MASTER OF SCIENCE IN TRANSPORTATION (MST)

Master of Science in Transportation Program Description (http://catalog.mit.edu/interdisciplinary/graduate-programs/transportation)

The Master of Science in Transportation (MST) 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 three required core subjects; one policy, technology, and society subject; a computing/analytics subject; and at least one additional transportation or related subject, all comprising an individually designed program.

Common areas of specialization include systems and optimization (freight and logistics; vehicles and energy; networks and systems; public transport; emerging mobility; and air transport), analytics and computation (big data; automation and AI; behavior and demand modeling; and operations research and statistics), and planning, policy, and institutions (sustainability and the environment; economics and finance; and urban planning, design, 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.

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

For more information, see the Master of Science in Transportation program description (https://cee.mit.edu/interdepartmental-program-in-transportation).

Core Subjects

11.251  Frontier of Transportation Research  3

Select one of the following:  12
1.202  Demand Modeling
1.208  Resilient Networks
1.260[J]  Logistics Systems
11.478  Behavioral Science and Urban Mobility

Computation/Analytics

Select one of the following:  12
6.373[J]  Statistics, Computation and Applications
6.7900  Machine Learning

6.7910[J]  Statistical Learning Theory and Applications
6.C51  Modeling with Machine Learning: from Algorithms to Applications  1
15.071  The Analytics Edge
15.072  Advanced Analytics Edge

Policy, Technology, and Society  2, 3

Select one subject from the list below.  6-12

Transportation Subject Electives

Select a minimum of 24 units of transportation related electives in consultation with advisor.  24

Thesis

Students must complete a research-based thesis on a topic of their choice that has been approved by the thesis advisor.

1.THG  Graduate Thesis  24

Total Units  93-99

1  Credit cannot be earned unless 6.C51 and 1.C51 are completed at the same time.
2  Special subjects offered by the Department of Urban Studies and Planning (Course 11) may satisfy this requirement if content satisfies MST criteria. Contact program office for available offerings.
3  Requests to waive this requirement based on prior coursework must be submitted in writing to the Transportation Education Committee (TEC) executive director.

Policy, Technology, and Society Subjects

2.65[J]  Sustainable Energy  12
2.810  Manufacturing Processes and Systems  12
6.7260  Network Science and Models  12
11.255  Negotiation and Dispute Resolution in the Public Sector  12
11.478  Behavioral Science and Urban Mobility  12
11.526[J]  Comparative Land Use and Transportation Planning  12
11.540  Urban Transportation Planning and Policy  12
15.020  Economics of Energy, Innovation, and Sustainability  12
15.230  Public Policy and the Private Sector  9
15.655[J]  Law, Technology, and Public Policy  12
16.422  Human Supervisory Control of Automated Systems  12
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.71[J]</td>
<td>The Airline Industry</td>
<td>12</td>
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<tr>
<td>16.72</td>
<td>Air Traffic Control</td>
<td>12</td>
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<tr>
<td>16.89[J]</td>
<td>Space Systems Engineering</td>
<td>12</td>
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<tr>
<td>MAS.552[J]</td>
<td>City Science</td>
<td>12</td>
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<td>MAS.750</td>
<td>Human-Robot Interaction</td>
<td>9</td>
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<td>MAS.836</td>
<td>Sensor Technologies for Interactive Environments</td>
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<td>MAS.859</td>
<td>Space Technology for the Development Leader</td>
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<td>IDS.333[J]</td>
<td>Risk and Decision Analysis</td>
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<td>IDS.410</td>
<td>Modeling and Assessment for Policy</td>
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<tr>
<td>IDS.411</td>
<td>Concepts and Research in Technology and Policy</td>
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<td>IDS.412[J]</td>
<td>Science, Technology, and Public Policy</td>
<td>12</td>
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<td>IDS.521[J]</td>
<td>Energy Systems for Climate Change Mitigation</td>
<td>12</td>
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<tr>
<td>IDS.522</td>
<td>Mapping and Evaluating New Energy Technologies</td>
<td>12</td>
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<td>IDS.526[J]</td>
<td>Sustainability Science and Engineering</td>
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<td>STS.487</td>
<td>Foundations of Information Policy</td>
<td>12</td>
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