
University of Florida
Department of Civil and Coastal Engineering
Transportation Engineering Program

Graduate Degree Requirements

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GRADUATE DEGREE REQUIREMENTS

The requirements set forth in this document have been adopted by the transportation engineering faculty in the department of Civil and Coastal Engineering, and supplement the graduate degree requirements as stated in the UF Graduate Catalog. All graduate degree candidates in the Transportation Engineering group are responsible for complying with the requirements described in this document, and the UF Graduate Catalog. For additional information on the Graduate School see: <http://gradschool.rgp.ufl.edu/>

Part 1. Master's Degree Requirements

Summary of Degree Requirements

1. Target Degrees and Study Options
2. General Requirements
3. Grade Requirements
4. Plan of Study
5. Supervisory Committee
6. Proposal and Thesis
7. Thesis Draft and Final Oral Examination
8. Final Thesis
9. Intent to Graduate
10. Optional Internship (Non-Thesis Master's Students Only)

Each of these items is described in detail in the remainder of this document.

1. Target Degrees and Study Options

The Department of Civil and Coastal Engineering offers programs of study leading to the degrees of Master of Science and Master of Engineering.

- The *Master of Engineering* (ME) degree is for those students with an undergraduate degree in an engineering discipline from an ABET accredited program or equivalent.
- The *Master of Science* (MS) degree is for those students with an undergraduate degree in a non-engineering field.

The transportation engineering program offers the thesis and non-thesis options for the student pursuing the master's degree. The student must complete an approved course of study. The thesis option is recommended to those students contemplating continuing toward the PhD, or those who desire to conduct a detailed investigation of a particular aspect of the transportation industry. The thesis option is required of those students receiving research or teaching assistantships. With his or her advisor's recommendation and approval, a master's

student who is on assistantship may switch from the thesis option to the non-thesis option with losing the assistantship.

2. General Requirements

Thesis Option

The minimum requirements for the thesis option are the completion of not less than 30 credits, of which a minimum of 24 must be coursework and a minimum of 6 must be thesis research credits.

Non-thesis (30-hour) Option

The minimum requirements for the non-thesis (30-hour) option are the completion of not less than 30 coursework credits. Research credits (and the corresponding thesis) are not required. This degree option is available only to students who do not receive research or teaching assistantships.

The student must pass an oral final examination (for both thesis and non-thesis options). For the thesis option, the oral final examination is the final thesis defense. For the non-thesis option, the oral final examination is comprehensive, examining the student's understanding on engineering fundamentals, depth of knowledge in the courses taken by the student, and the student's ability to analyze, synthesize, and evaluate transportation problems. The examination must be taken within 1-2 months of the date the degree is to be awarded. The examination committee shall consist of four transportation faculty.

Although various factors may influence the length of time needed to satisfy the master's degree requirements, most students are able to complete the program in 4 semesters.

3. Grade Requirements

The student must maintain satisfactory progress toward the degree, including a GPA of not less than 3.00. If the student's GPA falls below a 3.00, he or she will be placed on probation. The student will be expected to raise the GPA the following semester to a minimum of 3.00. Any student on assistantship whose GPA falls below a 3.00 will lose the assistantship per the Graduate School's requirements.

4. Plan of Study

Upon admission to the master's program, each student is assigned an advisor within the student's intended area of specialization. The student, in consultation with his/her advisor, will develop a plan of study (the appropriate form is available from the CCE department's graduate coordinator), based on the student's research interests, and program requirements. The plan should be submitted for approval by the academic advisor no later than the end of the first semester. The purpose of the plan is to guide the student's study and research (if applicable). It can be revised at a later stage in consultation with the advisor.

5. Supervisory Committee

When the student is ready to begin working on a thesis, the student in consultation with his/her advisor will form a supervisory committee. The supervisory committee shall consist of at least three members of the Graduate Faculty. The chair of the committee will be the student's advisor. The chair of the committee will direct the candidate in the preparation of the research proposal and in the development and defense of the thesis, while the committee as a whole will provide overall guidance in the student's research program. The supervisory committee should be formed no later than the end of second semester.

The student is responsible for initiating the formation of the supervisory committee.

