

DEPARTMENT OF
CIVIL AND ENVIRONMENTAL ENGINEERING

GRADUATE HANDBOOK

2024–2025



SCHOOL *of* ENGINEERING
& APPLIED SCIENCE
Department of Civil and
Environmental Engineering

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1. Introduction

We welcome you to the Department of Civil and Environmental Engineering (CEE) at the University of Virginia (UVA). Our department has a long-standing commitment to excellence in education, research, and public service. Our mission is to educate future engineers charged with conceptualizing, creating, and maintaining infrastructure that serves society and protects the environment, and to generate and disseminate knowledge that advances sustainable, resilient, and equitable communities. In CEE, we recognize that everyone benefits when people with different backgrounds, cultures, and disciplines work together. We are committed to sustaining a vibrant and inclusive community in which everyone is welcome and supported.

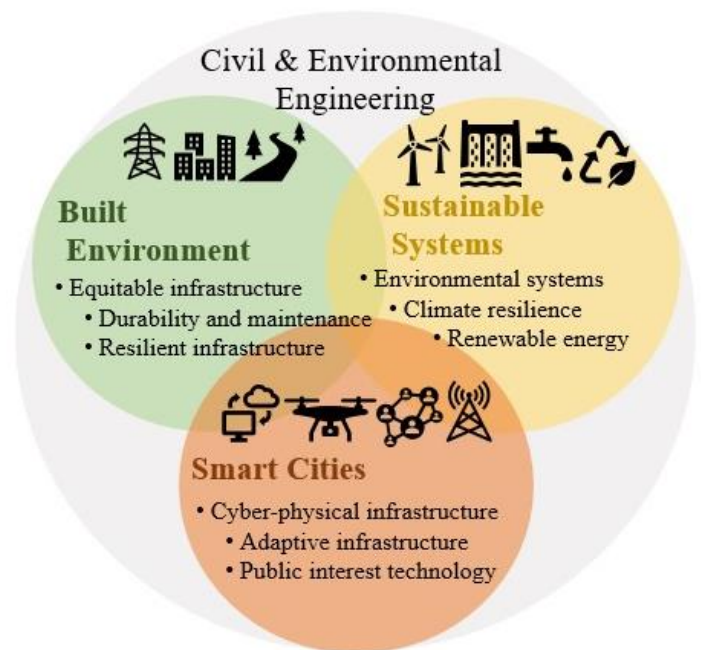
CEE at UVA offers several graduate degrees for advanced study in civil and environmental engineering, including *Master of Engineering* (ME) in Civil Engineering, *Master of Science* (MS) in Civil Engineering, and *Doctor of Philosophy* (PhD) in Civil Engineering. The ME, MS, and PhD degrees form the core of the CEE graduate educational program and are offered in five tracks or areas of specialization:

- Construction Engineering and Management (CEM)
- Environmental and Water Resources Engineering (EWRE)
- Infrastructure Systems Engineering (ISE)
- Structural Engineering (STR)
- Transportation Engineering (TRN)

In CEE, we aim to transform how we design, build, operate, and maintain infrastructure as sustainable and smart systems in the service of society. To do this, we seek to be a department that merges traditional methods and knowledge in civil and environmental engineering with novel approaches from systems engineering, sustainability science, and cyber-physical systems through offering three interdisciplinary research areas that emphasize the new perspectives and priorities in civil and environmental engineering for addressing pressing societal challenge:

- [Built Environment](#)
- [Sustainable Systems](#)
- [Smart Cities](#)

This handbook has been prepared to assist you to make the transition into our graduate program and to serve as a resource for you during your pursuit of a graduate degree. Graduate school is a place to explore the boundaries of the possible and develop your scholarship potential to the highest level, while seizing the opportunity to interact with a wide range of talented students and faculty colleagues. We welcome you as a partner in learning and as a colleague in CEE.



2. General Academic Rules

[University Registrar](#) and the [UVA Engineering Office of Graduate Programs](#) provide a comprehensive guide for general academic rules and requirements.

2.1. CEE Academic Requirement for ME, MS, and PhD Degrees

The following table provides a summary of academic requirements for the graduate degrees offered in CEE at UVA. For more information about CEE-specific expectations, rules, and requirements, please refer to §1 (for ME), §0 (for MS), and §4.6 (for PhD).

	ME	MS	PhD
Credit Hour Requirement	30 ⁽¹⁾	30 ⁽²⁾	72 ⁽³⁾
CEE Seminars	Encouraged to attend	Required to attend	Required to attend
Qualifying Exam	N/A	N/A	Required Milestone
Dissertation Proposal	N/A	N/A	Required Milestone
Final Oral Presentation	N/A	Required Milestone: Thesis Defense	Required Milestone: Dissertation Defense
Final Written Report	N/A	Required Milestone: MS Thesis	Required Milestone: PhD Dissertation

⁽¹⁾ ME students can pursue a research-based project or a paid/unpaid professional internship for course credit as CE 6995. This will count towards the requirement for the degree.

⁽²⁾ Refer to §4.3 for more information.

⁽³⁾ Refer to §5.3 for more information.

2.2. Apply for Graduation

All graduate students must apply in SIS to graduate and be placed on the degree list in the semester in which they are expected to graduate by the deadline set and announced by the Engineering School Graduate Registrar.

2.3. Time Limit

For MS degree, all requirements must be completed within five years after matriculation to the graduate program.

For ME and PhD degrees, all requirements must be completed within seven years after matriculation to the graduate program.

2.4. English Language Proficiency

All incoming (new) graduate students whose first language is one other than English are required to take the University of Virginia English Language Proficiency Exam (UVELPE) unless they have been exempted from TOEFL or IELTS.

All prospective graduate teaching assistants whose first language is one other than English are required to take the oral section of the UVELPE Test. There are no exemptions from the UVELPE Oral Test. A score of at least 55 is required for permission to begin teaching without completion of appropriate oral language training.

