Graduate Studies Handbook

University of Notre Dame

Department of Civil & Environmental Engineering
& Earth Sciences

2026-2027 Academic Year



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1. Introduction

This handbook describes the policies relating to graduate studies in the Department of Civil and Environmental Engineering and Earth Sciences (CEEES) at the University of Notre Dame. It sets forth the academic requirements and milestones toward completion of the doctoral (PhD) and research-based master's degrees (MS), and summarizes information most students will need on a frequent basis. It supplements, but does not replace, the Graduate School Bulletin of Information. All students are required to obtain a copy of the *Bulletin* and become familiar with its requirements and policies. It can be found online at: *https://graduateschool.nd.edu/assets/281218/gs_bulletin_most_recent.pdf*. Except where departmental requirements are stricter, should a contradiction be found between this guide and the Graduate School's Bulletin, *the Bulletin takes precedence.*

The student's primary contact for all graduate program matters is the faculty member who serves as the student's research advisor. For issues about policies and procedures or grievances, the student should reach out to the Director of Graduate Studies (DGS); for issues regarding paperwork, the student's academic record, or other administrative questions, the student should reach out to the Program Administrator. Important contacts include:

Department Chair: Diogo Bolster (dbolster@nd.edu)
Associate Department Chair: David Richter (drichte2@nd.edu)
Director of Graduate Studies (DGS): Andrew Kennedy (akenned4@nd.edu)
Academic Program Administrator (APA): Valerie McCance (vmccance@nd.edu)

2. Requirements of the Master's Programs

CEEES offers three research-based MS programs: Master of Science in Civil Engineering (MSCE), Master of Science in Earth Science (MSErSc), and Master of Science in Environmental Engineering (MSEnvE). Students must fulfill the following requirements within five (5) years of matriculation. Failure to complete any of the Graduate School or Departmental requirements within the prescribed period results in forfeiture of degree eligibility.

a) **Coursework.** Students must register for and complete at least 30 credit hours with a cumulative GPA greater than 3.0. The credits may include any combination of formal courses, directed studies, and research, but must include at least 16 credits of technical courses at the 60000 level or above. Thus, research credits may total from 6 to 14 credit hours. With the approval of the DGS, courses numbered 40000 through 49999 and 50000 through 59999 may be taken to satisfy up to six (6) hours of graduate credit requirements. Students are expected to complete all required coursework within three semesters of matriculation.

b) **Thesis Proposal.** The thesis proposal is a 15-page document, not including bibliography, that outlines the literature pertaining to the student's research area, the hypothesis (hypotheses) to be addressed in the research, the techniques to be employed, and a projection of the time requirements to complete the research. The master's thesis proposal should be approved by the student's advisor and sent to the DGS prior to the end of the second semester of study. In consultation with the student's advisor, the DGS will invite one (1) teaching or research faculty member to review the thesis proposal and provide any recommendations to the student.

c) **Thesis and defense.** The thesis should follow the formatting guidelines and timelines on the Graduate School's website. The thesis advisor indicates his or her approval of the thesis and its readiness for the readers by signing the thesis. The candidate must submit an electronic version of the thesis to the DGS for approval at least three (3) weeks in advance of the defense date and must receive approval for the thesis and committee members. Approval by the DGS is also required for the committee, and this needs to be obtained before the student invites the committee members. The request to the DGS should be accompanied by a rationale for including the specific members, with additional justification for any

member external to Notre Dame (justify the need to have an external member). Once all approvals have been received, the candidate is responsible for setting a date and time for the defense and must work with the Academic Program Administrator to ensure the necessary paperwork is initiated.

The open part of the defense consists of a ~ 35-minute formal technical presentation of key aspects of the candidate's thesis followed by audience Q&A. During the subsequent closed part of the defense, the committee members will examine the candidate in depth based on the presentation, the thesis or paper, and the background needed for the research. The committee members vote pass/fail on the candidate's ability to respond to questioning and on the student's mastery of the subject. The exam is passed if the committee vote, by majority, is "pass". See here for additional details and guidelines

d) Admission to Candidacy. After a student has successfully defended the thesis, they may be admitted to Master's Candidacy. The required form will be processed by the Academic Program Administrator and submitted to the Graduate School.