6. Proposal and Thesis

The master's thesis should explore new ideas and techniques. Thus, the research topic is expected to include findings that bring new insight and knowledge to a given problem area. Emphasis should be placed on the generalization of research findings and overall transferability to engineering problems.

A research proposal detailing the proposed master's research shall be developed by the student in consultation with the advisor. The supervisory committee shall review the thesis proposal to ensure that the thesis topic and methodology are suitable.

The master's thesis proposal should include at least the following:

- Background information and a fairly complete literature review to justify the research statement;
- A problem statement, objectives, and scope;
- A detailed work plan, including the proposed data collection scheme if appropriate;
- Anticipated results and their significance, including broader impacts to society;
- Gantt chart showing the key activities of the research, and the time schedule;
- List of references.

The student is expected to work with the Reading and Writing Center at UF (<http://www.at.ufl.edu/rwcenter/>) to ensure the proposal to be well-organized, grammatically correct, and understandable. The thesis proposal must be submitted to the supervisory committee at least two weeks prior to the oral presentation/defense. The oral presentation may last up to 20 minutes. A favorable vote of at least three-fourths of the committee is required for passing the proposal presentation/defense. If the student fails the presentation/defense, at most one appeal for re-examination may be honored at the discretion of the committee.

The student is responsible for scheduling the oral presentation.

7. Thesis Draft and Final Oral Examination

The final oral examination (thesis defense) will be administered by the supervisory committee. The student, in consultation with their advisor, will prepare the thesis. (Note: The

editorial guide for theses and dissertations is included in: <http://gradschool.rgp.ufl.edu/current-files/current-editorial-guide.pdf>). All major revisions to the thesis should be completed, with appropriate content, style, and bibliography by the time this draft is submitted to the committee. The student is expected to work with the Reading and Writing Center at UF (<http://www.at.ufl.edu/rwcenter/>) to ensure the thesis to be well-organized, grammatically correct, and understandable. The thesis must be submitted to the committee members at least two weeks prior to the examination. The student should prepare copies of their plan of study and transcript along with the thesis draft.

The final oral examination must be taken within 1-2 months of the date the degree is to be awarded. The examination consists of an oral presentation of the thesis by the student, followed by a period of questions and answers. The oral presentation may last up to 20 minutes. A favorable vote of at least three-fourths of the committee is required for passing the final oral examination. If the student fails the examination, at most one appeal for re-examination may be honored at the discretion of the committee.

The student is responsible for scheduling the final oral examination.

8. Final Thesis

The graduate school provides a detailed checklist for the submission of the thesis to the Graduate School (See: <http://gradschool.rgp.ufl.edu/editorial/deadlines-masters.html>). A final copy of the thesis must be provided to the advisor and committee members as requested upon completion of the program.

9. Intent to Graduate

The student is responsible for activating his/her intent to graduate and for ensuring all program requirements have been satisfied.

10. Optional Internship (Non-Thesis Master's Students Only)

Each graduate student in the transportation engineering group pursuing the non-thesis master's degree is allowed to take up to 3 credits to pursue an internship. The student is responsible for seeking and securing the internship, and should coordinate this activity with his/her advisor, who will be the instructor and evaluator of the internship activity.

Upon completion of the internship, the student is expected to provide a detailed description of his/her activities in report format. The following should be included in the internship report.

- Title, sponsor, and a description of each project the student was involved with and what his/her role on the project was;
- Description of the specific tasks performed by the student on each of these projects;
- Discussion of the contribution of these tasks to the ultimate solution of the problem/issue;

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- Discussion on how these tasks relate to, and supplement, the student's graduate education in transportation engineering;
 - Summary and conclusions, including a discussion on what was learned during the internship and how it benefited the student's preparation for a professional career in transportation engineering.

It is expected that the document will be approximately 5 pages, will be provided in standard report format (e.g., cover page, page numbers, headings, reasonable font size and line spacing, etc.) and will be carefully prepared to minimize spelling and grammatical errors. The report will be due on the last day of classes for the semester the student is registered for the internship. The grade to be provided for the internship credits will be a function of the quality of the report produced by the student, and will take into consideration input from the student's supervisor during the internship.