UVELPE test is administered by the Center for American English Language and Culture (CAELC). For more information about the UVELPE test as well as the testing times and registration, please visit [CAELC website](#).

2.5. Ombuds

Students are strongly encouraged to express their comments and concerns regarding their experiences in CEE graduate programs with the CEE Director of Graduate Studies.

In addition, there is a university ombuds that can be reached at ombuds@virginia.edu, with additional contact information [here](#). The ombuds should be considered by the students as an individual who is available for confidential discussion of concerns regarding students' education. [This site](#) explains the purpose and limitations of the ombuds, with additional student resources provided [here](#). Students are welcome to request a meeting with either the CEE Graduate Program Director or the University Ombuds at any time.

2.6. School of Engineering Vacation and Leave Policy

UVA Engineering students who are funded through graduate assistantships and UVA Engineering graduate fellowships are required to pursue their training on a full-time basis, devoting each day of the normal work week (M-F), plus any additional time required by their research projects and academic courses.

The number of hours a week of an assistantship appointment is devoted to the duties of the research and/or teaching assistantship. All remaining academic requirements for a student's degree, such as classes, thesis or dissertation research, and service activities are in addition to the assistantship appointment hours.

Additionally, the following guidelines for holiday and leave time have been established by the School of Engineering, and in some cases University policy. These represent the minimum leave to which a graduate student is entitled. Individual graduate programs might not have a formalized system for accounting for time off; if so, time off monitoring falls under the honor system and is the responsibility of the student. Students should consult with their advisor for approval with as much advanced notice as possible for any planned leave. Students or faculty with questions or concerns should consult with their program's director of graduate studies.

These policies do not supersede any HR policy. In addition, these policies do not create a contractual relationship with any student and the policies may be reviewed and amended annually by the UVA Engineering Graduate Studies Committee.

Graduate students are entitled to observe the following 12 days as holidays: Day Before New Year's Day, New Year's Day, Martin Luther King Jr. Day, Memorial Day, Juneteenth, Independence Day, Election Day, Day Before Thanksgiving, Thanksgiving Day, Day After Thanksgiving, and two winter break days: December 24 and December 25. In years for which a holiday falls on a traditional weekend (Saturday or Sunday) the holiday may be observed on the closest traditional business day (Friday or Monday).

Graduate students are allowed three weeks (15 traditional work days, counting all days Monday through Friday) of time off per year. This time off is not broken down into specific types (e.g. personal time, vacation, sick time); rather, it is combined into one flexible time off type. Students shall continue to receive pay (stipend or wage) during approved time off and holidays. The times between academic terms, the summers, and spring break are considered active parts of the training period and are not free times. Students taking courses are expected to attend all classes and take exams as scheduled. To the extent possible, time off should be arranged with the research supervisor, and teaching supervisor, where applicable. Students cannot be asked to provide documentation from a health care provider to use time off. Time off should be prorated for students who receive less than 12 months of support.

Time off can be accrued from one year to the next year only with the prior written approval of the student's advisor and only up to a maximum of 15 traditional work days (counting all days Monday through Friday), to allow for international travel, for example.

For additional information, visit [Vacation and Leave](#) section of the School of Engineering Academic Rules.

2.7. First Destination Survey

As the final milestone, all graduate students in School of Engineering must complete the First Destination survey informing the school whether employed, continuing education, military service, volunteering, or still seeking employment.

2.8. Financial Aid

Most admitted MS and PhD students receive financial aid. Funding offers take the form of GRAs, GTAs and/or various Department or School of Engineering fellowships. Funded offers also include tuition waiver and health insurance.

Some MS and PhD students may be funded by external fellowships (e.g., NSF GRFP) or third-party entities (e.g., employer, government, military agencies).

2.9. Administrative Forms

It is important that graduate students submit administrative forms related to degree requirements in a timely manner to the CEE Student Services Coordinator. These forms can be found on the Engineering School's [website](#).

3. Master of Engineering (ME) Program

The Master of Engineering (ME) degree is a coursework-based graduate professional degree for those wishing to pursue careers in industry, consulting, or government. Our program is designed to provide a blend of fundamental knowledge and professional skills needed by practicing engineers. The ME program is an intensive, non-thesis program that may be completed on Grounds as a full-time student; online as a student in the Virginia Engineering Online (VEO) program; or in a hybrid combination of VEO and time on Grounds.

3.1. Faculty Advisor

Upon admission to the ME program, the student is assigned to the ME program faculty advisor. The student should meet with the faculty advisor to plan their course selection and career objectives before the start of each semester.

3.2. Program Requirements

ME students must complete a minimum of 30 graded engineering graduate-level credits (5000 level and above) to satisfy the Engineering School's academic requirements while maintaining a minimum grade point average of 3.0. The ME degree does not require a thesis; however, students may pursue a research-based project or a paid/unpaid professional internship for course credit as CE 6995.

VEO students should refer to [VEO program website](#) for information regarding the program requirements.

The ME degree program is offered in five areas of specialization (or track). Click on the links below to see a proposed plan of study for each track as well as a summary of required prerequisite undergraduate courses. In some instances, certain prerequisites can be taken concurrently with graduate courses.

- [Construction Engineering and Management Track \(CEM\)](#)
- [Environmental and Water Resources Engineering Track \(EWRE\)](#)
- [Infrastructure Systems Engineering Track \(ISE\)](#)
- [Structural Engineering Track \(STR\)](#)
- [Transportation Engineering Track \(TRN\)](#)

It is recommended that a plan of study be prepared under the guidance of the ME program faculty advisor by the end of the first semester of study. The plan of study may be revised, if necessary, at any time.

