

DEPARTMENT OF
CIVIL AND ENVIRONMENTAL ENGINEERING

GRADUATE HANDBOOK
2023 – 2024



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.

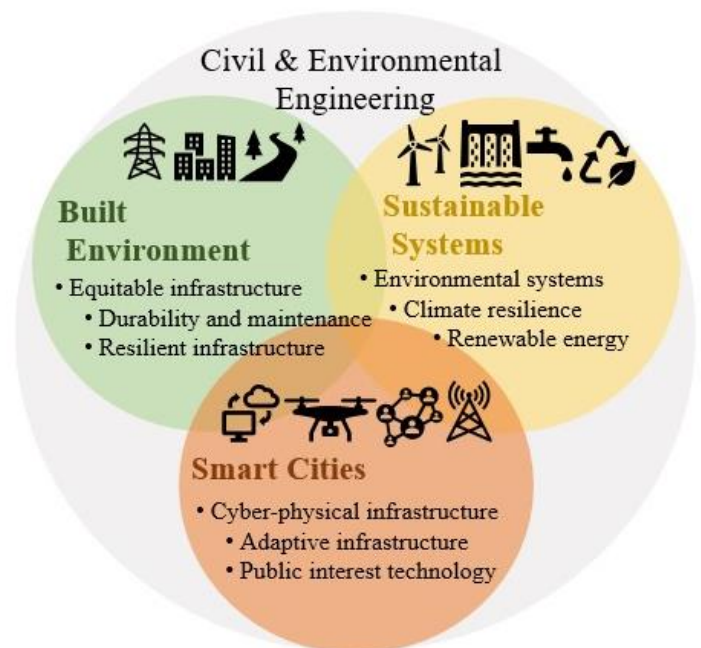
CEE at UVA offers several graduate degrees for advanced study in civil and environmental engineering, including *Master of Engineering* (ME) in Civil Engineering, *Master of Science* (MS) in Civil Engineering, and *Doctor of Philosophy* (PhD) in Civil Engineering. The ME, MS, and PhD degrees form the 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. Educational Programs, Policies, and Requirements

2.1. General Academic Rules and Requirements

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

2.2. Ombuds

Students are encouraged to express their comments and concerns regarding their experiences in the graduate program in CEE with the Graduate Program Director.

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.

2.3. 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 §2.5 (for ME), §2.6 (for MS), and §2.7 (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
Graduate Teaching Experience	Not required	Not required	1 semester required ⁽⁴⁾
Qualifying Exam	N/A	N/A	Required
Dissertation Proposal	N/A	N/A	Required: Oral and Written
Final Oral Presentation	N/A	Required: Thesis Defense	Required: Dissertation Defense
Final Written Report	N/A	Required: MS Thesis	Required: 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 §2.6.3 for more information.

⁽³⁾ Refer to §2.7.3 for more information.

⁽⁴⁾ All CEE PhD students are required to serve as a Graduate Teaching Assistant (GTA) for at least one semester as part of the requirement for the degree, regardless of their source of funding for the stipend or fellowship. More information about the Graduate Teaching Experience is provided in §2.7.11

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. 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.

2.5.1. 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.

2.5.2. Program Requirements

A candidate for the ME degree must fulfill the general requirements of the Engineering School and complete 30 credits of graded graduate coursework. 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.

Students in the on-Grounds ME program may register for up to 12 credit hours of courses offered through VEO.

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.

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

2.5.3. 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.

2.5.4. Special Circumstances

- I. 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](#).
- II. 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 §2.5.2 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.

2.5.5. Time Limit

Students with a bachelor's degree in Civil Engineering or a closely related field can complete the ME degree in as little as one year. However, all requirements for the ME degree must be completed within seven years after matriculation to the graduate program.

2.5.6. 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](#).

2.6. 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.

2.6.1. 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.

2.6.2. 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.

2.6.3. Coursework Requirements

The MS degree in Civil Engineering requires a minimum of 24 credits of graded engineering coursework beyond the bachelor's degree, 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). A minimum GPA of 3.0 is required. 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 and approved by the CEE Graduate Program Director. The approved plan of study may be revised if necessary but must be re-submitted for approval.