3. Requirements of the Ph.D. Program

Students must fulfill the following requirements within eight (8) years from the time of matriculation in order to obtain their PhD. Failure to complete any of the Graduate School or Departmental requirements within the prescribed period results in forfeiture of degree eligibility.

a) Coursework. Students must register for and complete at least 72 credit hours with a cumulative GPA greater than 3.0. The credits may include any combination of formal courses, directed studies, and research, but must include at least 18 credits of technical courses at the 60000 level or above. With the approval of the DGS, courses numbered 40000 through 49999 and 50000 through 59999 may be taken to satisfy up to six (6) hours of graduate credit requirements. Students who have completed an MS degree may be able to transfer up to 24 credits towards their PhD. Interested students can contact the Academic Program Administrator to confirm eligibility and to start the process. Students are expected to complete all required coursework within three semesters of matriculation.

b) Research Ethics Requirement. All PhD students must receive at least three hours of Research Ethics training in order to graduate. In addition, according to federal policy, students funded by, or working on projects funded by, federal research sponsors such as the NSF and the NIH must complete eight hours of in-person research ethics training. More information and workshop details can be found here: https://graduateschool.nd.edu/graduate-training/ethics/research-ethics-requirement/.

c) Qualifying exam (QE). The purpose of the Qualifying Examination (QE) is to evaluate a student's ability and readiness to conduct research. It consists of a literature review and requires two (2) components: (1) a written document no longer than 10 pages in length (single space with at least 11 pt font) and (2) an oral examination before a committee of Notre Dame faculty. The oral exam is a closed presentation (30 min or less) by the student on the content of their literature review followed by questions from the committee (total exam time not to exceed two hours). Questions posed to the student by the committee will focus on the student's ability to meet the following criteria:(1) identify, review and synthesize relevant literature; (2) engage fundamental concepts related to that literature based on their preparation; (3) critique that literature, and perhaps identify areas where further research is needed.

The exam has a committee of up to four (4), but not less than three (3), voting members chosen from the teaching and research faculty of the University and includes the dissertation advisor plus three (3) additional faculty members.. Students must complete the qualifying exam by the end of the fourth (4th) semester. Students eligible to take the QE should contact the Academic Program Administrator at the beginning of the third (3rd) semester to begin the process and to ensure both the Graduate School and Department requirements are met. Students must have a GPA of 3.0 to be eligible.

By the end of their 3rd semester, the student will pose a broader topical area of study and assemble a collection of journal papers in that area, in consultation with their advisor. The QE committee will ensure the selected papers represent a robust sampling of the literature in the student's topical area and would

be a suitable basis for the QE. The committee may provide additional suggestions for papers that need to be included in the literature review based on relevance, importance and recency criteria.The topical area and committee membership will need to be approved by the DGS. Students will need to seek approval at least two months before the exam. The request needs to be accompanied with a short written justification of how each committee member fits the suggested topical area.

The result of the exam will be “pass”, “deficient” or “transfer to a terminal MS degree”. At least three members of the committee need to recommend “pass” for the overall recommendation to be “pass”. If the original recommendation is “deficient” the committee will provide additional remedies (including potentially retaking the exam). If the specified remedies are completed to the satisfaction of the QE committee, the deficient reverts to a pass. If not, the student will transfer to a terminal MS degree. If the recommendation ends up being “Transfer to a terminal MS degree”, the student is transferred to the MS program and becomes bound by that program’s expectations. See here for additional details and guidelines

d) **Research Proposal and Oral Candidacy Exam (OCE).** The research proposal and OCE must be attempted no later than the end of the sixth (6th) semester. The research proposal is a 15-page document, not including bibliography, which outlines the literature pertaining to the student’s research area, the hypothesis (hypotheses) to be addressed in the research, the techniques to be employed, and a projection of the time requirements to complete the research. A finalized version of the research proposal must be sent to the DGS for approval at least three (**3**) weeks prior to the intended OCE date.