3.3. Transfer Credits

Up to 12 credit hours of graduate courses may be transferred for On-Grounds students. Only courses with a grade of B or better that have not been applied toward another degree may be transferred. The request for credit transfer must include the following documents: a completed [Request Approval of Transfer Credits Form](#), a description of course content and level, and an official transcript. The documents are provided to the CEE Student Services Coordinator to facilitate processing of the request. If the student is already admitted into a UVA program, then the request for credit transfer must be preapproved before the course is taken. All transfer credits are subject to the approval of the student's faculty advisor and the Engineering School Dean's office.

VEO students should refer to [VEO program website](#) for information regarding transfer credits.

3.4. Special Circumstances

Students pursuing a bachelor's degree in an engineering field at UVA are encouraged to start the ME in Civil Engineering program during their fourth year, with appropriate guidance from their academic advisor and approval from course instructors (as necessary). As 4000-level classes may not be used toward the ME degree, students are encouraged to take 5000- or 6000-level classes with instructor approval. More information can be found on [UVAccelerate program website](#).

Students without a bachelor's degree in an engineering field may apply for admission to the ME program; however, they must complete certain prerequisite or corequisite courses. Please refer to the links provided in §3.2 to see a list of prerequisites. If accepted, the student will work with their faculty advisor to map out an appropriate sequence of courses toward the degree.

3.5. Seminar Series

CEE Seminar Series is a weekly event during the academic year that brings together CEE faculty and students to learn about new research and practices in different areas of civil and environmental engineering. Research presentations are given by Distinguished Speakers from within the university community as well as nationally and internationally recognized researchers and engineers in academia and industry. The weekly seminars also include talks and presentations from CEE graduate students as well as presentations geared towards professional development.

ME students are encouraged to attend the weekly CEE seminars, however, attending the seminars is not a requirement for the ME program.

3.6. Outcome Assessment Forms

In the semester that ME students are planning to graduate and before the examination period begins, students must work with the ME program faculty advisor and the CEE Student Services Coordinator to complete and submit three Outcome Assessment Forms: [Engineering Analysis Assessment](#), [Engineering Design Assessment](#), and [Engineering Technical Writing Assessment](#).

All the necessary forms are available from the Engineering School's [website](#).

3.7. First Destination Survey

After successful completion of the program assessment forms, all ME students must complete the First Destination survey informing the school whether employed, continuing education, military service, volunteering, or still seeking employment.

4. Master of Science (MS) Program

The Master of Science (MS) degree is a graduate degree with a focus on research. The MS supports those wishing to pursue careers in industry, consulting, or government. More importantly, the degree is well suited for those that are interested in pursuing a path of research at the PhD level. Our program is designed to provide a blend of research skills, fundamental knowledge development, and professional skills needed for careers in research and industry. School of Engineering academic requirements for MS students and steps to graduation can be found on the [Office of Graduate Programs website](#).

MS students should check the accuracy and completeness of their academic requirements report in the Student Information System (SIS) frequently, at least at the start and end of each semester and in consultation with their faculty advisor.

4.1. Faculty Advisor

All MS students must have a faculty advisor who will supervise their research. The student's advisor will also assist them with meeting the MS program requirements.

4.2. Overview of the Program Requirements

The Master of Science (MS) degree in Civil Engineering requires satisfactory completion of required coursework and defense of the MS thesis. In addition, MS students are required to attend CEE seminars.

4.3. Coursework Requirements

MS students must complete a minimum of 24 graded engineering graduate-level credits (5000 level and above), of which at least 12 credits must be civil engineering courses (CE designation), and a total of 30 credits consisting of graded coursework and research (CE 8999) to satisfy the Engineering School's academic requirements while maintaining a minimum grade point average of 3.0. The MS degree program in CEE is offered in five areas of specialization (or track). Click on the links below to see a proposed plan of study for each track as well as a summary of required prerequisite undergraduate courses. In some instances, certain prerequisites can be taken concurrently with graduate courses.

- [Construction Engineering and Management Track \(CEM\)](#)
- [Environmental and Water Resources Engineering Track \(EWRE\)](#)
- [Infrastructure Systems Engineering Track \(ISE\)](#)
- [Structural Engineering Track \(STR\)](#)
- [Transportation Engineering Track \(TRN\)](#)

The plan of study must be prepared under the guidance of the student's MS advisor.

4.4. MS Thesis

MS students must satisfactorily present and defend a thesis based on independent, original research supervised by the student's MS advisor. The MS thesis defense is conducted orally and publicly in front of the MS thesis committee.

4.4.1. Thesis Committee

Students are required to consult with their advisor when forming their MS thesis committee. The MS thesis committee must consist of at least **three UVA faculty members** and meet the following requirements:

- A minimum of two CEE faculty members.
 - A UVA faculty member who has a courtesy appointment with CEE does not count as a CEE faculty member.
- One committee member who is not the student's advisor must be identified as the Committee Chair.
 - The Committee Chair must hold their primary appointment with CEE.
- Research Scientists from the Virginia Transportation Research Council (VTRC) are allowed to serve as a voting member in addition to the minimum number of committee members required.
- Committee members from outside the UVA (i.e., external members) are allowed to serve as a voting member in addition to the minimum number of committee members required.
 - A CV or biography is required for all external members.

Students are referred to “Committee Requirements and Guidelines” document for additional details on committee structure and eligible faculty members.

The MS thesis committee must review and approve the student's academic requirements report, written thesis, and oral thesis defense.

Once the MS thesis committee is selected, students must request the appointment of the Committee by completing the [Appointment of Final Examination Committee Form](#) and sending it to the CEE Student Services Coordinator. After department approval, the form will be submitted by the CEE Student Services Coordinator to the Engineering School Graduate Registrar for approval. MS thesis committee must be approved **at least two weeks** before the date of the defense. It is the student's responsibility to make sure the form is submitted to the CEE Student Services Coordinator early enough to allow sufficient time for processing and approval. Failure to submit the form on time may result in delays or rescheduling of the defense.

