system
- 2 Ability to evaluate contemporary issues from a transportation perspective
  - a. Evaluate the impacts of transportation on the environment and identify policies that may be used to deal with congestion and environmental impacts associated with transportation
  - b. Demonstrate an understanding of transportation security issues and solutions, including cyber security issues and solutions
  - c. Demonstrate an understanding of the crucial transportation problems currently faced by major urban areas and possible remedies to those problems, including innovative, sustainable, and multi-modal transportation solutions
  - d. Demonstrate an understanding of technologies that influence and benefit transportation
- 3 Strong research skills in the area of urban transportation
  - a. Write a thesis that contributes new knowledge to the area of urban transportation systems
- 4 Ability to recognize ethical dilemmas and make ethical decisions
  - a. Demonstrate an understanding of ethical implications of decisions
  - b. Demonstrate the ability to identify solutions that take ethical implications into account
- 5 Understand leadership practices
  - a. Identify and demonstrate leadership style

## Learning Goals and Objectives – Master of Transportation & Urban Systems

- 1 Ability to use transportation theories and methodologies to design and manage transportation systems
  - a. Demonstrate an understanding of transportation planning and the legal environment in designing effective urban transportation systems
  - b. Utilize analytical techniques such as traffic forecasting and system capacity analysis to assess the performance of urban transportation systems and recommend improvements
  - c. Use an understanding of the relationships between transportation and land use, and the impact of transportation on the community, including transportation safety, to design a transportation system that has positive impacts on the economy, the environment, and society
  - d. Demonstrate an understanding of economic, political, and social issues in designing, planning, and managing a public transportation system
- 2 Ability to evaluate contemporary issues from a transportation perspective
  - a. Evaluate the impacts of transportation on the environment and identify policies that may be used to deal with congestion and environmental impacts associated with transportation
  - b. Demonstrate an understanding of transportation security issues and solutions, including cyber security issues and solutions
  - c. Demonstrate an understanding of the crucial transportation problems currently faced by major urban areas and possible remedies to those problems, including innovative, sustainable, and multi-modal transportation solutions.
  - d. Demonstrate an understanding of technologies that influence and benefit transportation
- 3 Effective written communication skills
  - a. Write grammatically correct, well organized papers that effectively address urban transportation issues
- 4 Ability to recognize ethical dilemmas and make ethical decisions
  - a. Demonstrate an understanding of ethical implications of decisions
  - b. Demonstrate the ability to identify solutions that take ethical implications into account
- 5 Understand leadership practices
  - a. Identify and demonstrate leadership style

## Learning Goals and Objectives – PhD in Transportation and Logistics

- 1 Ability to use transportation theories and methodologies to design and manage transportation and logistics systems
  - a. Demonstrate knowledge of economic, engineering, geographic, and operations research theories and their applications to transportation and logistics
  - b. Apply optimization techniques, econometric methods, and other quantitative and statistical techniques to evaluate transportation and logistics problems
  - c. Demonstrate an understanding of the characteristics of various transportation modes, evaluate their performance, and recommend improvement
  - d. Demonstrate an understanding of the supply chain, evaluate factors influencing its performance, and recommend actions for improving supply chain performance
- 2 Ability to effectively utilize technology in addressing transportation and logistics problems
  - a. Utilize geographic information systems software, such as ArcGIS or TransCAD, to analyze transportation/logistics problems
  - b. Utilize enterprise resource planning software to solve logistics problems
  - c. Utilize statistical and optimization software, such as SAS, to construct and estimate statistical models and optimization models in addressing transportation and logistics problems
- 3 Ability to evaluate contemporary issues from a transportation and logistics perspective
  - a. Evaluate the role of transportation and logistics in dealing with emergencies, and formulate transportation and logistics strategies to address emergency situations
  - b. Identify and evaluate the societal, economic, and environmental impacts of transportation, and identify policies that address those impacts.
  - c. Evaluate the desirability of various transportation policies using economic, engineering, geographic, and operations research theories
  - d. Demonstrate an understanding of technologies that influence and benefit transportation
- 4 Advanced research skills in the areas of transportation and logistics
  - a. Present original research to other PhD students and faculty in a research seminar
  - b. Present original transportation or logistics research at a national or international conference
  - c. Write high quality original transportation and/or logistics papers to submit to refereed journals
- 5 Ability to recognize ethical dilemmas and make ethical decisions
  - a. Demonstrate an understanding of ethical implications of decisions
  - b. Demonstrate the ability to identify solutions that take ethical implications into account
- 6 Understand leadership practices
  - a. Identify and demonstrate leadership style
- 7 Be prepared for teaching responsibilities in higher education
  - a. Complete a teaching assistant field experience