The OCE exam has a committee of at least four (4) voting members, with at least two chosen from the teaching and research faculty of the Department. It includes the dissertation advisor or co-advisors plus additional faculty members. The committee should include at least three faculty members that are not considered advisor or co-advisor. The DGS in consultation with the graduate studies committee will need to approve the OCE exam committee. Students eligible to take the OCE should contact the Academic Program Administrator a minimum of eight (8) weeks prior to begin the process and to ensure both the Graduate School and Department requirements are met and the necessary paperwork is completed.

The names of the committee members should be communicated to the DGS, at least six weeks prior to the exam. This communication should include the research title, a short abstract and a justification of how each proposed member fits the research discussed in the abstract. If any of the committee members are external to the University, provide an additional explanation for the added value of including this member.

The OCE exam will test the candidate's preparation for research in the chosen subject area, the quality of the proposed study plan, the ability of the student to relate course work and independent study to the research area, and the quality of the preliminary research performed. It is a closed event during which the student delivers a ~ 40 minute formal technical research presentation. The committee members will examine the candidate in depth based on the presentation, the research proposal, and the background needed for the research. The committee members vote pass/fail on the candidate's ability to respond to questioning and on the student's mastery of the subject. The exam is passed if the committee vote, by majority, is "pass". In case of failure, the department chair, on the recommendation of a majority of the examiners, may authorize a retake of the examination. An authorization for retake must be approved by the Graduate School. A second failure results in forfeiture of degree eligibility and is recorded on the candidate’s permanent record. See here for additional details and guidelines

e) **Admission to Candidacy.** After a student has successfully passed the OCE, they may be admitted to Doctoral Candidacy. The required form will be processed by the Academic Program Administrator and submitted to the Graduate School.

f) **Dissertation and defense.** The dissertation should follow the formatting guidelines and timelines on the Graduate School's website. The same committee membership restrictions as for the OCE apply here.

Typically the committee will be the same, though modifications are allowed. The DGS in consultation with the graduate studies committee will need to approve the defence committee. The names of the committee members should be communicated to the DGS, at least four weeks prior to the exam with an explanation of any changes made compared to the OCE committee. If a new committee member has been added that is external to the University, an additional explanation for the added value of including this member needs to be provided.

The dissertation advisor indicates his or her approval of the dissertation and its readiness for the readers by signing the dissertation. The candidate must submit an electronic version of the dissertation to the DGS for approval at least three (3) weeks in advance of the defense date.
Students who want to schedule their defense should contact the Academic Program Administrator a minimum of six (6) weeks prior to begin the process and to ensure both the Graduate School and Department requirements are met and the necessary paperwork is completed. See here for additional details and guidelines.

4. Award of Master's degree to a doctoral student

A doctoral student may receive the Master of Science degree without completing a master's thesis if the student has completed all three of the following:

- Completed the course requirement for the master's degree,
- Passed the university candidacy examination for the doctorate, and
- Has been first or second author on a research manuscript accepted for publication or published in a refereed technical/scientific journal. The publication must be based on work performed while the student has been a graduate degree candidate at Notre Dame but cannot be included in the student's doctoral dissertation.

The candidate will be required to present his or her research paper in a format similar to the MS thesis defense and subject to the same standards. Upon sustaining this exam, a master's degree will be awarded. In the event of failure, the student will forfeit eligibility for a master's degree without a thesis. This procedure must be completed at least one month prior to the defense of dissertation. The student should contact the Academic Program Administrator to begin the process. (See here for guidelines.)

5. Graduate student rights and responsibilities

Registration. During the academic year (August-May), students must register for a minimum of 9 credit hours and no more than 15 credit hours at the 60000 and 70000-level courses, each semester. During the summer session (May-August), all students are required to enroll and register for zero credit hour Independent Summer Research course, CE 67890.