4.4.2. MS Thesis Defense Timing

With the approval of their MS advisor, the student must coordinate with their committee members and schedule a date for the MS thesis defense. Students must pay attention to the defense deadlines set and announced by the Engineering School Graduate Registrar at the start of each semester. All members of the thesis committee must be available either virtually (online) or in person, at the date and time of the scheduled defense.

Once the defense date is confirmed, and with their advisor's approval, students must send their thesis document to the thesis committee **at least one week** prior to the defense. This one-week requirement is a minimum; students should ensure their committee has ample time to thoroughly review the thesis before the defense. There are no specific formatting requirements for the thesis document, but it should include: a title page, table of contents, list of figures, list of tables, abstract, and references list. Students are highly encouraged to get examples from their advisor, their peers, or from [Libra website](#) to use as references or templates for formatting.

A public announcement of the MS thesis defense must be sent out by CEE Student Services Coordinator **at least one week** before the defense. To facilitate this, students must fill out the announcement template available in Appendix I and send it to the CEE Student Services Coordinator **at least two weeks** prior to the defense.

4.4.3. MS Thesis Defense

The MS thesis defense is conducted orally and publicly in front of the entire thesis committee, which was previously approved by the Engineering Graduate Registrar's Office. The defense is designed to test the student's knowledge of their field of research. The first part of the MS thesis

defense, which should last approximately 30 minutes, is an oral presentation of the thesis by the student. This will be followed by a one- to two-hour oral defense before the thesis committee.

A student who does not perform satisfactorily in the defense may, with the recommendation of two-thirds majority of the thesis committee, be granted a future thesis defense after being given adequate time to prepare.

Prior to the defense, the CEE Student Services Coordinator sends two forms to the committee chair: [Graduate Engineering Thesis & Dissertation Assessment Form](#) and [Report on Dissertation or Thesis Final Examination Form](#). After the defense, the committee chair will fill out these forms and send them to the CEE Student Services Coordinator, who will send it to the Engineering Graduate Registrar.

To complete their MS degree, the student must submit their approved thesis, along with the [Thesis/Dissertation Cover and Approval Pages Form](#) to Libra, the online archive of UVA, by the deadline that is announced by the Engineering School Graduate Registrar at the start of each semester. Students should discuss any copyright/embargo issues with their advisors prior to the upload. For more information on Libra and instruction of how to upload, please visit the [Office of Graduate Programs website](#) and the [Libra's Electronic Thesis/Dissertation \(ETD\) Submission Checklist](#).

4.5. Seminar Series

As an essential component of the graduate program in CEE, MS students are required to enroll in CE 7001 (with zero credit hours), attend the CEE seminars, and receive a Satisfactory grade in their first year of the program.

CEE Seminar Series is a weekly event during the academic year that brings together CEE faculty and students to learn about new research and practices in different areas of civil and environmental engineering. Research presentations are given by Distinguished Speakers from within the university community as well as nationally and internationally recognized researchers and engineers in academia and industry. The weekly seminars also include talks and presentations from CEE graduate students as well as presentations geared towards professional development.

4.6. First Destination Survey

After successful completion of the MS thesis defense upload to Libra, all MS students must complete the First Destination survey informing the school whether employed, continuing education, military service, volunteering, or still seeking employment.

5. PhD Program

The Doctor of Philosophy (PhD) in Civil Engineering is a mentored opportunity to become an expert on a specific research topic and train for a career involving independent research. School of Engineering academic requirements for PhD students and steps to graduation can be found on the [Office of Graduate Programs website](#).

PhD students should check the accuracy and completeness of their academic requirements report (ARR) in the Student Information System (SIS) frequently, at least at the start and end of each semester and in consultation with their PhD advisor.

5.1. PhD Advisor

All PhD students are assigned at least one faculty advisor who will assist them with meeting the PhD program requirements and will supervise their research.

5.2. Overview of the Program Requirements

The Doctor of Philosophy (PhD) degree at UVA requires successful completion of required coursework plus the three following major milestones:

- PhD Qualifying Exam
- PhD Dissertation Proposal
- PhD Dissertation Defense

Other requirements of the PhD degree in Civil Engineering at UVA include the following:

- Seminar: CEE PhD students are required to enroll in CE 7001 (with zero credit hours), attend the seminars, and receive a Satisfactory grade in their first year of the program.
- Publication: PhD students are *expected* to generate peer-reviewed publications from each technical chapter of their dissertation. Publications must be peer-reviewed, co-authored with advisor and with the student as first author. Typically, one or more first-authored peer-reviewed publications will have already been accepted by the time of the PhD defense. Sufficiency of the publication record is determined by the student's dissertation defense committee.
- Conference/Seminar Presentation: PhD students are required to present their research at least once at a conference, CEE Seminar Series or other public venue approved by the PhD Committee.

5.3. Overall Timeline

In our PhD program, students have significant ownership over their academic journey and are responsible for actively progressing toward graduation. Therefore, it is incumbent on the PhD student to regularly communicate with their advisor to make sure that their progression through the program is following a timeline that is suitable to and in accordance with the expectations of the PhD advisor and the program.

Typically, it takes between 4 to 5 years to successfully complete all the requirements and the milestones of the PhD program in CEE. Students who enter the program with a MS degree are typically able to complete required coursework and take the PhD qualifying exam in year 1. It may take those students who enter the program with a bachelor's degree longer to complete the required coursework. The PhD qualifying exam must be taken by the end of the second year. There must be a minimum of two full semesters (counting summer or unenrolled semesters) between a student's dissertation proposal and their final examination (dissertation defense).

However, students are highly encouraged to complete this milestone by the end of year 3 of their program.

