

**DEPARTMENT OF CIVIL, CONSTRUCTION, AND
ENVIRONMENTAL ENGINEERING**

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

GRADUATE STUDENT HANDBOOK

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The University of Alabama at Birmingham

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1 Introduction

1.1 General Information and Points of Contact

Civil engineers are involved in the planning, design, and construction of buildings, bridges, roads, and the evaluation of their operational performance. The Civil, Construction, and Environmental Engineering (CCEE) Department offers a distinguished program of undergraduate and graduate study and cutting-edge research covering various facets of Civil Engineering theory and practice. Thrust areas of the program include:

- structural,
- environmental,
- transportation engineering, and
- construction engineering management.

A knowledgeable and experienced group of faculty members work closely with students to provide them with the tools required to succeed professionally in globally-competitive work environments.

The Civil, Construction, and Environmental Engineering Department strongly encourages students to participate in experiential learning opportunities, such as industrial co-ops, engineering internships, and research with department faculty. These programs greatly enhance a student's education and provide the real-world experience that employers look for after graduation. A dedicated staff member assists students in finding and applying to these programs and incorporating them in the student's program of study.

One of the unique features of the UAB Civil Engineering Program is a Study Abroad Program that allows students to complete coursework overseas while broadening their international and cultural experiences. Academic credits can be utilized to fulfill undergraduate requirements or be applied towards the UAB "fast-track" master's degree. The "fast-track" master's option allows students to complete a master's degree in one year beyond their bachelor's.

During their studies at UAB, Civil Engineering students get many opportunities to take leadership in professional student organizations, participate in student competitions, and build valuable technical expertise and skills. Moreover, the UAB Civil Engineering department offers certificate programs, international programs, as well as professional programs which provide options for unique quality learning and practicing experiences.

The undergraduate UAB Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org>). The UAB Civil Engineering graduate program is accredited by SACS (Southern Association of Colleges and Schools).

The purpose of this handbook is to outline the policies, procedures and milestones for the MSCE and PhD degrees in Civil Engineering. This handbook should be used by students in the CE Graduate Program for guidance in their graduate studies and by advisors in advising students on the various required milestones in each of the degree programs.

Areas of Specialization

The CE Graduate Program at UAB has its home in the Department of Civil, Construction, and Environmental Engineering within the School of Engineering. The UAB CE Program currently offers four broad areas of specialization: structural engineering, transportation engineering, environmental engineering, and construction engineering management. Each of these areas has particular requirements for the MSCE and PhD degrees. Common to each specialization is a core set of courses. Also each research specialty has its own courses. Students not only take specialty courses in CE, but they also take courses throughout the university that are appropriate to their Degree Plan. The student's Research Advisor and the CE Graduate Program Committee will work with the student to tailor an individualized Degree Plan based on his/her research project and career aspirations.

Enrollment in the Civil Engineering Graduate Seminar series (CE 641/741) is required of all graduate students at least once prior to graduation. A listing of prerequisite courses required in these specialization programs is provided in Appendix A. A listing of graduate courses acceptable for advanced degrees is provided in Appendix B.

In addition to this handbook, the Graduate Program Director and the CE administrative staff members are available to provide assistance and guidance in day-to-day operation of the CE Department and the graduate program.

Dr. Nasim Uddin (Professor of Structural Engineering, departmental Graduate Program Director, 320 Hoehn Engineering Building, (205)-934-8432, nuddin@uab.edu) serves as the departmental Graduate Program Director. **Dr. Uddin will sign graduate student forms, approve Degree Plan, and provide other assistance as students reach the milestones toward their degree.**

Jennifer Vinson (CE Administrative Associate, 110 Hoehn Engineering Building, (205)-934-8430, jav@uab.edu) provides administrative support for the CE Graduate Program. **She is the primary contact for all questions related to the CE Graduate Program, including tuition and payroll questions.** All required CE Program documentation and forms must be submitted to the CE Administrative Associate.

Graduate Program Committee. The CE Graduate Program Committee is responsible for administering the CE Graduate programs as envisioned by the CE faculty and consistent with policies and procedures in the UAB Graduate School and the School of Engineering. The committee recommends students for admission into the CE Graduate Program, approves Degree Plans and thesis committee memberships, and provides guidance to students in the program. The committee consists of the following members; any of whom are available to assist you when questions arise:

- Dr. Nasim Uddin, Professor of Structural Engineering, Departmental Graduate Program Director
- Dr. Fouad H. Fouad, Professor of Structural Engineering, Department Chair

- Dr. Jason T. Kirby, Associate Professor of Environmental Engineering
- Dr. Rouzbeh Nazari, Associate Professor of Environmental Engineering
- Dr. Robert W. Peters, Professor of Environmental Engineering
- Dr. Muhammad Sherif, Assistant Professor of Structural Engineering
- Dr. Virginia Sisiopiku, Associate Professor of Transportation Engineering
- Mr. Andrew Sullivan, Associate Professor of Transportation Engineering
- Dr. Christopher Waldron, Associate Professor of Structural Engineering
- Dr. Wesley Zech, Professor of Construction of Engineering Management

Additional information regarding the graduate faculty in Civil Engineering can be found on the website:

<http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#faculty>

Other key personnel in the School of Engineering include:

Tommy Foley (Director of Information Technology, Hoehn 351, (205) 934-8477, tfoley@uab.edu) provides IT and technical support for the School of Engineering (SOE) and UAB computer systems, maintenance of computer labs, maintains security of computers in SOE, and distribution and installation of software licensed to UAB. Tommy is assisted by Eric Hilgendorf (ehilgend@uab.edu). SOE computer support is best obtained by contacting the School of Engineering's Help Desk staff at <https://uabweb.ad.uab.edu/eng/HelpDeskNew/default.aspx>.