Students who plan to graduate during the summer should also register for zero credits of research under the department chair. If a student wishes to take a course for credit offered only during the summer session, they will need to apply for a tuition scholarship before the first day of classes. Please contact the APA for any registration questions and information on summer tuition scholarship requirements and courses available.

Enrollment (ND Roll Call). In addition to registering for classes, all graduate students must complete ND Roll Call each spring, fall, and summer to maintain student status. If you fail to enroll during the semester, you may have to apply for re-admission. The only exception is for officially approved leaves of absence, which are described in the *Bulletin*.

Teaching Assistant (TA) requirements. The ability to communicate effectively is considered to be an essential skill of a graduate degree holder from CEEES. To facilitate the development of communication skills, all PhD and

research-based MS students are required to participate in the Department's educational mission by serving as teaching assistants (TA). As a TA, the student may conduct labs, grade homework or exams, help develop new learning activities, or hold office hours to aid students.

The total number of TA hours each student needs to serve depends on the funding each student is provided through the graduate school and this is coordinated between the DGS and their advisor. The typical TA requirement will be 28 TA hours, and the minimum is 8 TA hours. The TA obligation is fulfilled in terms of 4- or 8-hr per week assignments each semester as decided by the DGS based on the departmental needs (and coordinating with the student's advisor). To support in preparing for TA duties, all incoming students are required to attend a new TA Orientation session offered each year by the Kaneb Center. Students who receive TA assignments are expected to be available for the week prior to the start of classes through grade submission. Exceptions to this must be coordinated directly with the instructor of the course for which the student is serving as a TA as well as the student's research advisor.

Graduate Student Progress Report
Each student's progress toward their degree is reviewed annually by the DGS and shared with the advisor. Continued financial support, both stipend and tuition, is dependent upon successful performance in research, course work, and TA duties, as well as the availability of funds.

The review process consists of the following steps:
● The student fills out the Progress Report Form
● The student discusses their progress with their advisor; any issues are identified and addressed.
● The DGS reviews the student's progress and if there are concerns, remedial action will be taken, in consultation with the advisor.

Funding. Research-based students in the department receive a minimum stipend of at least $36,578 per year for MS students and $42,435 per year for PhD students. This award is for full-time, degree-seeking students and requires the student to successfully perform in coursework and to participate in research and teaching. After the first year, the normal practice is to support students entirely on research grants. These provide full tuition and a similar stipend. Funding is contingent on maintaining full-time graduate student status in the department, pursuing a research-based degree option, and making satisfactory progress towards the degree. Funding ceases after the eighth (8) year for doctoral students and after the fifth (5) year for research-based master's students.

Vacation and Time Off. Students are allowed at least two weeks' paid vacation in addition to the following University holidays:

- the Wednesday before Thanksgiving, Thanksgiving Day, and the following Friday
- Christmas Eve through New Year's Day
- Martin Luther King Jr. Day
- Good Friday and Easter Monday
- Memorial Day
- Independence Day

Vacation plans must be approved by a student's advisor. Any extra vacation time during periods in which the student is receiving financial support must also be approved by the student's advisor.

Religious Holidays. As a university rooted in the Catholic religious tradition, and valuing the dignity and faith of every human being, we support the ability of every student to express and celebrate their religious traditions. This includes observing major religious holidays outside those already recognized by the university (Christmas and Easter). The standard list of major world religious holidays maintained by Campus Ministry can be found here, which is not exhaustive. Should a student wish to ask for time away for a holiday not recognized by the university, it is recommended that graduate students have a conversation well in advance of the observed date with their advisor/PI.