2.6.4. MS Thesis

Each MS student must satisfactorily present and defend a thesis based on an 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.

2.6.4.1. Thesis Committee

Students are advised to meet with their advisor to discuss who to invite to serve on their MS Thesis Committee. The MS Thesis Committee must consist of at least three UVA faculty members, including at least two CEE faculty members. Note that faculty with a CEE courtesy appointment should be considered as an external to the CEE department. Students must identify a member of the MS Thesis Committee to serve as the Committee Chair. Note that the Committee Chair (who may **not** be the student's faculty advisor) must hold 50% or more of their primary appointment in the CEE Department. Refer to Appendix I 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 Graduate Registrar's Office for approval. While students are encouraged to select their MS Thesis Committee as soon as possible, the form to appoint the MS thesis committee must be submitted to the CEE Student Services Coordinator **at least two weeks** before the date of the defense.

2.6.4.2. MS Thesis Defense Timing

With the approval of their MS Advisor, the student should coordinate with their MS Committee members and schedule a date for their MS Thesis Defense. The defense date must be **at least one week** before the deadline to submit the final paperwork for degree completion to the Engineering Graduate Registrar's Office.

With the approval of their MS Advisor, students should send their thesis document to the Committee **at least one week** before the defense date. Note that the one-week requirement should be considered as the minimum. It is imperative that the student gives their MS Committee sufficient time to review the dissertation ahead of the defense.

Note that 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.

The student should also notify the CEE Student Services Coordinator of the date selected for the MS Thesis Defense **at least two weeks** prior to the defense date. All members of the thesis committee must be available either virtually (online) or in person, at the date and time of the scheduled defense. The public announcement of the defense must be sent out by CEE Student Services Coordinator **at least one week** prior to the defense date.

2.6.4.3. MS Thesis Defense

The MS Thesis Defense is conducted orally and publicly in front of the entire MS 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 MS Committee.

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

Upon successful passage of the MS Thesis Defense, the MS Committee Chair should submit the [Graduate Engineering Thesis & Dissertation Assessment Form](#) together with the [Report on Dissertation or Thesis Final Examination Form](#) to the CEE Student Services Coordinator, who will provide it to the Engineering Graduate Registrar's Office.

To complete their MS, the student must submit their approved final thesis, along with the Thesis/Dissertation Cover, and Approval Pages Form to Libra, the online archive of UVA, by the deadline specified in the academic calendar. 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](#).

2.6.5. 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) and attend the CEE seminars during the 2023–2024 academic year.

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.

2.6.6. Apply for Graduation

MS candidates must apply for graduation in SIS at the beginning of the semester in which they are expected to graduate, with the specific deadline specified in the academic calendar.

2.6.7. Financial Aid

Most admitted MS students receive financial aid. Funding offers take the form of Graduate Research Assistantships (GRAs), Graduate Teaching Assistantships (GTAs), and/or various fellowships. Funded offers also include tuition waiver and health insurance. Some MS students are funded by third-party entities (e.g., their employer, government, military agencies).

2.6.8. Time Limit

All requirements for the MS degree must be completed within five years after matriculation to the graduate program.

2.6.9. 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](#).

2.7. 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.

2.7.1. PhD Advisor

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

2.7.2. 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 Proposal Defense
- PhD Dissertation Defense

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

- GTA: PhD students must serve as a Graduate Teaching Assistant (GTA) for at least one semester.
- Seminar: enrolling in CE 7001 (with zero credit hours) and attending the CEE seminars during the 2023–2024 academic year.
- 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 your PhD 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.

2.7.3. Coursework Requirements and PhD Plan of Study

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 credits of graduate engineering beyond the bachelor's degree is required for all the PhD students in Engineering School at UVA. Students with graduate study at other institutions may apply engineering credits from that study towards their 24 hours, but all CEE PhD students must complete at least six credits of coursework from CEE at UVA. Students who earn an ME or MS degree at UVA enroute to a PhD in CEE may use CEE credits from their master's degree to meet this requirement.

