Master of Science in Transportation Degree Requirements

Students must have satisfactorily completed a program of study of at least 66 units of graduate level subjects, plus a research-based master's thesis. Coursework includes three required core subject, one policy, technology, and society subject, a computing/analytics subject, and at least one additional transportation or related subject comprising an individually-designed program.

In the following document you will find specific information pertaining to:

1/ Thesis Supervision

2/ Research and Degree Requirements

3/ Thesis Submission

Appendix A/ Contact Information

Appendix B/ Policy, Technology and Society Subjects

Appendix C/ Responsible Conduct of Research

Thesis Supervision

A student's thesis supervisor can be a 1/MIT Interdepartmental Program in Transportation Faculty member(s) or 2/ Interdepartmental Program in Transportation Senior or Principal Research Scientist/Engineer. A thesis supervisor is responsible for certifying and signing the thesis.

Research and Degree Requirements

Subject Requirements

The requirements for the MST degree consist of the following:

Core MST

- 1.200 transportation: foundations and methods (12 units)
- Select one of the four (12 units)
    - 1.202 Demand Model
    - 1.208 Resilient Networks
    - 1.260 Logistics Systems
    - 11.478 Behavioral Science and Urban Mobility
- 11.251 Frontier of Transportation Research (3 units)
  Students enroll in the subject in the fall and spring of their first year (6 units earned over two terms)

Computation/Analytics (select one)

- 6.439/IDS.131 Statistics, Computation and Applications
- 6.c51 Modeling with Machine Learning: from Algorithms to Applications
- 6.860 Statistical Learning Theory and Applications
- 6.867 Machine Learning
- 15.071 – The Analytics Edge
- 15.072 – Advanced Analytics Edge

Policy, Technology and Society Subjects

Students are required to select one subject from the list found in Appendix B

Electives Subjects

Students round out their degree program with one or two subjects selected in in consultation with their advisor.

A completed program of study of at least 66 units of graduate level subjects

A thesis and research requirement

Students are required to fill out and submit the program form, found at cee.mit.edu/resources, by December 15 of their first term.

The Program

The program requires each student to take 1.200, Transportation: Foundations and Methods. Students then select one of the four subject, 1.202, Demand Modeling OR 1.208, Resilient Networks OR 1.260, Logistics Systems OR 11.478, Behavior and Policy: Connections in Transportation. Selecting one of these subjects provides depth in an area, which further their educational objectives in the field of transportation. Students will also enroll in 11.251 Frontier of Transportation Research (3 credits), in both the fall and spring term of their first academic year to experience the breadth of transportation research at MIT.

To fulfill the computation and analytics aspect of the curriculum requirement students may select 6.439/IDS.131 Statistics, Computation and Applications, OR 6.c51 Modeling with Machine Learning: from Algorithms to Applications (subsuming 1.224 Machine Learning for Sustainable Systems), OR 6.860 Statistical Learning Theory and Applications, OR 6.867 Machine Learning, OR 15.071 The Analytics Edge, OR 15.072 Advanced Analytics Edge. Students may also submit a petition to the Program for an equivalent or higher level subject to satisfy the computation and analytics requirement. In working with your advisor please select the subject that is best suited to your research and educational objectives.

Students will also select a Subject in Policy, Technology or Society, with a list of possible subjects found in Appendix B. Lastly, students will work with their advisors to fulfill the remaining credits, either aiming to build their depth of understanding in a selected area of interests or emphasize breadth rather than depth in a single area.

Note on Petitions: Program Petitions are submitted to the Academic Programs Office for subject substitution requests.

Petitions for an Institute level request, are administered through the Office of Graduate Education, and are used for academic requests including, but not limited to, requesting graduate level credit for an undergraduate level subject, filing for dual degree status, etc. If you would like to request grad level credit for a subject you must take action at the start of the term AND the instructor must agree to assign and grade additional work. Note that while the petition can cover multiple requests, there is a $50 filing fee. The Academic Administrator in the Interdepartmental Program in Transportation, in the CEE Academic Programs Office, can sign for the program and then you will submit the form to the OGE in 3-138.

Research Requirement and Thesis Registration

Research plays an integral role in the MST degree, and this research effort is tracked academically through enrollment in your department of registration's thesis subject designation.

