# Northwestern University Masters of Science Program in Transportation Systems Analysis and Planning (2022-2023)

The MS in TRN requires 12 course units in addition to a writing requirement and the Seminar in Transportation Engineering.

<table>
<thead>
<tr>
<th>Track</th>
<th>1st Quarter/Fall</th>
<th>2nd Quarter/Winter</th>
<th>3rd Quarter/Spring</th>
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<tbody>
<tr>
<td>4 Courses/Quarter plus Transportation Engineering Seminar</td>
<td>Transportation Systems Planning and Management (479)</td>
<td>Infrastructure Systems Analysis (483)</td>
<td>Evaluation and Decision Making for Infrastructure Systems (482)</td>
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<tr>
<td>The five courses listed on the right columns are required courses</td>
<td>Travel Demand Analysis &amp; Forecasting 1(^1) (480-1)</td>
<td>Seminar in Transportation Engineering (517) – no tuition zero credit seminar</td>
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1\(^1\) Pre-requisites: any course from ECON 281, CIV_ENV 306, IEMS 304, IEMS 315, IEMS 401, ECON 480-1, or equivalent.

- **Transportation Science and Systems**
  - Introduction to Transportation Engineering (376, *)
  - Transportation Systems Analysis I (471-1, *)
  - Transportation Systems Operations I: Scheduled Modes and Real Time Systems (472-1, +, #)
  - Seminar in Transportation Engineering (517) – no tuition zero credit seminar

- **Operations Research and Logistics**
  - Mathematical Optimization (IEMS 450-1, $, &)
  - Deterministic Models and Optimization (IEMS 313, $, &)
  - Supply chain modeling and analysis (IEMS 381)
  - Mathematical Optimization (IEMS 450-2),
  - Civil and Environmental Engineering Systems Analysis (304)
  - Data Analytics for Transportation and Urban Infrastructure Applications (495-32)

- **Travel Demand Analysis**
  - Intermediate statistics (IEMS 401,$, !)
  - Introduction to Applied Econometrics (ECON 281-0, !)
  - Uncertainty analysis (306)
  - Introduction to Econometrics (ECON 480, !)
  - Statistical Methods for Data Mining (IEMS 304),
  - Stochastic models and simulation (IEMS 315)
  - Microeconomics (Econ 310)
  - Choice Modeling (377-0,$);

- **Urban Planning and Policy**
  - Transportation Economics and Public Policy (ECON 355, $)
  - Elements of Public Finance (Econ 309)

| Writing requirement | A zero-unit independent study course (508) Please see Appendix B for detailed requirement. | Please see Appendix A for explanations. |