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)

Students must complete the [PhD Plan of Study Form](#) and submit it to the CEE Student Services Coordinator before the student takes their PhD Qualifying Exam. The Plan of Study is for departmental use only. Students should maintain a copy for themselves to access it whenever they convene their committee and/or complete a requirement. Official tracking for Engineering School and CEE requirements is done using the academic requirements report (ARR).

2.7.4. Overall Timeline

In our PhD Program, the student has tremendous ownership over their own destiny and responsibility for progressing toward their graduation. Hence, the PhD student has the responsibility to manage the timing of their progression. 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. All students are required to successfully complete the Proposal Defense *at least one year prior to the Final Dissertation Defense*. However, students are highly encouraged to complete this milestone by the end of year 3 of their program.

2.7.5. PhD Qualifying Exam

The PhD Qualifying Exam (also referred to as the comprehensive exam or PhD exam) is required by the Engineering School for all doctoral engineering students. The PhD Qualifying Exam in CEE consists of two parts, written and oral.

Purpose: 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. 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.

Timing: Students may elect to take the Qualifying Exam as early as completion of the required coursework. All students should take 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 Graduate Program Director.

Committee Composition Requirements for PhD Qualifying Exam: Students should work with their PhD advisor to form a committee for their qualifying exam. The committee will include at least four members, including:

- At least three CEE faculty members.
- Faculty with a CEE courtesy appointment may be a part of the committee but do not count toward the CEE requirement above.
- The Committee Chair (who may **not** be the student's faculty advisor) must hold 50% or more of their primary appointment in the CEE Department.

See Appendix I for details on status of faculty members in the CEE program. Once the committee members are identified, the student requests the appointment of their committee by sending the [Recommendation and Certification of Doctoral Advisory Committee Form¹](#) to the CEE Student Services Coordinator for approval. After approval, the form must be submitted by the CEE Student Services Coordinator to the Graduate Registrar's Office *at least two weeks prior* to the PhD Qualifying Exam.

Structure of the Exam: Early in each term, students will be asked whether they intend to complete their qualifying exam during that term, and if so, who their anticipated committee members are. This will allow faculty members to plan for and coordinate testing of student examinees that term. The timing of the exams that term is at the discretion of the faculty committee members. Once the dates for the oral and written components of the exam 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 four-part brief document. Student examinees should prepare a two-page or less 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.

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 and their Program of

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

Study to the Committee Chair. The 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 up to seven days; however, individual faculty may specify time limits for their own individual questions. 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 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 typically build 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 Chair is responsible for collecting and organizing feedback from the committee and then communicating it to the student after the exam. The Chair is also responsible for filling out the [Report on PhD Exam Form](#) and sending it to the CEE Student Services Coordinator.

Exam Outcome: The outcome of the exam is determined collectively by the PhD 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 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 can retake the examination within six months. If these students do not retake the exam within six months, or do not pass after two attempts, they are dismissed from the PhD program.

2.7.6. PhD Proposal Defense

Purpose: 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.

Committee Composition Requirements for PhD Proposal: The requirements for the composition of the committee for the proposal defense are as follows: a minimum of five total members; a minimum of four UVA faculty; a minimum of three CEE faculty members; and one of

the UVA members (the “external member”) must be from outside CEE. Note that faculty with CEE courtesy appointments should be considered as external members. See Appendix I for details on status of faculty members in the CEE program. The committee composition for the proposal defense needs to be approved by filling out the [Recommendation and Certification of Doctoral Advisory Committee Form²](#) and having the Graduate Program Director’s signature on it prior to scheduling the proposal defense. This will then be forwarded to the Engineering Graduate Registrar’s Office for final approval. *The Engineering School approval must be obtained at least two weeks prior to the proposal defense date.*

Timing: All students are required to successfully complete the Dissertation Proposal *at least one year prior to the Final Dissertation Defense*. However, students are highly encouraged to complete this milestone by the end of year 3 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. Upon selecting a date and location for the oral dissertation proposal defense, the student is then responsible for emailing the CEE Student Services Coordinator their announcement information *at least two weeks prior to defense*. The announcement information should include committee members with the Chair and Advisor identified, the defense date, time, and location, and the title and abstract of the dissertation proposal. The proposal defense will be publicly advertised by the CEE Student Services Coordinator *at least one week before the defense*.