Part 2. Ph.D. Degree Requirements

The doctoral degree is by nature and tradition the highest certificate of membership in the academic community. As such, it is indicative of outstanding qualities of mind and intellectual abilities and of high attainments in a chosen field. It is therefore not necessarily conferred merely for completion of prescribed course of study and research no matter how long or faithfully pursued. All requirements and regulations leading to the doctoral degree are devices whereby the student may demonstrate present capabilities and future promise for scholarly work.

Summary of Degree Requirements

1. Preliminary Plan of Study
2. Pre-qualifying Examinations
3. Doctoral Supervisory Committee
4. Final Plan of Study
5. Dissertation Proposal and Admission to Candidacy
6. Dissertation Draft and Final Oral Examination
7. Final Dissertation
8. Intent to Graduate

Each of these items is described in detail in the remainder of this document.

1. Preliminary Plan of Study

Upon admission to the doctoral program, each student is assigned an advisor within the student's intended area of specialization. The candidate, in consultation with his/her advisor, will develop a preliminary plan of study (the appropriate form is available from the CCE department's graduate coordinator), based on the candidate's research interests, and program requirements. A minimum of 90 credits beyond the bachelor's degree is required for the Ph.D. degree. No more than 30 semester hours of a master's degree from another institution earned in the last seven years will be transferred to a doctoral program. However, if the master's

degree is in a discipline different from the doctoral program, the master's work will not be counted in the program unless petitioned by the student's supervisory committee.

The preliminary plan should be submitted for approval of the advisor no later than the end of the first semester.

2. Pre-qualifying Examination

The objectives of the Ph.D. pre-qualifying examination (written and oral) are to determine whether the student is qualified to pursue a Ph.D. degree and to identify courses that will be required in the student's intended area of specialization. The exam process is intended to identify the student's knowledge of engineering fundamentals, depth of knowledge in the intended area of specialization, and the student's ability to analyze, synthesize, evaluate, and formulate solutions to transportation problems. An additional objective of this examination is to evaluate the student's ability to communicate in oral and written English.

The committee for the pre-qualifying examination shall consist of all transportation engineering faculty. The pre-qualifying examination should be taken by the end of the second semester, and no later than the end of the third semester of the Ph.D. program.

Each student is responsible for scheduling the pre-qualifying examination with their Ph.D. adviser.

The pre-qualifying examination will test the student's retained capabilities from previous and current coursework and research projects, with particular emphasis on the student's competency in their proposed area of research. The exam includes three parts, which will test the student's technical knowledge, research capabilities, and communication skills.

(a) Technical knowledge test. This test will require the student to answer a certain number of questions in a given time window. The chair of the pre-qualifying examination committee shall solicit questions from the committee members covering specific areas of required competence. It is expected that each committee member will provide questions, and the student will be required to answer a subset of questions from all committee members. Each committee member has the choice of whether to make their exam portion open-book, or closed-book. Any open-book portion will be given before a closed-book portion. This exam is typically scheduled for an 8-hour duration in the first/second week of May.

(b) Research capability test. This test will require the student to work on a small research project and submit a 15-page project report. The format of the report should follow TRB format guidelines. After the submission, the committee will schedule a debriefing to discuss the student's project report. During the debriefing, the student will be expected to answer questions from the committee about the content and presentation of the report. This component of the exam will take approximately one semester to complete. The project report submission deadline is at the end of the first week of May. The debriefing is typically scheduled in the second week of May.

The project topic will be closely related to the student's area of interest. Possible topics may include critical paper review, a survey, a proposal for a potential research topic, a data analysis, etc. The students who plan to take the pre-qualifying exam in the Spring semester should contact their advisor to obtain their assigned topic before/around the December Holiday break. In conducting this project, the advisor's inputs will be limited to guidance on nontechnical issues, and the student is expected to complete the project report independently. Collaboration with others, including students, faculty, staff, and transportation professionals is not allowed. This component of the pre-qualifying exam will focus on examining the student's capabilities of understanding their assigned/selected research area(s), creative thinking, doing independent work and assess his/her English writing skills. Thus, the project report evaluation will consider grammar, structure and research capability, etc.

A favorable consensus vote from all committee members is required for passing both the knowledge and research capability components of the pre-qualifying examination. If the student fails the technical knowledge component, at most one appeal for re-examination may be honored at the discretion of the committee. Re-examination may consist of re-taking a technical knowledge component, taking an extra technical course, etc. The committee will determine which of these options is more suitable on a case-by-case basis.