Desland Robinson (Director, Career Services, Hoehn 115a, (205) 934-8400, DeslandRobinson@uab.edu) is a resource CE graduate students seeking career advice and networking opportunities. Desland engages engineering students in the career development process of exploring career options, gaining experience in a chosen field, preparing for the job search, and succeeding in their career goals. Desland provides a comprehensive employment program to bring employers and students together and serve as a catalyst for campus recruiting.

1.2 Sources of Information

This Handbook covers matters of particular concern to students in the CE Graduate Program. It supplements the information contained on the UAB Graduate School website linked below, which presents policies and regulations for all graduate students at UAB. Students are responsible for familiarizing themselves with both.

UAB Graduate School forms, policies and guidelines:

<http://www.uab.edu/graduate/students>

The CE Graduate Program Handbook is available at

<https://www.uab.edu/engineering/civil/graduate>

Other important sources of information:

- The CE Graduate Program website (<https://www.uab.edu/engineering/civil/graduate>), also covering the on-line Masters' programs.
- The CE Graduate Program Documents website; degree plans, forms and templates

(<http://www.uab.edu/engineering/home/graduate-programs/ce-graduate-program-documents>).

- The UAB Graduate Catalog (<http://www.uab.edu/graduate/graduate-catalog>). General graduate information, guidelines, and regulations
- The Graduate School Deadline Dates (<http://www.uab.edu/graduate/students/current-students/completing-your-degree/application-deadlines>)
- The Graduate School Forms (<http://www.uab.edu/graduate/online-forms>)
- The UAB Thesis and Dissertation website (<http://www.uab.edu/graduate/theses-and-dissertations-at-uab>). Instructions for preparation, formatting and submission of theses and dissertations
- Information on UAB's Student Health Services (<http://www.uab.edu/studenthealth/>)
- UAB Occupational Health and Safety (<http://www.uab.edu/ohs/>). General information on health and safety, laboratory and chemical safety, biohazards, radiation safety

Graduate students should familiarize themselves with UAB, Graduate School, and CE Department policies and procedures early in their graduate program to facilitate a smooth and timely transition through graduate school. If you have a question that neither of these sources resolves, please contact:

Dr. Nasim Uddin (nuddin@uab.edu)
Departmental Graduate Program Director
Department of Civil, Construction, and Environmental Engineering
University of Alabama at Birmingham
Hoehn Engineering Building, 1075 13th Street South
Birmingham AL 35294-4440
(205) 934-8432 (office)
(205) 934-9855 (fax)

2 Student Activities, Financial Aid and Support

2.1 American Society of Civil Engineers (ASCE) Student Chapter at UAB

The goal of the ASCE student chapter is to introduce students to the profession of Civil Engineering. We provide an environment for social interaction and exchange of ideas between students and faculty.

Membership Criteria: Student membership is open to anyone pursuing a course of study in CE or a related science. Applications are available in the CE Office (110 Hoehn Engineering Building).

Faculty Advisor: Mr. Richard Hawkins, (205) 934-8459, rhawkins@uab.edu.

2.2 Institute for Transportation Engineers (ITE)

The purpose of the UAB Institute of Transportation Engineers Student Chapter is to promote the advancement of transportation and traffic engineering by fostering the close association of students with the transportation and traffic engineering profession and the

Institute of Transportation Engineers. Each year, the UAB ITE student chapter organizes and participates in a number professional development and service activities including field trips, guest speaker seminars, fundraising, recruitment events, and awards competitions.

Any student enrolled at the University of Alabama at Birmingham, with an interest in transportation engineering, is eligible for membership. Currently no membership fee is required. However, students should obtain membership to the national ITE. If you are interested in becoming a member of the UAB ITE Student Chapter please contact the Faculty Advisor, Dr. Virginia Sisiopiku. The student membership for ITE is free for the first year. Details on membership benefits and application materials are available at <http://www.ite.org/membership/StudentVoucher.pdf>. More information about UAB ITE Student chapter is available at: <https://www.uab.edu/engineering/trendlab/ite>.

Faculty Advisor: Dr. Virginia Sisiopiku, (205)-934-9912, vsisiopi@uab.edu.

2.3 Financial Support

Graduate students in the CE Department are typically supported by a Graduate Research Assistantships (GRA) funded through research advisors' grants or contracts. PhD students on a GRA receive a competitive monthly stipend, plus tuition and fees in exchange for work on a research project, often leading to their thesis or dissertation.

At the discretion of the BlazerBest Fellowship Program, subject to funding from the UAB Graduate School, some first-year doctoral students are funded by a Graduate Assistantship Fellowship Program (GAFP). These BlazerBest fellowships are not subject to Federal withholding tax. In addition, tuition is paid directly to the Student Accounting office for students appointed to GAFPs. All other forms of stipend support are taxable.

For students funded from grants, the Principal Investigator, who is usually the student's thesis advisor, defines the requirements and expectations for a GRA. Research is the main component of graduate education, and thus students must put in the time necessary to make measured progress on their research project. Students are expected to spend a minimum of 40 hours per week on course work and research leading to the CE degree being pursued. Most students find that they put in more than the minimum number of hours per week to meet deadlines and graduate on time.

Additional information related to financial support is provided in the following websites:

Graduate Assistantships:

<http://catalog.uab.edu/graduate/graduateassistantshipsandfellowships/>

Financial Information: <http://catalog.uab.edu/graduate/financialinformation/>

In order to be eligible for full financial support, a student must register for 9 credit hours each semester (Fall, Spring and Summer semesters), for the total of 27 credit hours per year. This can be a combination of courses, CE seminar, and research credit hours. Students receiving stipends are expected to register only for courses that are directly related to their degree. The CE Department will not pay any late fees so students should make sure that they register for classes in a timely manner.