The written proposal document must be submitted to the committee *at least one week in advance of the proposal defense date*. Candidates must also provide their transcripts and PhD Plan of Study to the committee.

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.

Structure of Proposal Defense:

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). The bibliography and any appendices are not included in this page limit. 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 defense part of the dissertation proposal is advertised within the CEE Department 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

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

dissertation proposal defense is at the discretion of the student's committee, but students should reserve at least a 2-hour block.

Proposal Defense Outcome: After the oral defense, the committee deliberates privately and decides whether the candidate has passed. The committee also reviews the student's transcript and the PhD Plan of Study to recommend additional coursework or other relevant training if necessary. In this way, the emphasis of the dissertation proposal is on supporting student growth, rather than just deciding who passes/fails. Each committee member is responsible for completing a research skills assessment and submitting it to the Committee Chair. The Chair collates the feedback, submits an aggregated assessment form to the CEE Student Services Coordinator (who sends it to the Engineering Graduate Registrar's Office) and circulates the feedback to the candidate and their PhD advisor within two weeks of the proposal.

Candidates who fail the defense must take it again within six months. The Committee Chair takes the lead in identifying an appropriate format and timeline for the second-chance defense. Students who do not pass on their second attempt are dismissed from the PhD program.

2.7.7. PhD Dissertation Defense

The dissertation defense is the culminating step of the PhD process.

Purpose: 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.

Committee Composition Requirements for PhD Dissertation: The requirements for the composition of the committee for the PhD dissertation defense (i.e., PhD Final Examination Committee) are as follows: a minimum of five total members; a minimum of four UVA faculty; a minimum of three CEE faculty members; and one of the UVA members (the "external member") must be from outside CEE. Note that faculty with CEE courtesy appointments should be considered as external members. See Appendix I for details on status of faculty members in the CEE program.

The PhD Final Examination Committee composition needs to be approved by filling out the [Appointment of Final Examination Committee Form³](#) and having the Graduate Program Director's signature on it prior to scheduling the defense. This will then be forwarded to the Engineering Graduate Registrar's Office for final approval. The Engineering School approval must be obtained *at least two weeks prior to the final dissertation defense date.*

PhD Dissertation Document: The PhD Dissertation 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.

Timing: PhD students are eligible to defend their dissertation once they have completed all other requirements of the PhD program, including the paper presentation and publication and the Graduate Teaching Experience requirements. It is the student's responsibility to check the Academic Requirements Report in SIS.

The student is responsible for working with their Advisor and their committee to schedule a date for the dissertation defense. *All members of the committee must be available either virtually (online) or in person, at the date and time of the scheduled defense.* Therefore, students must start early to make sure that they can find a time that works for all members of their committee. While scheduling the final defense date, students need to carefully consider the Engineering School timelines and deadlines. The defense must be *at least one week before the Engineering School deadline for submitting final paperwork and dissertation completion.* This will allow the student some time to revise the dissertation document based on their committee's feedback and revision requests, as necessary.

Upon selecting a date and location for the final dissertation defense, the student is then responsible for emailing the CEE Student Services Coordinator their announcement information *at least two weeks prior to defense.* The announcement information should include committee members with the Chair and Advisor identified, the defense date, time, and location, and the title and abstract of their dissertation. The CEE Student Services Coordinator will confirm the PhD student has met all requirements for scheduling the dissertation defense and then provide the Committee Chair with the relevant forms ([Report on Final Examination](#) and [Thesis and Dissertation Assessment](#)) for the final defense.

The final dissertation defense will be publicly advertised by the CEE Student Services Coordinator *at least one week before the defense.*

The candidate should circulate the dissertation document to the committee *no later than one week before the final 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.