In the Interdepartmental Program in Transportation, we **require each graduate student to register for either 1.982 every term that they are in the program *except the final term when a student is on the degree list***. The units for 1.982 should fill in the term load to equal 48 units (a full subject load), but with a minimum of 12 units of 1.982 in a given term. The number of credit hours is determined in consultation with your advisor. First-year students are required to register for 24 units of 1.982 and should meet with their supervisors on a weekly basis. Beyond first year, the number of credit hours is determined in consultation with your advisor.

Through enrollment in 1.982, students are formally graded on research performance each term, in accordance with MIT Faculty Rules and Regulations 2.62.3.

In the final term when a student is on the degree list they must register for 24 units of X.THG (eg, 1.THG, 11.THG, etc)

Summer Tuition Subsidy

Graduate students who are enrolled in a research degree program and who are **not** taking subjects are eligible to have their summer tuition subsidized from Institute general funds.

The subsidy applies to new or continuing graduate students in normal resident status during the preceding spring term, and who are only registered for thesis or pre-thesis research credit during the summer.

Some key points to remember:

- Graduate students who register for other summer subjects will be charged tuition on a per unit basis up to the maximum tuition.
- Students registering for summer internship subjects are not eligible and will be charged the per unit rate, up to a maximum of four units.

The Registrar's office oversees this subsidy and the source information for the points noted above can be found here: https://registrar.mit.edu/registration-academics/tuition-fees/graduate/summer-tuition-subsidy

Checklist for Submission of Master of Science in Transportation Thesis
MIT has three degree-granting cycles per year: February, May and September. Approaching the time when you will submit your thesis, you should register to be on the appropriate degree list. To register for the degree list go to student.mit.edu, select "online degree application" and follow the instructions. Once registered for the degree list you will receive a detailed email from the Graduate Administrator outlining the steps needed to complete your degree.

Submitting your Thesis to the Academic Programs Office
You are required to submit two signed copies of your thesis printed on acid-neutral or archival bond paper, by 5 pm on the day of the Department's deadline. Check with the Academic Administrator in the Interdepartmental Program in Transportation, in the CEE Academic Programs Office (cee-apo@mit.edu) to find out the date for your degree list. Reminder, the Academic Administrator in both CEE and DUSP will be responsible for retrieving the signature of the Chair of the Graduate Program Committee, please do not contact him/her directly. The copies must be unbound but secured between heavy cardboard covers with a binder clip. The front cardboard cover of each thesis copy should feature a photocopy of the top half of your thesis signature page (from the copyright up). You may simply tape or glue it on.

Congratulations! You have finished!

Appendix A
Contact Information

Kiley Clapper
Interdepartmental Program in Transportation Academic Administrator
Email: kclapper@mit.edu
Office: 1-290

Max Martelli
Academic Assistant
Email: maxmm@mit.edu
Office: 1-290

Professor Jinhua Zhao
Director, Interdepartmental Program in Transportation
Email: jinhua@MIT.EDU
Office: 9-253

Transportation Student Group (TSG)
Student group that organizes social events for interdepartmental students to connect.
Email: tsg-exec-2020@mit.edu

Appendix B
Policy, Technology and Society Subjects

This list is not exhaustive and you may petition to the TEC director to take alternate subjects to fulfill this requirement per the discretion of your advisor. Students are required to take one subject to fulfill this requirement.