2.3.1 Fellowships

All graduate students are encouraged to apply for a graduate fellowship, assistantship, or scholarship to support their graduate studies. A number of government agencies, private foundations, and professional societies that have predoctoral (and postdoctoral) fellowships are listed in Appendix C. Research Advisors and the CE Graduate Program directors are willing to help students prepare a competitive fellowship application. In addition, the UAB Graduate School offers financial incentives to students who apply for and are awarded individual fellowships to support their predoctoral studies. Details, eligibility criteria, as well as a partial list of fellowship opportunities are in Appendix C. Additional information can be obtained from the UAB Graduate School website [Training at UAB](#).

2.4 Vacation Policy

In general, graduate research assistants and trainees are expected to be available in the periods between academic terms. Graduate research assistants and trainees are entitled to the following short-term leaves:

- a maximum of 15 calendar days (one-half month) paid leave of absence (vacation) per calendar year,
- 3 calendar days paid sick leave of absence per calendar year, and
- parental leave of absence (with pay) of 30 consecutive days per calendar year upon the birth or adoption of a child. Either or both parents are eligible for parental leave.

These leaves (vacation, sick, parental) do not accrue. All leaves require advanced notification of and approval by the mentor or Graduate Program Director and may be extended, if necessary, with the permission of the Graduate Program Director. With the agreement of the mentor and Graduate Program Director, extended, unpaid, non-emergency absences from campus for periods up to a month may be approved. Extended absences (without pay) for non-academic purposes should be limited. Students should consult the Graduate School Policies and Procedures concerning leaves of absence. In emergencies, graduate research assistants and trainees should inform their mentors or program directors as soon as possible about the need for a leave of absence.

Read the UAB Graduate Student Handbook for more detailed information.

3 Academic Programs

3.1 Statement on Academic Conduct and Academic Integrity

Academic misconduct undermines the purpose of education. Such behavior is a serious violation of the trust that must exist among faculty and students for a university to nurture intellectual growth and development. The CE faculty holds academic integrity as one of the highest characteristics necessary for success in graduate school. Students in CE are expected to abide by the UAB Academic Honor Code and at all times avoid engaging in behavior that is or that may be perceived as academic dishonesty. Academic dishonesty includes, but is not limited to the following categories of behavior:

ABETTING: Helping another student commit an act of academic dishonesty. Allowing others to copy your quiz answers, or use your work as their own are examples of abetting.

CHEATING: The use or attempted use of unauthorized materials, information, study aids, the answers of others, or computer-related information.

PLAGIARISM: Claiming as your own the ideas, words, data, computer programs, creative compositions, artwork, etc., done by someone else. Examples include improper citation of referenced works, use of commercially available scholarly papers, failure to cite sources, copying other's ideas, work or computer programs.

FABRICATION: Presenting as genuine falsified data, citations, or quotations.

MISREPRESENTATION: Falsification, alteration or misstatement of the contents of documents, academic work or other materials related to academic matters, including representing work substantially done for one class as work done for another without receiving prior approval from the instructor. Misrepresentation also includes misrepresenting schedules, prerequisites, transcripts, or other academic records.

Violations of the Academic Conduct are punishable by a range of penalties from receiving a failing grade on an assignment or examination to failing the course. Any course grade of F for academic misconduct supersedes any other grade or notation for that class.

More information on Academic Ethics and Conduct is available in the UAB Graduate Student Handbook. See also Appendix D.

3.2 Registration

1. Upon entry into the program, each student will receive a user ID (called your Blazer ID), an official UAB e-mail address and computer account. Your UAB e-mail address will be used for all official correspondences from the department and the university. You should not forward your UAB e-mail to another account (hotmail, gmail, etc.). All students are expected to read their e-mail several times a week to receive announcements and notices. Students are responsible for reading and responding to all UAB and CE Program messages in a timely manner.
2. **To register for courses, please sign in to [BlazerNET](#).** Access to BlazerNET requires a [BlazerID](#) and password. Once logged in to BlazerNET, click on the Student Resources tab. On the Student Resources tab, see a channel entitled "Registration Tools." All the tools you need to register are available as links within this area.

To look up the Course Reference Number (CRN) for your course(s):

Click on the "Look Up Classes" link to search the available courses for the term. You may search for classes with several different criteria, but the only block that must be utilized is the *Subject* block. Once the classes are visible, register for the course(s) by clicking on the empty checkbox to the left of the CRN and clicking on the Register button at the bottom of the screen.

If you already know the CRN for your course(s):

Click on the “Add/Drop Classes” link in the “Registration Tools” channel. The Add/Drop worksheet will appear. There will be a row of empty blocks. Type in the five-digit CRN for your course in any of the blocks. If you are registering for more than one course, tab over to another block and enter in all of the courses at one time. (You do not need to type in the subject or number for the course, only the CRN is required!). Click on the *Register* button at the bottom of the screen when complete.

To verify that you have successfully registered:

If you would like a Registration Confirmation, click Registration Confirmation in the “Registration Tools” channel. If you would like to see your classes in a schedule format, follow these steps: On the Student Resources tab, click on the link “Banner Self-Service.” Click on *Student and Financial Aid*. Click on *Registration*. Click on *Student Detail Schedule* or *Week at a Glance*.