All requirements for a PhD degree in Civil Engineering at UVA must be completed within seven years after matriculation to the program

5.4. Coursework Requirements

The PhD program in Civil Engineering requires relevant coursework to help students access foundational knowledge in their discipline while striking a balance between depth and breadth. A minimum of 24 engineering, graduate-level credits are required for all PhD students in Engineering School at UVA.

PhD students who have earned a master's degree in a STEM field will receive an automatic bulk transfer of 24 graduate credits toward the Engineering School coursework credit requirement. Students who receive a bulk transfer of credits for 24 credits are required to enroll in two CEE courses (six credits) during their PhD program at UVA.

PhD students who have earned a master's degree in a non-STEM field will receive an automatic bulk transfer of 12 graduate credits toward the Engineering School coursework credit requirement.

Students who receive a bulk transfer of credit may not transfer any additional credits toward the PhD degree.

Students who earn an ME or MS degree at UVA enroute to a PhD in CEE may use credits from their MS/ME to satisfy the coursework requirement for PhD.

The PhD degree program in CEE is offered in five areas of specialization:

- Construction Engineering and Management (CEM)
- Environmental and Water Resources Engineering (EWRE)
- Infrastructure Systems Engineering (ISE)
- Structural Engineering (STR)
- Transportation Engineering (TRN)

5.5. PhD Qualifying Exam

The purpose of the PhD qualifying exam (also referred to as the comprehensive exam or PhD exam) is to assess the student's research aptitude and confirm that they have the skills and knowledge base necessary to conduct original research and to make a substantive contribution in their field. The exam provides an opportunity for students to receive early, individualized feedback regarding their strengths and weaknesses in research and foundational knowledge. The PhD qualifying exam in CEE consists of two parts, written and oral. Successful students will demonstrate that they can:

- understand, interpret, and critically evaluate relevant literature,
- apply technical/engineering tools, data analysis, concepts, coursework and/or approaches to gain insight on real-world and/or research problems,
- effectively communicate results in both oral and written formats, and
- answer questions and respond to critical feedback when sharing, defending, and revising their ideas.

5.5.1. Timing

CEE PhD students are required to successfully complete the PhD qualifying exam no later than the end of their second year in the program. Delayed examination is subject to the approval of the student's PhD advisor and the CEE Director of Graduate Studies.

PhD students who move their study to UVA from another institution in concurrence with their faculty research advisor moving to UVA and who have passed a PhD qualifying exam or its equivalent at the previous institution may, at the discretion of the UVA program, have their PhD qualifying exam milestone satisfied. Formal documentation from the previous institution is required to demonstrate the successful completion of the PhD qualifying exam or its equivalent.

5.5.2. Committee Composition Requirements for PhD Qualifying Exam

Students should work with their PhD advisor to form a committee for their qualifying exam. The committee must include **at least four members**, and meet the following requirements:

- A minimum of three CEE faculty members.
 - A UVA faculty member who has a courtesy appointment with CEE does not count as a CEE faculty member.
 - Research Scientists from VTRC may be listed as committee members but are not considered as CEE faculty.
- One committee member who is not the student's advisor must be identified as the Committee Chair.
 - The Committee Chair must hold their primary appointment with CEE.
- Committee members from outside the UVA (i.e., external members) are allowed to serve on the committee.
 - A CV or biography is required for all external members.

Students are referred to “CEE Committee Requirements and Guidelines” document for additional details on committee structure and eligible faculty members.

Once the committee members are identified, students must request the appointment of the Committee by completing the [Recommendation and Certification of Doctoral Advisory Committee Form¹](#) and sending it to the CEE Student Services Coordinator for approval. After approval, the form will be submitted by the CEE Student Services Coordinator to the Engineering School Graduate Registrar.

5.5.3. Exam Structure and Procedure

Before the start of each Fall and Spring semester, CEE doctoral students are asked to complete a survey indicating whether they plan to take their qualifying exam during that term. If so, they must also provide the names of their anticipated committee members. This process allows faculty members to plan and coordinate the exam schedule for student examinees in advance. Students will then receive detailed instructions and deadlines from the Director of Graduate Studies regarding the formation of the qualifying exam committee and the various components of the exam. These instructions will also include a designated window during which the oral component of the exam should be scheduled. All members of the committee must be available either virtually (online) or in person, at the date and time of the oral exam. The written exam date is two weeks before the oral exam. Once the date for oral and written exams are determined, the student should then work backward from those dates to complete the activities summarized below.

In preparation for the exam, a student examinee should complete a two-page document that (i) outlines their research area and explains how it will advance the knowledge in their PhD discipline; (ii) describes how their past, current, and future coursework aligns with their research and career goals; and (iii) describes how the expertise of each of their committee members is relevant to their research and career goals. Finally, for part (iv), the student should develop a preliminary reading list (e.g., research papers, book chapters, policy briefs) organized by topic to be used in their qualifying exam.

¹ The preceding membership requirements supersede what may appear on committee appointment form.

No later than one month before their scheduled written exam date, the student must send this four-part document, together with their *Academic Requirements Report* from SIS to the committee chair. The committee chair will then send these documents to the committee members. After allowing a week for committee members to review these materials, the student should then meet individually with each member of their committee to discuss the expected format of their portion of the exam and whether the reading list should be modified. The student will then circulate the final reading list to the committee chair *no later than two weeks before the scheduled written exam date*. It is recommended that students start this process early so they can have a thoughtful, engaged dialogue with the committee, time to prepare a comprehensive reading list, and a clear expectation of the type of questions to expect.

The committee members will then prepare their questions based upon the research overview, finalized reading list, coursework history, and discussed exam format. The committee chair will then collect all the questions and send them to the student with the necessary instructions at the date and time set for the written exam.

The student will work on the written exam for a duration determined by the committee chair, but this period will not exceed seven days. At the end of the exam period, the student will submit the answers together with any supplementary document to the committee chair who then shares them with the committee. Each committee member will score their own questions using the criteria of the CEE Qualifying Exam Assessment Form (written score column). Each committee member should complete their own scoring prior to the oral exam. The form will be provided by the CEE Student Services Coordinator.