Format of the Oral Defense: Final defenses are advertised within the CEE Department and Engineering School. All interested parties are welcome to attend. The first part of the defense (approximately 40minutes) is an oral presentation of the dissertation research followed by questions from the public. This is followed by a one- to two-hour oral defense question and answer period with the committee. The total duration of the final dissertation defense is at the discretion of the student's committee, but students should reserve at least a 2-hour block.

Exam Outcome: After the oral defense, the committee deliberates privately and decides whether the candidate has passed, and the Chair will return the completed forms back to the CEE Student Services Coordinator. It is possible that the Committee asks for revisions or changes after the defense before they decide to pass the student. In that case, the student needs to work on the requested revisions and submit the revised dissertation document to the Committee Chair for approval.

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; so there should be no surprises when it comes to the dissertation defense.

2.7.8. Publication of PhD Dissertation

After successful completion of the final defense, the candidate must submit the dissertation via Libra. Paper-bound copies are no longer required. Students should discuss any copyright/embargo issues with their mentors and chairs prior to the upload. If students and advisors wish to embargo their Dissertation, please read the important information below. For more information on LIBRA and instruction of how to upload, please visit: <https://www.library.virginia.edu/libra/etds/etds-checklist>. The dissertation will be published electronically online by the UVA Library free of charge.

2.7.9. Exit Survey

Following the successful completion of a PhD Dissertation Defense, students are asked to complete the [Survey of Earned Doctorates](#).

2.7.10. Seminar Series

As an essential component of the graduate program in CEE, PhD students are required to enroll in CE 7001 (with zero credit hours) and attend the CEE seminars during the 2023–2024 academic year.

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.

2.7.11. Graduate Teaching Experience

All PhD students must serve as a Graduate Teaching Assistant (GTA) for at least one semester as part of the degree requirements. GTAs will enroll for three credits (Satisfactory/Unsatisfactory basis) of CE 8001 in a section corresponding to their supervising instructor.

A GTA assignment will not count toward the teaching requirement if the student does not receive a Satisfactory (S) grade. Receipt of one or more Unsatisfactory(U) grades for graduate instruction may endanger a student's eligibility to serve as a GTA in future semesters.

All GTAs whose first language is one other than English are required to take the oral section of the UVELPE Test. A score of at least 55 is required for permission to begin teaching without completion of appropriate oral language training. Please refer to §2.4 and [CAELC website](#) for more information about the UVELPE test as well as the testing times and registration, please visit.

In special circumstances, a PhD student may petition their committee to substitute a substantive alternative professional development and/or specialized training experience (e.g., externship) for the GTA requirement. This determination is at the discretion of the committee and approval of the Graduate Program Director.

2.7.12. Apply for Graduation

PhD candidates must apply for graduation in SIS at the beginning of the semester in which they're expected to graduate.

2.7.13. Time Limit

All requirements for the PhD degree must be completed within seven years after matriculation to the graduate program.

2.7.14. Financial Aid

Most admitted PhD students receive financial aid. Funding offers take the form of GRAs, GTAs and/or various fellowships. Funded offers also include tuition waiver and health insurance. Some PhD students are funded by third-party entities (e.g., their employer, government, military agencies).

2.7.15. 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](#).

2.7.16. 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](#).

Appendix I: Eligibility for serving as MS/PhD Advisor and on MS/ PhD Committees

Eligible to serve on MS/PhD committees:

- Academic General Faculty (AGF: research, teaching, practice; all ranks with a PhD)
- Tenure Track Faculty (all ranks)
- Research Scientists and Lecturers (all levels with a PhD)
- Special cases not listed above must be approved by the Graduate Program Director.

Eligible to be a MS/PhD Advisor:

- Any CEE faculty excluding Professional Research Staff (Research Scientists, Senior Scientists, Principal Scientists, etc.), Lecturers, and Visiting Faculty
- Any faculty with a CEE courtesy appointment
- Special cases not listed above must be approved by the Graduate Program Director.

List of faculty members with CEE courtesy appointment

- Roseanne M. Ford
- Mami Taniuchi

List of CEE faculty with less than 50% appointment in CEE

- Leidy Klotz