3. Each student receiving a stipend, fellowship or assistantship must register for 27 credit hours per year (9 credit hours per semester) except where this requirement is superseded by the Graduate School requirements. This can be a combination of course work, CE seminar, and research credit hours. Students receiving a stipend cannot accept outside employment. In rare instances where a student has completed all of the thesis or dissertation defense requirements and is not on campus, but must be registered in order to graduate in their final semester, the student may register for only one credit with the permission of the CE Graduate Program Director, the CE Department Chair, and the Graduate School Dean. This is a one-time only exception to the full-time enrollment requirement/
4. M.S. students are required to register for 1 semester of graduate seminar (CE 641) in order to graduate. PhD students are required to register for 1 semester of graduate seminar (CE 741), depending on the PhD program track. The seminar program features experts from industry, academia, and government who discuss innovative research, new technology development, regulatory requirements, and industry trends and perspectives that impact health care. Interacting with the speaker as well as CE faculty members, CE graduate students and other colleagues at the seminar is an important opportunity to participate in the CE community and expand your horizons. All MS and PhD students are expected to attend the seminars.

3.3 Academic Performance Requirements

Students must maintain an overall GPA of at least 3.0 to remain in good academic standing in the CE Graduate Program. If a student fails to meet the criteria for good academic standing at the end of any semester, the student will be placed on academic probation. Such a student must re-establish good academic standing within the next two semesters. Students who do not accomplish this level of performance will be dismissed from the Graduate Program.

The CE Graduate Program requires that each student selects a research advisor and formulates a preliminary degree plan by the end of the first year of graduate study. If this requirement is not fulfilled, the student can be dismissed from the Graduate Program.

Each student has to form a Thesis or Dissertation Committee and hold its first meeting within the second semester. After that, the Dissertation/Thesis Committee must meet at least annually (for Ph.D.) or semi-annually (for M.S.) to review the student's progress. After each meeting, a brief progress report signed by the Committee Chair must be submitted to the CE Graduate Program Director. Report templates are available on the CE Graduate Program Documents website. If the progress is considered to be unsatisfactory, the Committee should implement a plan to improve student performance within the next six months.

Each student has to submit an annual (Ph.D.) or semi-annual (M.S.) progress report. Report templates are available on the CE Graduate Program Documents website. The deadline for a report is the last day of classes of spring semester (Ph.D.) or spring/fall semesters (M.S.). If the requirements for timely committee meetings and submission of progress reports are not met, such a student will be placed on probation and will have to fulfill these requirements within the next semester. If they are not fulfilled, the student will be dismissed from the Graduate Program.

Each student is responsible for following milestones, meeting the deadlines, arranging their committee meetings, and submitting all required documentation for your degree program to the CE Graduate Program office and the UAB Graduate School. If you are unsure about the milestones in your degree program, ask your academic advisor, or the CE Graduate Program Director. Please refer to the [Graduate School](#) website for deadlines, forms, and instructions.

Unless otherwise stated, all forms and documents, including those that require signature of the CE Graduate Program Director, have to be submitted to the CE Graduate Program Director and the CE departmental Administrative Associate.

3.4 Thesis and Dissertation

MSCE and PhD students are expected to submit a high-quality thesis or dissertation available to the public that excels technically and meets high standards for structure, grammar, and writing style that conform to the requirements of the UAB Graduate School for [Theses and Dissertations](#) found on their website:

<https://www.uab.edu/graduate/theses-and-dissertations>. In the event that the thesis/dissertation does not meet the quality standards established by the CE Department and the Graduate School, the mentor or Graduate Program Director may require review by an external editor. The expense for editing is the responsibility of the student, although the mentor may support it from research funds at her or his discretion.

The CE Graduate Program Director is required to review each student's thesis or dissertation before it is submitted to the Graduate School. To allow adequate time for review, submit the final copy, approved by the thesis/dissertation committee, in electronic form (PDF or Word file) to the CE Graduate Program Director at least 5 business days before it is due to the Graduate School.

The UAB Graduate School and the CE Department aspire to ensure that all graduate students can communicate effectively and prepare written reports (theses, dissertations,

manuscripts, etc.) to the highest ethical standard. Refer to the UAB Graduate Handbook for definition of plagiarism and guidance to avoid incidences of plagiarism. Each thesis and dissertation will be submitted to Turnitin to check the documents for originality. The results of the originality report will be shared with the student who, along with the Research Advisor and Graduate Program Director, will determine whether any parts of the thesis need to be rewritten to conform to the norms of good scientific writing and proper citation of source material.

Instructions for submitting your thesis or dissertation to the UAB Graduate School can be found at [The UAB Thesis and Dissertation website](#). Note that the CE Department deadline above requires that you complete your thesis or dissertation well in advance of the Graduate School deadlines. An electronic copy should be sent to the CE Program Administrative Associate.

If you would like to have bound copies of your thesis or dissertation, Sterne Library can handle that process for you. Students are expected to pay for the copying, although some assistance may also be available through the Graduate Student Association or from your advisor. Information on ordering bound copies of your thesis or dissertation can be found here: <http://www.uab.edu/graduate/ordering-bound-copies>.

3.5 Time Limitations

CE graduate students are expected to complete their degree requirements within

- 3 years for the MSCE degree
- 6 years for Ph.D. degree if starting with a B.S. degree
- 5 years for Ph.D. degree if starting with an MS degree.

In the event that a student exceeds the time limit, the student must submit a written petition to the CE Graduate Committee for continued funding. The petition should include:

- Explanation of specific reasons for the delay in completion of the degree.
- A “Completion Plan” which will outline specific goals, deadlines for meeting these goals, and a stipulation that the student will meet with his/her committee to review progress at each of the proposed deadline times. It is recommended that the time intervals between proposed student’s committee meetings be no longer than 3 months (MS) or 6 months (PhD). The plan should be signed by the student and his/her advisor. The completion plan will be submitted to the UAB Graduate School for their approval.
- A letter from the student’s advisor with a strong endorsement for continuation and assurance for funding availability.