The oral exam will consist of two parts: a brief prepared presentation summarizing the student's responses to the questions and the questions from the committee. Questions from the committee are typically built from the answers on written exam but may also include additional questions. There is no stipulated duration for the oral exam, but students should reserve at least a 2-hour block. Once the oral exam has concluded, each committee member will re-score their questions using the criteria of the CEE Qualifying Exam Assessment Form (oral score column). The committee chair is responsible for collecting and organizing feedback from the committee and then communicating it to the student after the exam. The committee chair is also responsible for filling out the [Report on PhD Exam Form](#) and sending it to the CEE Student Services Coordinator.

5.5.4. Exam Outcome

The outcome of the exam is determined collectively by the qualifying exam committee choosing from four options: pass with distinction, pass, pass with remediation, or fail. The committee weighs both parts of the exam (written and oral) at its discretion when determining the outcome. The committee chair is responsible for communicating the outcome of the exam and delivering feedback from the committee to the student after the exam.

Students who pass with remediation or fail must retake the examination within six months. If these students do not retake the exam within six months, or do not pass after the second attempt, they are dismissed from the PhD program.

5.6. PhD Dissertation Proposal

The PhD dissertation proposal marks the second key milestone in a doctoral student's journey. The dissertation proposal consists of a written document and an oral presentation (i.e., proposal defense). This milestone allows the student's committee to make three important determinations:

- To assess whether the student's knowledge of their chosen area and their understanding of relevant literature is adequate to complete a PhD.
- To recommend coursework, approaches/techniques and other resources that would facilitate

or enhance the proposed work.

- To evaluate whether or not the proposed work, if completed, would constitute an acceptable basis for a doctoral dissertation.

5.6.1. Committee Composition Requirements for PhD Dissertation Proposal

Students should work with their PhD advisor to form a committee for their dissertation proposal. The committee must include **at least five members**, and meet the following requirements:

- A minimum of four UVA faculty members.
- A minimum of three CEE faculty members.
- A minimum of one outside member:
 - An outside member (or outside the student's home department member) is defined as a current UVA faculty member whose primary appointment is outside the student's home department.
- A UVA faculty member who has a courtesy appointment with CEE does not count as a CEE faculty member but can count as an outside member.
- Research Scientists from VTRC may be listed as committee members but do not count as CEE faculty or UVA faculty.
- Committee members from outside the UVA (i.e., external members) are allowed to serve as a voting member on the committee. Emeritus faculty are considered outside UVA for the purpose of committees. A CV or biography is required for all committee members who are not UVA faculty and should be submitted to the Engineering Graduate Registrar with the form appointing the committee. The CV or biography should include the highest degree attained, the year and institution, and any relevant experience or research which would enable that member to provide expertise to the student and committee.

Students are referred to "CEE Committee Requirements and Guidelines" document for additional details on committee structure and eligible faculty members.

Once the PhD dissertation proposal committee is selected, students must request the appointment of the committee by completing the [Recommendation and Certification of Doctoral Advisory Committee Form](#)² and sending it to the CEE Student Services Coordinator. After department approval, the form will be submitted by the CEE Student Services Coordinator to the Engineering School Graduate Registrar for approval. The committee must be approved **at least two weeks** before the date of the proposal defense. It is the student's responsibility to make sure the form is submitted to the CEE Student Services Coordinator early enough to allow sufficient time for processing and approval. Failure to submit the form on time may result in delays or rescheduling of the defense.

5.6.2. Timing

Students can take their dissertation proposal as early as the semester following successful completion of their qualifying exams. There must be a minimum of two full semesters (counting summer or unenrolled semesters) between a student's dissertation proposal and their final examination (dissertation defense). Students are highly encouraged to complete this milestone by the end of the third year of their program.

The student is responsible for working with their advisor and their committee to schedule a date for the defense that works for everyone. Once the defense date is confirmed, and with their advisor's approval, students must send their proposal document to the Committee **at least one week** prior to the defense. This one-week requirement is a minimum; students should ensure their committee has ample time to thoroughly review the proposal document before the defense.

² The preceding membership requirements supersede what may appear on committee appointment form.

A public announcement of the dissertation proposal defense must be sent out by CEE Student Services Coordinator *at least one week* before the defense. To facilitate this, students must fill out the announcement template available in Appendix I and send it to the CEE Student Services Coordinator *at least two weeks* prior to the defense. The CEE Student Services Coordinator will confirm that all requirements have been met by the student for scheduling a PhD proposal defense and will provide the committee chair with the relevant forms ([Dissertation Proposal and Admission to Candidacy](#) and [Dissertation Proposal Assessment](#)) for the proposal defense.

5.6.3. Dissertation Proposal Structure

The dissertation proposal consists of a written document and an oral presentation. The written document should discuss the proposed work, contributions, preliminary results to date, and research timeline in a concise manner. Proposal documents should not exceed 15 single-spaced pages (or 30 double-spaced pages) excluding title page, abstract, table of contents, references, appendices, and supplementary materials. There is no formatting requirement for the proposal document, but the students are highly encouraged to consult with their PhD advisor.

All members of the committee evaluate the proposal and generate a preliminary assessment of the candidate's achievement of the following research skills: a) identifying relevant problems of interest, b) interpreting existing literature, c) generating hypotheses, d) collecting data (via experiment, observation, modeling and/or simulation), e) interpreting results and drawing conclusions, f) communicating results (in oral and written formats), g) answering questions and defending their work, and h) commenting/critiquing on the work of others.

