

The Master of Science Degree in Transportation

General Information

Graduate study in Transportation Planning and Management at Texas Southern University focuses on developing an interdisciplinary program which is designed to train outstanding students for successful careers in the field of transportation. Programmatic emphasis is on preparing the student to enter the public and private sectors with considerable training and advanced knowledge concerning design, operations, planning, management, and performance evaluation of transportation systems. Emphasis is on technical, economic as well as public policy aspects of transportation systems.

For those focusing on planning or operations careers, the TSU transportation program has a strong foundation in traffic operations, transportation planning, public transportation and Intelligent Transportation Systems (ITS). Students may structure degree programs to build on these strengths. For those pursuing management careers, TSU transportation programs have strong foundations in transportation principles, economics and finance, transportation logistics, and transportation policy and management.

Through a rigorous graduate program of instruction, students can develop analytical and problem-solving, design, planning and systems analysis as well as appropriate research skills for use in public and private transportation-related agencies and organizations. Graduate students and their faculty advisors form research partnerships based on their particular interest and needs of transportation industry. Majors in transportation are provided with unique opportunities to work with transportation experts through the Innovative Transportation Research Institute (ITRI) with a number of dedicated research centers, such as Center for Transportation Modeling and Simulation, Center for Drivers' Behavior, Center for Urban Traffic and Air Quality, Center for Transportation Training and Research, etc. These centers provide programs or training



with specialized internships and research exposure through on-going applied and empirical research and demonstration activities.

Requirements for Admission

Applicants must hold a bachelor's degree from an institution of acceptable standing and have a grade point average point of "B" or better in work completed during the last two years of undergraduate study. The bachelor's degree may be in engineering, natural sciences, urban/city planning, business, public administration, political studies, geography, sociology, airway science/aviation, avionics, economics, or other transportation-related fields.

The applicant must meet the criteria for admission to the Graduate School. Applications cannot be evaluated until the completed application is received by the Graduate School. Application forms for admission may be obtained from: The Graduate School, Texas Southern University, 3100 Cleburne Avenue, Houston, Texas 77004, or downloaded at <http://www.tsu.edu/academics/graduate/admissions/index.asp>. For information call The Graduate School at (713) 313-7233.

Admission of International Students

Applications from international students are evaluated in the same manner as those of students from the United States. However, international students whose training has been in a language other than English must satisfactorily pass the Test of English as a Foreign Language (TOEFL) exam. This requirement is designed to determine whether students have a sufficient command of English to enable them to pursue their graduate studies effectively.

Program Requirements

The Master of Science in Transportation Planning and Management degree program is structured to provide a common core of educational and training experiences as well as to



provide the flexibility for interfacing with a variety of related disciplines. Efforts are made to equip students with basic analytical, managerial, and planning competencies necessary to either work in the transportation industry immediately or advance to doctoral study successfully.

Basic requirements for Master of Science in Transportation degree include:

1. Completion of a total of thirty-nine (39) semester credit hours of prescribed coursework.
2. A minimum of 3.0 (A = 4.00) quality point average for all graduate work attempted.
3. Demonstration of acceptable grasp of the core courses by successful completion of the written comprehensive examination.
4. Completion of an internship/project report for all non-thesis option students.
5. Completion and successful defense of a thesis with the quality of independent scientific research for all thesis option students.
6. All other requirements of the Graduate School in Texas Southern University.

Computer Literacy

Students will be exposed to uses of computers and computer software in transportation as part of the curricula. Emphasis is on personal and micro-computers. Students will use software in highway capacity, traffic signal timing and coordination, traffic simulation, travel demand modeling and vehicle emission estimation models in the required course work. Students have access to the department's personal computer laboratories with access to the Internet.



Thesis

The culmination of the program is the successful completion and defense of a thesis which involves independent research. The thesis must be prepared in a way that demonstrates rigorous, independent, empirical or applied research. This option will require that the final product of independent research is prepared in a way that demonstrates that the student has acquired a high level analytical ability.

The research must exhibit substantive depth, logical organization, high level of creativity, and clarity of ideas. A faculty committee guides the student's work and evaluates the thesis.

Internship

Students electing the non-thesis option are required to submit a final report on an investigation conducted while completing the internship or a project report assigned by the faculty advisor. Placements of internships will be sought with various public/private transportation agencies and firms.

List of Courses

- Fundamentals of Transportation
- Principles of Transportation Design & Engineering
- Computer Applications in Transportation
- Transportation Management & Policy
- Economics of Transportation
- Marine Transport Systems
- Urban Transportation Planning
- Quantitative Analysis of Transportation
- Transportation Project Implementation
- Transportation Systems Analysis
- Transportation Infrastructure Management
- Travel Demand Forecasting & Analysis
- Site Traffic Analysis
- Special Lecture Series
- Highway Traffic Operations
- Traffic Signals and Signal Control
- Fundamentals of Air Transportation
- Freight and Logistics Management
- Seminars on Ports and Waterways
- ITS Technologies and Applications
- GIS for Transportation
- Quantitative Assessment of Environmental Impacts
- Transportation Seminar
- Internship
- Thesis



A Talented Faculty

The Department of Transportation Studies has a talented faculty committed to research and teaching for the preparation of a new generation of transportation professionals.

Lei Yu, Ph.D., P.E. (Queen's University) specializes in transportation modeling and simulation, ITS technologies, and air quality evaluation for transportation.

Carol A. Lewis, Ph.D. (University of Houston) specializes in transportation policy and management, urban transportation planning, and public transportation systems.

Fengxiang Qiao, Ph.D. (The Hong Kong University of Science and Technology) specializes in artificial intelligence, signal processing techniques, and transportation logistics.

Yi (Grace) Qi, Ph.D. (Polytechnic University of New York) specializes in urban transit systems planning, GIS applications in transportation, and intelligent classification.

David Olowokere, Ph.D., P.E. (State University of New York) specializes in construction process of building and bridge structures, and sanitary sewer construction issues.

Peter Dittmer, Ed.D. (ABD) (University of Houston) specializes in flight operation, aviation management, and air traffic controls.

Charles Glass, Ed.D. (ABD) (Texas Southern University) specializes in flight training, airport safety and operations, and cargo security training.

Tasjah Hall, M.S. (Texas Southern University) specializes in airport safety and operations, airport/air carrier security training, and cargo security training.

Lab Facilities

The Department of Transportation Studies has developed advanced laboratories for supporting transportation education and research. Significant equipments that are currently installed include Auto-



scope Mobile Traffic Van, Full-Motion driver Simulator, portable emission measurement system (PEMS), and real-time traffic monitoring system. TSU has finalized an agreement with TxDOT in Houston TranStar by which TSU will be able to access the real-time traffic data provided by TranStar. All of the advanced lab equipments in the department provide solid infrastructural foundation to support advanced transportation research through several dedicated research centers.

For more information, please contact:

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Graduate Studies In Transportation

Texas Southern University



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