3.6 The Program for the Master of Science in Civil Engineering (MSCE)

Enrollment Requirements:

To be considered for admission to the MSCE program, an application must be submitted to the UAB Graduate School. The completed application will then be reviewed by the CE graduate program committee; additional details for applying to our graduate program (application checklist) are described in the following document:

http://www.uab.edu/engineering/home/images/CCEE/Civil_Engineering.pdf.

Details describing admission into a particular graduate program are available here: <https://www.uab.edu/graduate/admissions>.

The CE Graduate Program offers Plan I (thesis-based) Master's degree and Plan II (course-based) non-thesis Master's degree. A listing of graduate courses in the Civil Engineering Program is provided in the departmental website:

<http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>.

Admission Requirement:

The following minimum requirements apply to the plan of study for a student who has earned a baccalaureate degree in civil engineering. A student with an undergraduate degree in another field may also be accepted into the civil engineering program but will normally have to take additional preparatory coursework as part of an expanded plan of study. Continuous enrollment for at least 3 credit hours per term is required. Students receiving a research or teaching assistantship are required to be enrolled as full-time students every semester. A full-time student is one who is enrolled in at least 9 credit hours per term. ***Enrollment in the Civil Engineering Graduate Seminar (CE 641) is required at least once prior to graduation.***

Plan I (Thesis Option)

1. In addition to the general Graduate School requirements, the student must successfully complete at least 33 semester hours of graduate credit, including:
 - (a) A minimum of 18 semester hours in civil engineering;
 - (b) Up to 6 semester hours in disciplines outside civil engineering, such as other engineering disciplines, mathematics, biology, earth science, physics, urban affairs, or public health.
 - (c) A maximum of 6 graduate credit hours may be taken as independent study classes.
 - (d) A minimum of 9 hours of CE 699 (Master's Thesis Research).
2. The student must pass a comprehensive examination on the content of the program. This examination may be written, oral, or both and shall include an oral defense of a thesis.

Plan II (Non-thesis Option): Research/Design Emphasis

1. The student must successfully complete at least 33 semester hours of graduate credit including:
 - a) A minimum of 24 semester hours in civil engineering;
 - b) Up to 6 semester hours in disciplines outside civil engineering, such as; other engineering disciplines, mathematics, biology, earth sciences, physics, chemistry, or public health; and
 - c) A minimum of 3 hours of CE 698 – Non-thesis Research under the direction of the graduate study committee chair, resulting in a committee approved written report.
2. The student must pass a comprehensive examination on the content of the program. This examination may be written, oral, or both and shall include an oral defense of the non-thesis research project.

In addition to the MS and PhD programs, Masters of Engineering programs are available in the following areas: construction engineering management, structural engineering, and sustainable SMART cities. The Masters of Engineering programs are described in the CE graduate program website.

3.6.1 Requirements for the MSCE Plan I (thesis-based) Degree

The Plan I (thesis-based) Master's degree requires completion, in good academic standing, of at least 33 semester hours of appropriate graduate work, submission of a written thesis embodying the results of original student research, public presentation and defense of the thesis. The following are general guidelines for Plan I Master's students:

1. The 33 credit hours of graduate-level work for Plan I MS degree include
 - 24 semester hours of course work prior to candidacy including core courses and elective courses. A listing of graduate courses offered by the CE department is provided in the following website:
<http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>
 - 9 hours of thesis research CE 699 taken after admission to candidacy. Additionally, 1 hour of CE seminar is required for the MSCE degree.

English speaking or writing proficiency courses for international students recommended as a result of the Graduate School assessment (described above) do not count as part of the 24 credit hours of graduate course work required for the MSCE degree.

2. The CE Graduate Program Committee or the CE Graduate Program Director must approve all substitutions. It is emphasized that 33 hours (plus 1 hour of CE seminar) is a minimum requirement and most students complete more hours than this minimum while earning the MSCE degree. Additional course work requirements are based on the student's background and thesis topic and are developed on an individual basis in consultation with the student's research advisor and the departmental Graduate Program Director.
3. The Graduate School requires that a student must be admitted to candidacy before they can register for CE 699. This means you cannot register for CE 699 and accrue the required number of thesis hours until you have submitted your research abstract. This is another reason why you must not wait until you are almost finished with your thesis or project non-thesis report to present your research abstract.
4. The Graduate School requires admission to candidacy to take place at least one semester before the graduation date in the case of the M.S. degree. Present your research abstract and achieve candidacy well in advance of your planned graduation date!
5. The time limit for completion of Master's degree is 3 years. Continuation beyond this time limit requires a petition to the CE Graduate Program Committee (see section 3.6).

3.6.2 MSCE Plan I Milestones

1. Selecting Research Advisor

Each student has to identify a Research Advisor by the end of the first year of graduate program. It is a student's responsibility to choose a Research Advisor. This person must agree to accept you as a student.

If the Research Advisor holds a primary appointment in CE, this person will also serve as the Program Advisor. If the Research Advisor is not a primary CE faculty member, then:

- Complete a [Mentor Selection Form](#) and submit it to the CE Graduate Program Director.
- Select a Program Advisor from faculty with a primary appointment in CE. The Program Advisor will serve on the thesis committee and will ensure that the student meets requirements for the MSCE degree.

