

Transportation and Logistics

Program and Application Information

Program Director:	Dr. Denver Tolliver
Department Chair:	Dr. Joseph Szmerkovsky
Academic Coordinator:	Jody Bohn Baldock
Email:	jody.bohn.baldock@ndsu.edu
Department Location:	Upper Great Plains Transportation Institute, Quentin Burdick Building 448
Department Phone:	(701) 231-7767
Application Deadline:	March 31 for fall semester, October 1 for spring semester
Degrees Offered:	Ph.D.
Test Requirement:	GRE (GMAT may be substituted)
English Proficiency Requirements:	TOEFL iBT 71; IELTS 6

Program Description

The Department of Transportation and Logistics offers a Ph.D. degree in Transportation and Logistics (TL). The degree is awarded through the College of Business which collaborates with the Upper Great Plains Transportation Institute to provide high quality assistantships for students. The program takes an interdisciplinary approach to transportation and logistics and attracts students with backgrounds in transportation and logistics, as well as agribusiness, applied economics, civil engineering, construction management, emergency management, finance, geosciences, industrial/manufacturing engineering, and supply chain management.

Admission Requirements

The Transportation and Logistics Ph.D. program is open to qualified graduates of universities and colleges of recognized standing. To be admitted with full standing, the applicant must:

1. Hold a master's degree from an educational institution of recognized learning preferred, baccalaureate degree a minimum.
2. Have adequate preparation in one or more of the disciplines comprising Transportation and Logistics
3. Have shown the potential to undertake advanced study and research as evidenced by prior academic performance
4. Have earned a cumulative grade point average of at least 3.0 or equivalent in all courses completed at the highest education level reached. Students entering from a master's degree program must have earned a cumulative grade point average of at least 3.0 or equivalent in their graduate program
5. All applicants must submit a Graduate Record Examination (GRE) score at the time of the application. If a student has a recent GMAT score it may be substituted for the GRE.
6. Successful submission of a Graduate School application consisting of the application, letter of intent, official transcripts, letters of reference, and English proficiency scores (if applicable). Additional documents that may be submitted could include resume and professional vita. Applications for admission will be submitted via the Graduate School website before March 1 for Fall semester and October 1 for Spring semester. Applicants must meet all application requirements of the graduate school and department before being considered for acceptance.

Students who do not meet all requirements for admission or have deficiencies in prerequisite course work, but show satisfactory potential for graduate study, may be admitted conditionally. The conditional status may be changed to full graduate standing after the first or second semester of study, based on the student's academic performance.

The Transportation Infrastructure and Capacity Planning option is restricted to students with undergraduate degrees in Civil or Construction Engineering. A student wishing to pursue an area of concentration in Transportation Economics and Regulation must have completed intermediate-level microeconomics and taken at least one course in macroeconomics. In order to pursue an area of concentration in Logistics and Supply Chain Systems, a student must have earned a baccalaureate degree in Agribusiness, Business, Economics, Finance, Industrial Engineering, Management, Marketing, or a related field. All applicants must meet the general program prerequisites of at least one year of calculus and one course in statistics and economics.

Apply for Admission

To apply for admission, please visit the Admission Information page (<https://bulletin.ndsu.edu/graduate/admission-information>) .

Financial Assistance

The number of assistantships vary from year to year, depending on grant availability and the number of students in residence. Applicants are considered on the basis of scholarship and potential to undertake advanced study and research.

To be considered for an assistantship, an applicant must complete a Graduate School application, be accepted by the department, and identify the desire for an assistantship or financial need in the statement of purpose.

Graduate tuition is waived for students with assistantships, but all fees are the student's responsibility.

The Ph.D. program requires the completion of a minimum of 90 credits of graduate study beyond the baccalaureate degree with an overall GPA of 3.0 or higher. Each student must develop a plan of study under the guidance of a faculty adviser and a supervisory committee. Twenty-five of the graduate credit hours must consist of core Transportation & Logistics courses or suitable substitutes. A minimum of 30 credit hours must be taken in the student's area of concentration, including quantitative methods courses related to the concentration. A minimum of 30 credit hours must consist of research-based dissertation credits. The remaining credits may be comprised of technical electives and additional dissertation credits.

Students must take a qualifying examination upon completion of the core courses as identified below. In addition, to core courses, transportation elective courses in supply-chain, transportation, and quantitative methods are typically completed after the first year.

The qualifying exam will include two components: (1) core transportation and logistics knowledge and (2) competency in quantitative methods. After passage of the qualifying examination and successful completion of the courses designated in the plan of study, the student may schedule a comprehensive examination. The comprehensive exam includes written and oral components related to the student's area of concentration. The comprehensive exam also includes a dissertation prospectus examination in which the student must present and defend a plan for undertaking and completing a dissertation. After passage of the comprehensive exam and completion of the dissertation, the doctoral candidate must pass a final examination in which the completed dissertation is presented and defended.