3. Doctoral Supervisory Committee

After successful completion of the pre-qualifying examination, the Ph.D. student in consultation with their advisor will form the doctoral supervisory committee. The supervisory committee shall consist of at least four members of the Graduate Faculty. The chair of the committee will be the student's advisor. In general, the chair and at least two other members must be from the transportation faculty, while one committee member should be from outside the Department of Civil and Coastal Engineering.

The chair of the committee will direct the student in the preparation of the research proposal and in the development and defense of the dissertation, while the committee as a whole will provide overall guidance in the student's doctoral program. The entire committee will prepare, administer, and evaluate the student's examinations. A favorable vote of at least three-fourths of the committee is required for passing the examination

The student is responsible for initiating the formation of the supervisory committee.

4. Final Plan of Study

The student, in consultation with their advisor and the supervisory committee, will finalize the plan of study to satisfy program requirements based on the results of the pre-qualifying examination.

5. Dissertation Proposal and Admission to Candidacy

A formal proposal detailing the proposed doctoral research shall be developed by the student in consultation with their advisor. The dissertation proposal must be submitted to the supervisory committee at least two weeks prior to the oral qualifying examination.

The dissertation proposal should include at least the following:

- Background information and a fairly complete literature review to justify the research statement;
- A problem statement, objectives, and scope;
- A detailed work plan, including the proposed data collection scheme if appropriate;
- Anticipated results and their significance, including broader impacts to society;
- Gantt chart showing the key activities of the research, and the time schedule;
- List of references.

The student is expected to work with the Reading and Writing Center at UF(<http://www.at.ufl.edu/rwcenter/>) to ensure the proposal to be well-organized, grammatically correct, and understandable.

The oral qualifying examination consists of a 30-minute oral presentation by the student, followed by a period of questions and answers. A favorable vote of at least three-fourths of the committee is required to pass the examination. If the student fails the examination, at most one appeal for re-examination may be honored at the discretion of the committee.

Procedures for the Qualifying Examination for Doctoral Degrees

- The advisor in consultation with the supervisory committee and the student will determine when the student will attempt his/her oral exam. Once this has been determined, the student will contact the Graduate Records and Advising Center to have the Admission to Candidacy form completed five working days prior to the date of the exam.
- If the student successfully completes the oral exam, the Admission to Candidacy form will be signed off by the committee members and forwarded to the Graduate Records and Advising Center for processing.
- The Graduate Records and Advising Center will then forward the form to the Dean of the College of Engineering to receive the Dean's signature.
- The Dean's office will then forward the form to the Graduate School.

6. Dissertation Draft and Final Oral Examination

The final oral examination (dissertation defense) will be administered by the entire supervisory committee. The student, in consultation with their advisor, will prepare the dissertation draft, ensuring adequate consultation with all supervisory committee members (Note: The editorial guide for theses and dissertations is included in: <http://gradschool.rgp.ufl.edu/current-files/current-editorial-guide.pdf>). All major revisions to

the dissertation should be completed, with appropriate content, style, and bibliography by the time this draft is submitted to the committee. The student is expected to work with the Reading and Writing Center at UF (<http://www.at.ufl.edu/rwcenter/>) to ensure the dissertation to be well-organized, grammatically correct, and understandable. The dissertation must be submitted to the committee members one month prior to the examination. After submission, the student will contact and meet with each committee member to discuss and revise the dissertation to address concerns, comments and suggestions.

If all committee members agree, the student will proceed to schedule a final oral examination. The oral examination should be taken not earlier than 6 months before degree award. The examination consists of a 30-minute oral presentation of the dissertation by the candidate, followed by a period of questions and answers. The oral presentation of the dissertation is open to the public.

A favorable vote of all committee members is required for passing the final oral examination. If the student fails, re-examination may be honored at the discretion of the committee.

7. Final Dissertation

The graduate school provides a detailed checklist for the submission of the dissertation to the Graduate School (See: <http://gradschool.rgp.ufl.edu/editorial/deadlines-doctoral.html>). Two final copies of the dissertation (hardcover) must be provided to the committee chair and the Transportation Program upon completion of the program.

8. Intent to Graduate

The student is responsible for activating his/her intent to graduate and for ensuring all program requirements have been satisfied.