2. Formulating Degree Plan

The Research Advisor will help you to identify your thesis project and formulate a Degree Plan. The Degree Plan lists all core and elective courses the student is expected to take for the degree. Degree Plan forms as well as Degree Plan Guidelines can be downloaded from [the CE Graduate Program Documents](#) website. The CE Graduate Program Committee must approve the Degree Plan. You should keep a copy of the Degree Plan and use it as a guide for registering for courses. Changes in the Degree Plan will be made in consultation with the student's Research Advisor and Program Advisor, or in some cases with the student's Graduate Thesis Committee. The preliminary Degree Plan must be completed during the first year of your program. Changes to the Degree Plan must be approved by the CE Graduate Program Committee.

3. Selecting Graduate Thesis Committee

The Graduate Thesis Committee must be selected by the end of the end of the first year in the CE Program. Fill out a Graduate Study Committee Letter ([The Graduate School Forms](#)), submit it for approval to the CE Graduate Program Director for submittal to the UAB Graduate School. If there is ever a change in your Graduate Study Committee, a Change of Graduate Study Committee form must be filled out and turned in to the Graduate School. The form to Request to Change Graduate Study Committee is found in the web-link: <https://www.uab.edu/graduate/images/documents/resources/faculty-program-directors/changecom.pdf>

Your Thesis Committee should have a minimum of three people including your Research Advisor. Your Research Advisor can help you in selecting Committee members. It is required that at least one (1) Committee member has a primary appointment in CE. It is preferred that the majority of the Committee be comprised of CE primary graduate faculty. Each committee member should be able to bring some relevant expertise to guide your research.

Any committee member, who is not already appointed to the UAB graduate faculty, has to be appointed as an *ad hoc* committee member. The procedure for requesting *ad hoc* appointment can be found at:

<https://www.uab.edu/graduate/images/documents/resources/faculty-program-directors/faculty-appointment-form.pdf>.

The request should be sent to the contact listed on the form as a single PDF file containing (i) a letter of nomination from the student's advisor, (ii) a completed Recommendation for Appointment to Graduate Faculty form, and (iii) the applicant's current CV. A copy of the file should be also sent to the CE Graduate Program Director, and a copy sent to the departmental administrative associate.

It is up to you to contact each faculty member whom you select to serve on your Thesis Committee, and explain to them the nature of the proposed research. Faculty members are not required to serve on a student's Committee. Most faculty members will agree to serve on a Committee if they are not already over committed.

An initial meeting with the Graduate Thesis Committee must be held before the end of the second semester in the MSCE Program. The first committee meeting can be fairly informal with the purpose for the student to get to know the committee members, and for the committee members to learn about the area of study for the thesis, about the project outline and broad goals. The student is not expected to make a detailed or lengthy presentation.

4. Master's Progress Reviews

- Master's students should meet with their Thesis Committee at least every six months to review their progress. Typically, a student meets informally with the committee towards the end of the first year of graduate study, has a progress report meeting with the committee in the summer or fall semester, proposes in the fall/spring semester of the second year, and then defends during the following semester. The CE faculty advisor (committee chair) must be notified regarding all committee meetings, with notification sent to the CE Graduate Program Director.
- Starting with the second meeting (first meeting, if it was thesis proposal defense):
 - i. Download the CE Graduate Student Committee Meeting [Evaluation Form](#) and pass it out to Committee members. At the conclusion of the meeting, ask a member of the Committee to collect the forms and turn them in to the CE Program Administrator. The CE Grad Program Director or primary mentor will forward you the score averages and Committee comments.
 - ii. Ask the Committee Chair to complete the Graduate Committee Chair Report using the [template](#) available online. The report should present the Committee consensus regarding progress made, goals met since the previous review, and specific goals set for the next review period. The Committee Chair report must be submitted to the CE Graduate Program Director no later than 2 weeks after the Committee meeting.

- Starting with the fall semester of the second year, and then every fall and spring semester, complete the Graduate Student Progress Report using the [template](#) available online. Submit the progress report to the CE Graduate Program Director. Starting after the second Committee meeting, include a copy of the most recent Committee Chair report. The deadline for submission of the student's progress report is the last day of classes of the spring/fall semester.
- In the event that requirements for timely committee meetings and submission of progress reports are not met, such a student will be placed on probation and will have to fulfill these requirements within the next semester.

5. Submission of Thesis Abstract and Admission to Candidacy

After you have completed most of your course work, you must present your thesis research abstract. You should normally present the abstract during the second year after you begin taking core courses. Under no circumstances should your plan be presented less than one semester before your thesis defense. By giving you and your committee time to review your planned work, you will avoid last minute surprises.

No later than 2 weeks prior to the proposal defense date, you must:

- Send the final draft of your written thesis abstract to the committee members.
- Send the CE Graduate Program Director and the CE Administrative Associate your proposal title, abstract, a list of committee members (indicating the committee chair), defense date, time and location so that the appropriate announcements can be distributed 2 weeks in advance of the defense.

Failure to provide the CE Department with the required information or your committee with the final draft of your proposal in a timely manner will result in cancellation of your scheduled defense if the 2-week requirement cannot be met. Faculty members can be very busy, particularly near the end of an academic term. Therefore, you should start scheduling your defense meeting early, several weeks prior to the planned defense date. Also, be advised that it is often harder to schedule meetings in the summer.

You must download the [CE M.S. Proposal Evaluation Form](#) and pass it out to those in attendance at your proposal. After your proposal defense, a member of your committee will collect the forms and turn them in to the CE Graduate Program Director and the faculty advisor (committee chair) who will forward you the score averages and committee comments.

After your proposal defense:

- Fill out the Admission to Candidacy Form (<http://www.uab.edu/graduate/online-forms>) and have it signed by your thesis advisor. Note the additional Research Compliance Verification Form is needed if your research involves humans or animals.
- E-mail to the CE Graduate Program Director at least 5 business days before the Graduate School deadline for submission of the Admission to Candidacy Form:
 - a PDF file with your final thesis abstract; and
 - the Admission to Candidacy Form.