Health Insurance. Health insurance is required of all international and full-time students. Research-based graduate students who are receiving a stipend are eligible for the health insurance subsidy, which covers the annual cost of the insurance premium for the student for the year. This will be applied annually, assuming the student is in good academic standing. Doctoral students must be in their first eight years of study to be eligible for a health subsidy. Masters' students must be in their first five years of study to be eligible for a health subsidy. Students in a Graduate School degree program who are full-time and fully-funded receive a subsidy that pays 100% of the annual health insurance premium. As of fall 2024, they will also receive a subsidy that covers 100% of the cost of the health insurance premium for their legal dependents. The University Counseling Center, located in the University Health Center, 631-7336, offers professional services to all graduate students and their families. Additional services are described in detail in the *Bulletin* and online at: https://uhs.nd.edu/insurance-billing/insurance-plans-rates/

Departmental Resolution Process. Conflicts should be resolved at the lowest possible level (i.e., within the department). Appeals of decisions related to academic matters, grievances of course grades or conduct, conflicts between students and advisors, or other issues that affect a student's degree progress will be addressed by the DGS. Students wishing to file a formal grievance or appeal should do so in writing to the DGS or to the Department Chair. The student should indicate the nature of the problem, the date(s) the problem occurred, the grounds upon which the appeal is based, background information that the student considers important, and the relief requested. The matter will be considered by the DGS and Department Chair and acted on in no more than 15 working days. If the student feels the resolution is inadequate, they may appeal the decision to the Graduate School by following the formal procedures described in the *Bulletin*.

Additional support for students comes in the form of the Graduate School Ombudsperson, who serves as a neutral resource for graduate students to confidentially discuss progress issues, mentorship concerns, or seek guidance from a neutral party about their studies. More information can be found at: https://graduateschool.nd.edu/policies-forms/reporting-concerns/ombuds/.

6. Policy on the use of Generative AI in Comprehensive Exams, Theses, and Dissertations

This section discusses the general policy on the use of generative (and predictive) artificial intelligence (AI) in graduate examinations, theses, doctoral scholarly projects, and dissertations. It applies to all graduate students in the Department of Civil and Environmental Engineering and Earth Sciences.

The department recognizes the potential of generative AI tools, when used responsibly, to help students work efficiently, gain critical insights fast and achieve better outcomes. Generative AI tools are increasingly used to help researchers synthesize complex literature, provide an overview of a field or research question, and provide support for a variety of tasks, including content organization and improving language and readability. At the same time, these tools need to be responsibly used, with human oversight and control. With these in mind, the written products developed by a student in fulfillment of the requirements of a doctoral or master's degree program, comprehensive exam, thesis, or dissertation are expected to be the student's original work. The use of generative AI tools (i.e., tools that synthesize text based on a prompt) in a comprehensive examination, dissertation, or thesis is permitted to provide written content, images, tables, references, or data under the following conditions:

- This use is approved by the student's advisor in consultation with the exam committee;
- Generative AI use is an approved accommodation under the Americans with Disabilities Act;
- A student's thesis or dissertation includes research on generative AI with examples clearly identified as examples and cited appropriately.

The extent of generative AI usage for writing the document should be disclosed in a statement within the thesis or dissertation. This statement will appear at the end of the first chapter. Students should provide details on the use of AI tools, including the name of the tool and the extent of its use (which chapters has it been used for and in what context). If the document includes a methods section, then the use of AI in the research process should also be declared. The use of AI or AI-assisted tools for generating figures/images to interpret the underlying research

data is permitted with declaration (e.g., in the figure caption). The use of generative AI or AI-assisted tools for enhancing, obscuring, moving, removing, or introducing a specific feature within an image or figure is not permitted unless the research itself is focusing on the use of such techniques, and this is clearly stated in the written document.

The use of AI for third-party editorial assistance for the following tasks:

- Correcting spelling, punctuation, and grammar.
- Formatting of margins, headings, and organizing of citations according to the style manual specified by the student (e.g., APA, Turabian, MLA).
- Making writing style suggestions, such as shortening long sentences, without changing the meaning of the text.

is always considered appropriate and does not need to be explicitly declared. The student is responsible for checking that the formatting revisions suggested by AI are correct and comply with their published style manual and the Graduate School's formatting requirements.

Students who violate the departmental policy will be subject to university disciplinary procedures for academic misconduct (honor code violation).