Core Courses

≥ 22
credits

TL 782	Highway Planning and Logistics
TL 783	Transportation Systems II
TL 789	Leadership, Ethics, and Academic Conduct in Transportation
TL 831	Modeling for Transportation and Logistics Decision Analysis
TL 885	Geospatial Information Systems for Transportation
TL 892	Graduate Teaching Experience
ENGR 770	Quantitative Modeling

Transportation Concentration Elective Courses

≥ 9
credits

TL 751	Transportation Systems Security
TL 752	Transportation Planning and Environmental Compliance
TL 753	Transportation System Modeling
TL 754	Urban Transportation Systems Analysis
TL 755	Context Sensitive Solutions
TL 756	Transportation and Land Use Integration
TL 781	Program Evaluation
TL 785	Spatial Analysis in Transportation
TL 786	Public Transportation
TL 787	Public Transportation II

Supply-chain Concentration Elective Courses

≥ 9
credits

TL 715	Introduction to ERP
TL 719	Crisis Analysis and Homeland Security
TL 721	International Logistics Management
TL 725	ERP Configuration
TL 733	Case Studies in Logistics
TL 757	Intelligent Transportation Solutions
TL 811	Modeling for Logistics Research
TL 823	Contemporary Supply Chain Research
TL 829	Supply Chain Risk Management

Quantitative Methods Elective Courses		≥ 6 credits
COMM 707	Quantitative Research Methods in Communication	
EDUC 885	Structural Equation Modeling Fundamentals	
ENGR 771	Probabilistic and Deterministic Methods	
SOC 700	Qualitative Methods	
SOC 701	Quantitative Methods	
Dissertation		≥ 30 credits
TL 899	Doctoral Dissertation	

In addition to these courses, technical electives may be selected from graduate courses offered by participating departments, subject to the approval of the student's advisory committee. For a description of potential electives, see the graduate program descriptions for: Agribusiness and Applied Economics (<https://bulletin.ndsu.edu/graduate/programs/agribusiness-applied-economics>) , Business Administration (<https://bulletin.ndsu.edu/graduate/programs/business-administration>) , Civil Engineering (<https://bulletin.ndsu.edu/graduate/programs/civil-engineering>) , Construction Management (<https://bulletin.ndsu.edu/graduate/programs/construction-management>) , and Industrial and Manufacturing Engineering (<https://bulletin.ndsu.edu/graduate/programs/industrial-manufacturing-engineering>) .

Raj Bridgelall, Ph.D.

North Dakota State University, 2015

Research Interests: Big Data Analytics, Internet-of-Things (IoT), Cloud Computing; Connected and Autonomous Vehicles (CAV), Shared Mobility, Intelligent Transportation Solutions; Signal processing and mathematical modeling of transportation systems; Remote Sensing with Unmanned Aircraft Systems; Hyperspectral Image Analysis; Radio-frequency identification (RFID); Real-time locating systems (RTLS); Energy Harvesting and massive scale autonomous wireless sensor networks

Department: Transportation and Logistics

Alan Dybing, Ph.D.

North Dakota State University, 2013

Research Interests: Asset management, Energy impacts, Freight transportation, Agricultural transportation, Supply chain management, Transportation economics, Spatial analysis, Transportation systems modeling

Department: Transportation and Logistics

Ranjit Godavarthy, Ph.D.

Kansas State University, 2012

Research Interests: Public transportation in small urban and rural areas, Demand response transit and paratransit research, Bike share research, Roundabouts research, Traffic engineering and operations, Transportation and highway safety

Department: Transportation and Logistics

Jill Hough, Ph.D.

University of California-Davis, 2007

Research Interests: Public transportation in rural and small urban locations, Workforce development, Mobility of the aging, Transportation planning and policy, Intelligent transportation systems

Department: Transportation and Logistics

Michal Jaroszynski, Ph.D.

Florida State University, 2014

Research Interests: Socioeconomic impacts of transportation investments and policies; Travel demand modeling; Transportation funding, finance, and equity; Multimodal transportation systems

Department: Transportation and Logistics

Pan Lu, Ph.D.

North Dakota State University, 2011

Research Interests: Transportation infrastructure management, Freight rail transportation, Multi-mode transportation efficiency, GIS application in transportation, Operations research in transportation, Commercial truck safety, Railway transportation safety, Data mining application in transportation, Transportation resiliency analysis

Department: Transportation and Logistics

Jeremy Mattson, Ph.D.

North Dakota State University, 2017

Research Interests: Public transportation, Transportation economics, Demand modeling, Travel behavior, Built environment

Department: Transportation and Logistics

Diomo Motuba, Ph.D.

North Dakota State University, 2009

Research Interests: Transportation and land use planning, Freight modeling, Transportation economics, Connected automated vehicles, Logistics and supply chain management, Transportation safety

Department: Transportation and Logistics

Joseph Szmerkovsky, Ph.D.

Case Western Reserve University, 2003

Research Interests: Project management and scheduling, Supply chain management and technology, Energy supply chain management, Healthcare logistics

Department: Transportation and Logistics

Denver Tolliver, Ph.D.

Virginia Polytechnic Institute and State University, 1989

Research Interests: Highway systems modeling, Multimodal transportation planning, Freight transportation, Energy and environmental analysis

Department: Transportation and Logistics

Kimberly Vachal, Ph.D.

George Mason University, 2005

Research Interests: Human factors in traffic safety, Healthy community transport, Agricultural and biofuels transportation, CMV safety & security, Containerized and identity preserved grain marketing, Regional economic development

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