- After your proposal is approved, submit the signed Admission to Candidacy Form to the Graduate School by the school deadline. After that, you will be admitted to candidacy.

6. Thesis Preparation

The thesis must be prepared and formatted according to the UAB Graduate School's instructions described on the [UAB Graduate School Thesis and Dissertations](#) website. The thesis is expected to be of high-quality, excel technically and meet high standards for structure, grammar, and writing style. A typical thesis contains a title page, an abstract, an introduction with comprehensive literature review, objective, hypotheses, methods, results, discussion, future work, conclusions, and a complete bibliography.

The thesis is presumed to be the original research work of the student. If previously published material is used in the thesis, written permission to use the material must be obtained from the copyright holder (see the UAB Format Manual for Theses and Dissertations website:

https://www.uab.edu/graduate/images/documents/resources/current_students/FormatManual.pdf).

Students who have manuscript(s) published, accepted or submitted for publication can organize their thesis in the Preprint/Reprint style (see Section 4.2 and the [UAB Dissertation and Thesis](#) website. Please read the UAB Manual regarding the copyright issues.

The thesis will be submitted to Turnitin for review of originality.

7. Defense of the Thesis

At the beginning of your final semester, you will need to complete an [Application for Degree form](#) and turn it in to the Graduate School, with a copy sent to the CE Graduate Program Director and the CE Administrative Associate.

After you have completed your thesis research, you will present the results to your Master's Thesis Committee at a formal presentation open to public. You should attend a few of these events before your defense to let you know the nature and scope of the thesis defense meetings.

The date of the defense must comply with the [Graduate School deadlines](#). (See web-link: <https://www.uab.edu/graduate/students/current-students/completing-your-degree/application-deadlines>).

No later than 2 weeks prior to the thesis defense date, you must:

- Send your thesis to the thesis committee members.
- Send the CE Graduate Program Director and the departmental administrative associate your thesis title, abstract, a list of committee members (indicating the committee chair), the date, time and location of your defense so that the appropriate announcements can be distributed.
- Fill out the Request for Thesis Approval Form through the Graduate School (<http://www.uab.edu/graduate/request-thesis-or-dissertation-approval-forms->

[theses-and-dissertations](#)) and obtain the Thesis Approval Form from the Graduate School.

Failure to provide the CE Department with the details of your defense or your committee with the thesis in a timely fashion will result in cancellation of your scheduled defense so that the 2-week requirement can be met. Faculty members can be very busy, particularly near the end of a term. Therefore, you should start scheduling your defense meeting early, several weeks prior to the planned defense date. Also, be advised that it is often harder to schedule meetings in the summer.

Committee members are encouraged to read the student's thesis within one week of receiving the manuscript. If there are significant problems with the document, the student, in consultation with their Research Advisor, may elect to re-schedule the defense.

After you make a formal presentation, the committee and the attending public can ask you questions. You are expected to be able to field these questions in a professional and efficient manner. The non-committee members are then asked to leave the room; your Graduate Thesis Committee will ask you additional questions and then decide whether or not you pass the final examination, the defense of your work.

As part of the overall assessment of the CE Master's Program, your committee members and others who attend your master's defense will complete the [Master's Thesis Defense Evaluation Form](#). You must download the form from the website and bring copies to your defense. After your defense, your Research Advisor will collect the forms and deliver them to the CE Graduate Program Director. The primary CE faculty mentor will forward you the score averages and committee comments. The results of this evaluation are used by the CE Program to assess whether we are meeting Program Goals as required by the Southern Association of Colleges and Schools (SACS) to maintain program accreditation. The results of this evaluation are not used to determine whether the student passed the master's thesis defense.

All students must schedule their thesis final examination in accordance with the Graduate School policies (the UAB Graduate Student Handbook). Notably:

Under Plan I, the final examination should take the form of a presentation and public defense of the thesis, followed by an examination of the candidate's comprehensive knowledge of the field. The time, date, and location of this examination is reported to the Graduate School via the online Request for Thesis or Dissertation Approval forms (submitted at least 10 business days before the public defense) and allows for the attendance of the Graduate School Dean. The meeting must be appropriately announced on campus, must be open to all interested parties, and must take place at least 30 days before the expected date of graduation. Plan I candidates must be registered for at least three semester hours of graduate work in the semester during which degree requirements are completed.

8. Thesis Defense Dissent

If one or more committee members don't approve the thesis defense, the following policy outlined in the UAB Graduate Student Handbook is followed:

“If in the opinion of more than one member of the thesis committee, the student has failed the thesis defense, there is no consensus to pass. The chair of the committee shall advise the student that the thesis fails to meet the requirements of the program. The chair shall notify the student in writing about the reason(s) for failure. If the student resubmits or submits a new thesis for consideration by his/her graduate program at least two members of the new examining committee shall be drawn from the original committee. If the modified or new thesis fails to meet the requirements of the program, the student shall be dismissed from the graduate program.

In the event that only one of the three committee members dissent, that individual must submit a letter in which he/she outlines the reasons for their dissent to the student’s advisor. The advisor and student may then prepare a rebuttal statement that is submitted, along with the letter of dissent, to the advisory or executive committee of the program for review. The advisory committee can then decide to accept or reject the rebuttal statement. If the rebuttal is accepted, the student is passed on his/her thesis defense. If the rebuttal is rejected, the advisory committee can recommend to the student or advisor potential steps necessary to remediate the thesis and potentially also the work therein, or the committee can recommend that the student be dismissed from the program.”