The oral presentation part of the dissertation proposal (or proposal defense) is advertised within CEE and Engineering School. All interested parties are welcome to attend. The candidate gives a brief overview of their proposed dissertation research (approximately 35 minutes), then takes questions from the audience followed by questions from their committee. The total duration of the dissertation proposal defense is at the discretion of the student's committee, but students should reserve at least a 2-hour block.

5.6.4. Dissertation Proposal Outcome

The focus of the dissertation proposal is to foster student growth, rather than simply determining pass or fail. After the proposal defense, the committee deliberates privately to decide on the outcome. As part of this process, the committee also reviews the student's transcript to recommend any additional coursework or relevant training, if necessary.

The committee chair will then communicate the committee's decision to the student and their advisor. In some cases, the committee may request revisions to the proposal or ask for further clarification on specific questions before making a final decision.

If a candidate does not pass the defense, they must retake it within six months. The committee chair is responsible for determining an appropriate format and timeline for the second defense. Students who fail to pass on their second attempt will be dismissed from the PhD program.

The committee chair is responsible for filling out the required forms and sending them to the CEE Student Services Coordinator.

5.7. PhD Dissertation Defense

Dissertation defense is the culminating step of the PhD degree. The purpose of PhD Dissertation Defense is to confirm that the completed research constitutes a meaningful contribution to the body of knowledge in the field of Civil and Environmental Engineering and to demonstrate competence in the field of the dissertation research and to ensure that the written quality of the final document is adequate to highlight the value of the work.

5.7.1. Committee Composition Requirements for PhD Dissertation Defense

The committee requirements for PhD dissertation defense are similar to the requirements for the PhD dissertation proposal. The committee must include **at least five members**, and meet the following requirements:

- A minimum of four UVA faculty members.
- A minimum of three CEE faculty members.
- A minimum of one outside member:
 - An outside member (or outside the student's home department member) is defined as a current UVA faculty member whose primary appointment is outside the student's home department.
- A UVA faculty member who has a courtesy appointment with CEE does not count as a CEE faculty member but can count as an outside member.
- Research Scientists from VTRC may be listed as committee members but do not count as CEE faculty or UVA faculty.
- Committee members from outside the UVA (i.e., external members) are allowed to serve as a voting member on the committee. Emeritus faculty are considered outside UVA for the purpose of committees. A CV or biography is required for all committee members who are not UVA faculty and should be submitted to the Engineering Graduate Registrar with the form appointing the committee. The CV or biography should include the highest degree attained, the year and institution, and any relevant experience or research which would enable that member to provide expertise to the student and committee.

Students are referred to "CEE Committee Requirements and Guidelines" document for additional details on committee structure and eligible faculty members.

Students must request the appointment of the committee by completing the [Appointment of Final Examination Committee Form³](#) and sending it to the CEE Student Services Coordinator. After the department approval, the form will be submitted by the CEE Student Services Coordinator to the Engineering School Graduate Registrar for approval. The committee must be approved **at least two weeks** before the date of the dissertation defense. It is the student's responsibility to make sure the form is submitted to the CEE Student Services Coordinator early enough to allow sufficient time for processing and approval. Failure to submit the form on time may result in delays or rescheduling of the defense.

5.7.2. PhD Dissertation Document

The PhD dissertation document is a unique and individualized document that represents the student's own scientific and engineering interpretation/thinking about the research and design accomplishments they have made during their time in the CEE PhD program. The PhD student should take tremendous pride in their accomplishments and embrace their individuality as a scientist and engineer when assembling and summarizing the body of work from their PhD experience.

While there are no specific formatting requirements for the dissertation document, it should include: title page, table of contents, list of figures, list of tables, abstract, and references list. Students are highly encouraged to work with their PhD advisor and committee to prepare a satisfactory document. Students are also encouraged to get examples from their advisor, their peers, or [Libra website](#) as references or templates for formatting.

³ The preceding membership requirements supersede what may appear on committee appointment form.

5.7.3. Timing

PhD students are eligible to defend their dissertation once they have completed all other requirements of the PhD program. There must be a minimum of two full semesters (counting summer or unenrolled semesters) between a student's successful completion of the dissertation proposal and their dissertation defense (or final examination). It is the student's responsibility to check the Academic Requirements Report in SIS.

With the approval of their PhD advisor, the student must coordinate with their committee members and schedule a date for the PhD dissertation defense. Students must pay attention to the defense deadlines set and announced by the Engineering School Graduate Registrar at the start of each semester. All members of the committee must be available either virtually (online) or in person, at the date and time of the scheduled defense.

The candidate should circulate the dissertation document to the committee *no later than one week before the dissertation defense date*. Note that the one-week requirement should be considered as the minimum. It is imperative that the candidate gives their committee sufficient time to review the dissertation ahead of the defense.

The first part of the dissertation defense (approximately 40 minutes) is an oral presentation of the dissertation research followed by questions from the public. This is followed by questions from the committee. The total duration of the dissertation defense is at the discretion of the student's committee, but students should reserve at least a 2-hour block.

A public announcement of the PhD dissertation defense must be sent out by CEE Student Services Coordinator **at least one week** before the defense. To facilitate this, students must fill out the announcement template available in Appendix I and send it to the CEE Student Services Coordinator **at least two weeks** prior to the defense. The CEE Student Services Coordinator will also provide the committee chair with the relevant forms ([Report on Final Examination](#) and [Thesis and Dissertation Assessment](#)) before the defense.

5.7.4. Exam Outcome

After the dissertation defense, the committee deliberates privately to decide on the outcome. The committee chair will then communicate the committee's decision to the student and their advisor. In some cases, the committee may request revisions to the dissertation or ask for further clarification on specific questions before making a final decision. The committee chair is responsible for establishing a timeline for the student to submit the revised dissertation.

While exceedingly rare, it is possible for the student to fail the dissertation defense. The possibility for re-examination is determined by the committee. The best way for the student to avoid failure is to have clear and frequent communication with their PhD advisor and committee about everyone's expectations and whether or not expectations have been met; that way, there should be no surprises when it comes to the dissertation defense.

