

# Ph.D. in Transportation Engineering

## Degree Requirements

Independent original research must be conducted by the candidate in a specific area of transportation. Dissertation work must be of publishable quality.

### Ph.D. in Transportation Engineering (students entering with a master's degree in transportation engineering or equivalent)

Code	Title	Credits
Electives		
700-level courses <sup>1</sup>		12
Dissertation		
TRAN 790	Doctoral Dissertation <sup>2</sup>	0
TRAN 792	Pre-Doctoral Research <sup>2</sup>	0
Seminar		
TRAN 791	Doctoral Seminar <sup>3</sup>	0
<b>Total Credits</b>		<b>12</b>

<sup>1</sup> No more than 3 credits may be received for TRAN 725 (Independent Study) and no more than 3 credits may be received for TRAN 726 (Independent Study). 700-level courses may be substituted by 600-level courses if the academic advisor appeals on behalf of the student to the Office of Graduate Studies and receives approval. A Ph.D. student's dissertation committee may ask the student to take additional courses above the aforementioned minimum requirements

<sup>2</sup> Ph.D. students who pass the Qualifying Examination (QE) must register for 3 credits of pre-doctoral research (TRAN 792 Pre-Doctoral Research) per semester until they defend successfully the dissertation proposal.  
Ph.D. students who defend the dissertation proposal successfully must then register for the 1-credit dissertation course (TRAN 790 Doctoral Dissertation & Research) each semester until they complete all degree requirements.

<sup>3</sup> Required of all full-time doctoral students every semester.

### Ph.D. in Transportation Engineering (students entering with only a baccalaureate degree in transportation engineering or equivalent)

Code	Title	Credits
Electives		
600-700-level courses <sup>1</sup>		36
Dissertation		
TRAN 790	Doctoral Dissertation	0
TRAN 792	Pre-Doctoral Research <sup>2</sup>	0
Seminar		
TRAN 791	Doctoral Seminar <sup>3</sup>	0
<b>Total Credits</b>		<b>36</b>

<sup>1</sup> A minimum of 12 credits of this requirement must be 700 level courses. No more than 3 credits may be received for TRAN 725 (Independent Study) and no more than 3 credits may be received for TRAN 726 (Independent Study). 700-level courses may be substituted by 600-level courses if the academic advisor appeals on behalf of the student to the Office of Graduate Studies and receives approval. A Ph.D. student's dissertation committee may ask the student to take additional courses above the aforementioned minimum requirements

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<sup>3</sup> Required of all full-time doctoral students every semester.

## Qualifying Examination

All doctoral students must pass a doctoral qualifying examination. To prepare adequately for the examination, students should take appropriate course work in transportation as well as other related subjects.

The examination has four parts: the first three are written, and the fourth is oral. The oral part is a presentation made to the graduate faculty in Transportation and is given after the written parts are evaluated.

·Part I Analytical Techniques

·Part II Transportation Facilities and Operations

·Part III Transportation Planning and Technologies

·Part IV Oral (includes a field problem)

For additional information about doctoral degree requirements, refer to the **Academic Policies and Procedures** section.

#### Dissertation Committee

The committee consists of a minimum of five members, one of whom is external to the Ph.D. program or to NJIT. The majority of the committee members are NJIT Graduate Faculty from the student's program or department having research experience or developing research interests related to the dissertation research. The dissertation committee chairperson typically is the doctoral candidate's dissertation advisor. This chairperson must be a tenured or tenure-track faculty member in the program. Two committee members, including an external member, may serve as co-advisors. The advisor, or at least one of the co-advisors, must be a tenured or tenure-track faculty member from the program. The other members of the dissertation committee, except for an external member from outside the university, must be members of NJIT's Graduate Faculty. Former students of any committee member, who are less than four years beyond doctoral completion, are specifically excluded from membership. The external members should either have appropriate faculty rank elsewhere or have sufficient research expertise.

#### Research Proposal

Doctoral students must prepare a written research proposal and make an oral presentation for approval by their dissertation committee. The proposal must be presented after formation of the committee but within twelve months after passing the qualifying examination. Research is expected to investigate or develop a unique contribution to science and technology.

#### Dissertation

A program committee must approve a dissertation topic and an NJIT faculty member, approved by the program, must be available to supervise the dissertation research. An oral defense of the dissertation is required after the dissertation committee accepts the written document.