Civil & Environmental Engineering
Transportation Specialty
Ph.D. Degree Requirements

1. Degree requirements:

Credits from Master's Degree	30
Additional Coursework	24 (54 total required; can include up to 3 seminar credits; and up to 3 CEE 600 credits if CEE 600 project is unrelated to thesis / dissertation topics)
CEE 800 Dissertation	27 minimum
Total	**90**

2. Notes and General Requirements

□ The PhD program plan must be approved by your faculty advisor and submitted to the CEE Graduate Advising Office before the end of your first academic quarter.
□ The following courses are required:
  o CET 502/599   Research Methods in Transportation
  o CET 511   Planning for People and Freight
  o CET 512   Transportation Data Collection
  o CET 513   Transportation Networks and Optimization
  o CET 521   Inferential Data Analysis for Engineers
  o CET 522   Transportation Data Management and Visualization

3. Additional Requirements
□ CET graduate core (CET 511, 512, 513, 521, 522) must be taken for a numeric grade
□ A minimum of 18 graduate credits must be taken for a numeric grade
□ Minimum cumulative GPA of 3.0 overall
□ Minimum cumulative GPA of 3.0 in CET coursework
□ Minimum grade of 2.7 for a course to count toward degree requirements
□ Courses numbered 300-level (3XX) or below cannot be counted toward a graduate degree
□ Courses numbered 499 cannot be counted toward a graduate degree
□ Students should have taken classes that provide advanced breadth of knowledge beyond their primary research area, to be approved by the general exam committee.
□ See CEE departmental PhD Requirements form for additional department requirements (see link at bottom of this page).

4. PhD Qualifying Exam
The purpose of the **qualifying exam** is to assess the student's readiness to create new knowledge through doctoral level research. Through the qualifying exam, the faculty will evaluate the student's ability to:
1. Understand and apply the foundational facts, concepts, and procedures of transportation engineering
2. Analyze problems and evaluate solutions by:
   a. integrating and utilizing the knowledge and skills critical for independent and creative research
   b. synthesizing ideas and concepts at an advanced level of proficiency in areas being examined

  c. evaluating, checking, and critiquing work by constructing critical arguments and presenting them in a direct and coherent manner.

5. PhD General Exam

The purpose of the **general exam** is for the student to demonstrate:

1. The ability to formulate a research question that is academically challenging, useful, and tractable
2. Mastery of the state of the art in their field. This includes a literature review, to show how your topic has been addressed in the past, and important related concepts. Why is the work that has already been done not sufficient?
3. A clear research plan to answer the research question. How are you planning to do the research and why your plan is the best? Have you identified and justified appropriate methods and data sources?
4. The expected contributions that their research plan will generate. Why does your research matter?

6. PhD Final Examination

The purpose of the final exam is for the student to demonstrate to his or her committee satisfactory command of all aspects of the work presented and other related subjects.
Refer to the CEE Departmental PhD Requirements and Procedures forms for deadlines and procedures, available on the CEE website at: https://www.ce.washington.edu/current/phd

Alternative Courses

Alternatives to required courses can be approved by your advisor, based on your particular research interests and master's coursework completed at another university.

For example:

□ CET 521 Inferential Data Analysis for Engineers. This requirement may be satisfied with a similar quantitative methods course that fits your research needs and prior knowledge. Below is a list of alternative courses to CET 521 that have been approved by the transportation faculty group:
  o ECON 482 Economic Methods
  o GEOG 426 Advanced Quantitative Methods
  o INDE 424 Simulation
  o INDE 521 Quality Control in Manufacturing
  o STAT 421 Applied Statistics and Experimental Design
  o STAT 423 Applied Regression and Analysis of Variance
  o STAT 486 Experimental Design