GRADUATE PROGRAMS IN TRANSPORTATION

MIT provides students with a broad range of opportunities for transportation-related education. Courses and classes span the School of Engineering, the Sloan School of Management, and the School of Architecture and Planning, with many activities covering interdisciplinary topics that prepare students for future industry, government, or academic careers.

A variety of graduate degrees are available to students interested in transportation studies and research, including the interdepartmental master of science program (MST) and doctoral program in transportation (PhD in Transportation), described below, and the Master of Engineering in Logistics, described under Supply Chain Management (*http://catalog.mit.edu/interdisciplinary/graduate-programs/supply-chain-management*). MST and PhD in Transportation students are registered in the Department of Civil and Environmental Engineering or the Department of Urban Studies and Planning. The interdepartmental structure of these two programs allows students flexibility in developing individual programs of study that are cross-disciplinary and engage students in research with faculty supervisors across many departments.

Opportunities are also available for students to obtain dual master's degrees. Students who wish to pursue this option must follow the regular admissions procedure to be admitted to each degree program. Common dual degree pairings include the Master of Science in Transportation with:

- Master in City Planning
- Master of Science in Electrical Engineering and Computer Science
- Master of Science in Operations Research
- Master of Science in Technology and Policy

Information on requirements for dual degrees can be found in the section on General Degree Requirements for graduate education.

Master of Science in Transportation

The Master of Science in Transportation (MST) (*http://catalog.mit.edu/degree-charts/master-transportation*) program is based on the premise that a common set of analytical approaches and methodologies can be applied to solve a range of transportation problems. The MST provides a common basis for addressing a wide range of problems while allowing enough flexibility to accommodate students with diverse backgrounds and interests.

Students must complete a program of coursework, plus a research-based master's thesis on a topic of their choosing approved by their thesis supervisor. Coursework includes two required core subjects, at least three additional transportation or related subjects comprising an individually designed program, one policy/technology subject, and a computer programming subject.

Generally, the three subjects chosen for the individually designed program relate to an area of specialization, although this is not required. Common areas of specialization include air transportation, data sciences for transportation, urban transportation, planning methods, logistics, and policy. Some students use the individually designed program to deepen their understanding of a selected area of interest, while others may choose to emphasize breadth rather than depth in their studies. At least one of the selected subjects should address policy or technology. At least two of the designated subjects should be clearly focused on transportation, while the third can be in a field that supports transportation, for example, a subject covering methods used in transportation drawn from fields such as economics, computer science, operations research, political science, or management.

The MST degree usually takes up to two years to complete.

For more information, see the full Master of Science in Transportation program description (*http://cee.mit.edu/graduate/mst*).

Admission

An undergraduate degree in engineering is not necessary for admission to the Master of Science in Transportation program, but applicants are expected to have an aptitude for analytical thinking. Backgrounds in the physical or social sciences, urban planning, management, and many other disciplines are equally appropriate foundations for the program.

The only specific subjects required for admission are two subjects in calculus, one in economics, and one in probability. One or more of these subjects may be completed simultaneously with application to the program, and acceptance is then conditional on satisfactory completion of these prerequisites. Applicants should have roughly the equivalent of the following MIT subjects:

18.01	Calculus	12
18.02	Calculus	12
14.01	Principles of Microeconomics	12
6.041A & 6.041B	Introduction to Probability I and Introduction to Probability II	12
or 1.010	Introduction to Probability and Statistics in Engineering	

Students without an equivalent microeconomics course can be admitted, but will have to complete 14.01 Principles of Microeconomics, preferably during their first year in the degree.

All applicants are required to submit Graduate Record Examination (GRE) scores; applicants whose native language is not English are required to submit an English Language Exam. Two exams are accepted: the Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS). Applicants

to the Master of Science in Transportation degree program should achieve a score of at least 100 on the TOEFL iBT or 7.5 on the IELTS.

Financial Support

Funding for MST students is usually offered to about 90% of each incoming class. A limited number of fellowships are offered each year, but more often funding takes the form of a research assistantship (RA). A student with RA funding typically works with a faculty member on a research project for 10–20 hours per week. The research that is conducted on that project generally becomes the topic of the student's thesis.

To learn more about current transportation research at MIT, visit Transportation@MIT (*http://transportation.mit.edu/research/people*) to peruse the websites of the faculty involved.

RAs are awarded as either a half or full appointment. An award of a full RA (about 20 hours of work per week) covers the student's tuition for the academic year and provides a monthly stipend to cover living expenses. A half RA (approximately 10 hours of work per week) covers half of the student's tuition for the academic year and provides half of the regular monthly stipend.

Students who are not awarded financial aid at the time of admission may seek funding through other sources.

Doctor of Philosophy in Transportation

The interdisciplinary doctoral program in transportation provides a structured and direct follow-on doctoral program for students enrolled in the Master of Science in Transportation or other transportation-related master's degree programs offered at MIT or elsewhere. Outstanding applicants without a master's degree can also be considered for admission to the doctoral program. The interdisciplinary structure allows students great flexibility in developing individual programs of study that cross both disciplinary and departmental lines. The program is administered by a faculty committee responsible for admissions, establishment and oversight of program requirements, and conduct of the general examination and dissertation defense.

The interdisciplinary doctoral program in transportation requires completion of at least 120 units of coursework in a program of study proposed by the student, the successful completion of a general examination consisting of both written and oral components, and the submission and defense of an acceptable dissertation.

The doctoral program offers five core areas of study. Students must choose the Transportation Systems Analysis core area and at least one of the Demand and Economics or Performance and Optimization core areas to build a doctoral core program of six subjects.

Transportation Systems Analysis		
1.200[J]	Transportation Systems Analysis: Performance and Optimization	12
1.201[J]	Transportation Systems Analysis: Demand and Economics	12
Demand and Economics		
1.202	Demand Modeling	12
14.381	Statistical Method in Economics	12
Performance and Optimization		
1.203[J]	Applied Probability and Stochastic Models	12
15.093[J]	Optimization Methods	12
Planning and Policy		
1.251[J]	Comparative Land Use and Transportation Planning	12
11.478	Behavior and Policy: Connections in Transportation	12
Mobility Models and Knowledge Discovery		
15.077[J]	Statistical Learning and Data Mining	12

Graduates of the interdisciplinary doctoral program receive a PhD in Transportation, although students may petition for other MIT graduate fields of study as their degree designation, subject to approval by the Transportation Graduate Program Committee.

Inquiries

Questions about application to graduate programs in transportation should be directed to the Transportation Academic Office. (*cee-admissions@mit.edu*)