- 1.251J /11.526J- Comparative Land-Use and Transportation Planning
- 10.805[J]/IDS.436[J]/ Technology, Law, and the Working Environment
- 11.255 Negotiation and Dispute Resolution in the Public Sector
- 11.478 - Behavior and Policy: Connections in Transportation
- 11.540 Urban Transportation Planning
- 15.038 Energy Economics and Policy
- 15.230 Public Policy and the Private Sector
- 16.71 Airline Industry
- 15.020 Economics of Energy, Innovation, and Sustainability
- 15.023[J] Global Climate Change: Economics, Science, and Policy
- 15.655[J]/IDS.435[J] Law, Technology, and Public Policy
- 17.310[J], STS.482[J], IDS.412[J] Science, Technology, and Public Policy
- IDS.410 Modeling and Assessment for Policy
- IDS.411 Concepts and Research in Technology and Policy
- STS.463[J] Technocracy
- STS.477[J] Writing: Science, Technology, and Society
- STS.487 Foundations of Information Policy
- IDSS.333 Risk and Decision Analysis
- IDS.521 Energy Systems and Climate Change Mitigation
- IDS.522 Mapping and Evaluating New Energy Technologies
- 2.65J/1.818J/10.391J/11.371J/22.811J Sustainable Energy
- 2.810 Manufacturing Processes and Systems
- 6.268 Network Science and Models
- 12.845[J]/IDS.526 Sustainability Science and Engineering
- 16.422 Human Supervisory Control of Automated Systems
- 16.453J/HST.518J Human Factors Engineering
- 16.89[J]/IDS.339[J] Space Systems Engineering
- 16.72 Air Traffic Control
- MAS.552J/4.557J City Science
- MAS.750 Human-Robot Interaction
- MAS.836 Sensor Technologies for Interactive Environments
- MAS.859 Space Technology for the Development Leader

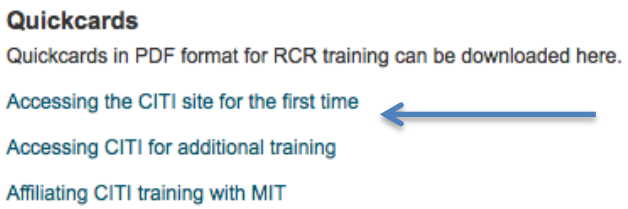
Appendix C

Responsible Conduct of Research

Each MST student is required to complete MIT's online course on the Responsible Conduct of Research within the first year, i.e. by the end of Spring term AY1. If you are paid on an NSF grant, you are required to complete the course within 60 days of being assigned to the grant. You can access the course from this web site and following the instructions below. You will need an MIT certificate.

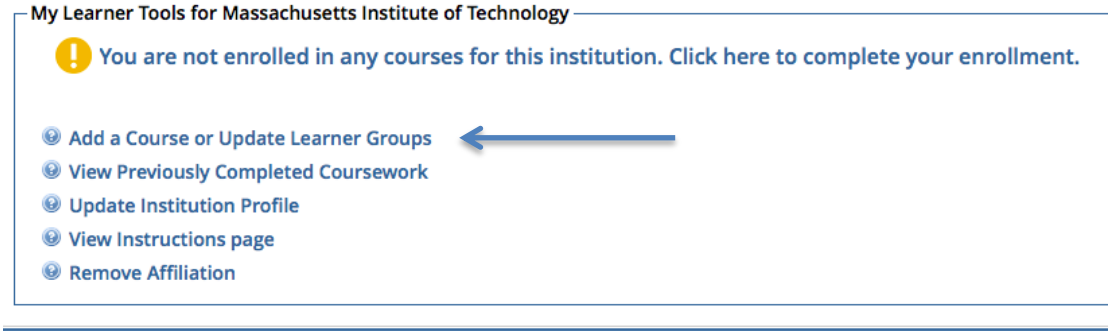
http://osp.mit.edu/compliance/responsible-conduct-of-research-rcr/register-for-rcr-training

1. On the bottom of the page, click on "accessing the site for the first time"



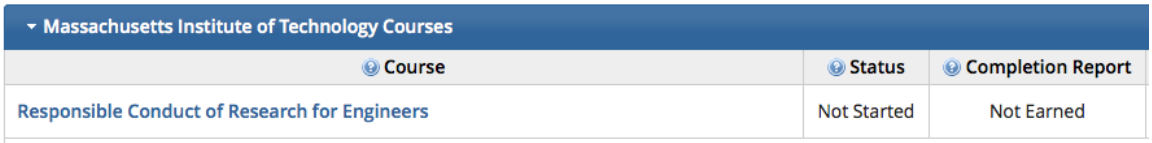
2. From there CITI will ask you to create a password.

3. After you have created your new password, click on "Add a course or Update Learner Group"



4. Go to question 4 and select, RCR for Engineers

5. You should then see that the course has been added



6. Complete The Integrity Assurance Statement before beginning the course

7. Once you have completed the course (12 modules with 80% or better on the individual quizzes) send a screen shot of your completion report to the graduate academic administrator, Kiley Clapper (cee-apo@mit.edu).