5.7.5. Publication of PhD Dissertation Document

After successful completion of the dissertation defense, PhD students must submit their approved dissertation, along with the [Thesis/Dissertation Cover and Approval Pages Form](#) to Libra, the online archive of UVA, by the deadline that is announced by the Engineering School Graduate Registrar at the start of each semester. Students should discuss any copyright/embargo issues with their advisors prior to the upload. For more information on Libra and instruction of how to upload, please visit the [Office of Graduate Programs website](#) and the [Libra's Electronic Thesis/Dissertation \(ETD\) Submission Checklist](#).

5.8. First Destination Survey

After successful completion of the PhD dissertation defense and upload to Libra, all PhD students must complete the First Destination survey informing the school whether employed, continuing education, military service, volunteering, or still seeking employment.

5.9. PhD Survey of Earned Doctorates

After successful completion of the PhD dissertation defense, all PhD students must complete the [Survey of Earned Doctorates](#) and submit a copy of the Certificate of Completion via email to the Engineering Graduate Registrar's Office.

5.10. Seminar Series

CEE PhD students are required to enroll in CE 7001 (with zero credit hours), attend the seminars, and receive a Satisfactory grade in their first year of the program.

CEE Seminar Series is a weekly event during the academic year that brings together CEE faculty and students to learn about new research and practices in different areas of civil and environmental engineering. Research presentations are given by Distinguished Speakers from within the university community as well as nationally and internationally recognized researchers and engineers in academia and industry. The weekly seminars also include presentations from CEE graduate students as well as presentations geared towards professional development.

5.11. Annual Academic Progress Review for Doctoral Students

In CEE, we are committed to maintaining strong and nurturing graduate programs. Conducting annual reviews of doctoral students' academic progress is a major step towards this goal. An annual review of academic progress will have several benefits. An annual review of academic progress helps the student progress successfully through the graduate program by allowing timely diagnosis of deficiencies, clarification of expectations for academic performance, and identification of opportunities for improvement. An annual review will also help the department see our programs from the perspectives of our doctoral students and can be used to evaluate the program's quality and assess its progress towards its goals and missions. To this end, all doctoral students—except those in their first semester of the program—are required to participate in the annual review process, which takes place in the middle of the fall semester each year.

5.12. Conference Travel Grants

In CEE, we are committed to supporting the professional development of our doctoral students by facilitating opportunities for them to present their research and engage with the broader scientific community. To this end, the Department will provide up to \$1,500, one time, for doctoral students to attend a scientific conference to enhance the students' professional growth, increase the visibility of their research, and foster networking opportunities within their academic and professional communities. This grant is contingent upon a one-to-one match by the student's advisor. Additional information is provided in Appendix II.

5.13. Changing from the PhD Program to the MS Program

At any point in time with the permission of the student's PhD advisor(s), a student may request to change from the PhD Program to the MS Program. If a student is considering this path, they should talk with their PhD advisor(s) and the Graduate Program Director to understand the timing, financial, and research-related implications of making this change. Making the official switch to the MS Program from the PhD Program also requires the student to submit the [Request Program or Plan Change Form](#).

Appendix I: Announcement Template

Title: [PhD Dissertation Defense, MS Thesis Defense, or Dissertation Proposal Defense:
Student's Name – Date and Time]

All Invited

Committee Members:

- Name, Department/Affiliation (Chair)
- Name, Department/Affiliation (Advisor)
- Name, Department/Affiliation (Co-advisor, if applicable)
- Name, Department/Affiliation (if needed)
- Name, Department/Affiliation (if needed)
- Name, Department/Affiliation (if needed)

Date: [To be filled by the student]

Time: [To be filled by the student]

Location: [To be filled by the student, if there is an online option, please add the Zoom link]

Title:

[To be filled by the student]

Abstract:

[To be filled by the student]

Appendix II: Conference Travel Grants for Doctoral Students

The Department of Civil and Environmental Engineering is committed to supporting the professional development of its doctoral students by facilitating opportunities for them to present their research and engage with the broader scientific community. To this end, the Department will provide up to \$1,500, one time, for doctoral students to attend a scientific conference to enhance the students' professional growth, increase the visibility of their research, and foster networking opportunities within their academic and professional communities. This grant is contingent upon a one-to-one match by the student's advisor.

Eligibility and Requirements:

- **Applicant Eligibility:** The applicant must be a current doctoral student who will be presenting their research (oral presentation, poster presentation, flash talk, etc.) at a conference and has not previously received a conference travel grant from the department.
- **Conference Eligibility:** The conference must be a recognized scientific meeting relevant to the student's field of study.
- **Matching Funds:** The student's advisor must provide a matching amount equal to the grant requested, up to \$1,500.

Application Process

Applicants must complete an [application form](#) and provide a letter of support from their advisor confirming the matching funds. The application form will be a Qualtrics Survey and collect the following information:

- Information about the student (name, email, year entered the program)
- Information about the conference (name, organization, location, link)
- A brief description of the conference and its relevance to student's research
- Information about the presentation (format, co-authors, title, link)
- Estimate of total expenses

Approval and Reimbursement:

Five days after the application is received, the Director of Graduate Studies will send the decision (approve/deny) to the student and their advisor. If approved, the student will receive instructions on how to submit an expense report. Funds will be reimbursed upon submission of an expense report after attending the conference following the guidelines provided.

Additional Requirements for Social Media and Communication Materials:

After attending the conference and prior to submitting the reimbursement report, students who have received the conference travel grant must provide the following information to the CEE communication team:

- Student's Name; Advisor's Name
- Conference Name, Location, Date
- Presentation Title
- Presentation Type
- Student's reflection on one thing that the student learned/valued from attending the conference
- 1-2 photos from the conference