9. Submission of the Thesis

1. One week (5 business days) before thesis submission to the Graduate School (see below), send by e-mail the following information to the CE Graduate Program Director and the CE Administrative Associate for review and approval:
 - The date of the public defense;
 - Attach the final version of the thesis in a PDF file;
 - Attach the Thesis Approval Form signed by each committee member; and
 - Attach your CV, which includes all publications and conference presentations.
2. No later than two weeks (10 business days) following the public defense, the final version of the thesis must be submitted to the Graduate School online as a single PDF file. In addition, submit the Thesis Approval Form signed by each committee member and the Graduate Program Director, and the UAB Publication Agreement form (online). Follow the Graduate School requirements on thesis submission found on the [UAB Thesis and Dissertation website](#). Read and complete the Thesis/Dissertation Submission Checklist.

An extension can be requested from the Graduate School if the defense was held well before the semester deadline for final defense and if the thesis committee feels additional time is needed to complete the thesis. Extensions cannot be granted past the semester submission deadline (10 business days after the final defense deadline).

10. Petition for Admission into the Ph.D. Program

Following completion of Plan I Master's degree, students can apply to the Ph.D. Program. After thesis defense, a student needs to submit the following papers to the CE Program Administrator:

- an application letter addressed to the CE Graduate Program Committee;
- a CV; and
- an endorsement letter signed by all members of student's Thesis Committee.

The application will be evaluated by the CE Graduate Program Committee; it is not required to re-apply to the Graduate School. Admission to the Ph.D. program does not guarantee a specific research project or funding; the student should communicate with potential Ph.D. advisors to secure a project and funding around the time of the Master's defense.

11. Graduation

Plan to attend the graduation ceremony. This is a time-honored ceremony, and you have worked hard to earn this distinction for yourself. Take the time to enjoy one of the first fruits of your labor.

3.6.3 Milestone Summary for the MSCE Plan I Program

1. Enter with B.S. degree.
2. Choose Research Advisor and research project (first year). Submit Mentor Selection Form if the Research Advisor is not a CE primary faculty member.
3. Formulate a preliminary Degree Plan with Research Advisor and the departmental Graduate Program Director and submit to the CE Graduate Program Committee (first year).
4. Complete a minimum of 24 semester hours of graduate level course work plus 1 term of CE seminar (CE 641). MS students are also required to successfully take 6 modules of Responsible Conduct of Research: Collaborative research; Research, ethics, and society; Research misconduct; Data management; Plagiarism; and Authorship, and participate in one 2-hour discussion on Responsible Conduct of Research..
5. Choose Master's Thesis Committee (second semester). Fill out the Graduate Study Committee Letter (see web-link: https://www.uab.edu/graduate/images/documents/resources/current_students/forms/Graduate-Study-Committee-Letter-6-2018.pdf) and submit to the Graduate School.
6. Meet with the Thesis Committee to discuss research goals and progress (semi-annually, starting with the second semester). At each meeting, have committee members complete Graduate Student Committee Meeting Evaluation Form. After the meeting, ask the Committee Chair to submit the Chair report. Submit your own progress report before the last day of class of spring and fall semesters. Review and revise Degree Plan as necessary.
7. Present the Thesis Proposal and be admitted to Candidacy (at least one semester before thesis defense, preferably in fourth semester after admission). Comply with Graduate School requirements on candidacy. Download CE M.S. Proposal Evaluation Form and pass it out to those in attendance at your proposal meeting. Complete the Admission to Candidacy form and turn it into the Graduate School by the deadline.
8. Complete 9 hours of thesis research (CE 699) in candidacy.
9. Schedule thesis defense. Complete an Application for Degree form and turn it in to the Graduate School before deadline (beginning of the final semester).
10. Two weeks before the defense: (i) present the thesis committee with a copy of the thesis; (ii) notify the CE Graduate Program Director; and (iii) submit the online Request for Thesis Approval Form.
11. Present and defend the thesis in a well-publicized, public presentation before the Graduate School deadline. Bring Master's Thesis Defense Evaluation Form to your Thesis Defense.
12. Submit the finalized thesis and CV to the CE Graduate Program Director for review no later than one week (5 business days) following the public defense. After the thesis approval, submit the Thesis Approval Form signed by each committee member to the departmental Graduate Program Director for signature.

13. Submit the final version of the thesis approved by the Thesis Committee and the CE Graduate Program Director to the Graduate School for final review no later than two weeks (10 business days) following the public defense. Submit the Approval Form signed by the thesis committee members and the departmental Graduate Program Director.
14. Petition for admission into the Ph.D. program (if applicable).
15. Graduate.

3.6.4 Requirements for the MSCE Plan II (course-based) Degree

The Plan II (course-based) Master's degree requires completion of at least 33 semester hours of graduate-level work including 30 semester hours of course work and 3 hours of non-thesis research (CE 698), plus 1 term of CE seminar (CE 641). It also requires completion of a research project and submission of a written project report approved by student's research advisor. Submission of the project report to the Graduate School is not required. Successful non-thesis defense notification (signed by the non-thesis committee advisor) must be submitted to the Graduate School (with copies provided to the CE Graduate Program Director and the CE Administrative Associate).

The 30 credit hours of graduate-level course work for Plan II M.S. degree include: core courses and elective courses.(9 credit hours). Civil engineering graduate courses are listed on the website:

<http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>

At least 3 credit hours of non-thesis research must be taken to satisfy the requirements for the Plan II MSCE degree.

3.6.5 Milestone Summary for the MSCE Plan II Program

1. Enter with B.S. degree.
2. Choose a research advisor and a non-thesis research project (first year). If research advisor is not a CE primary faculty member, submit the Mentor Selection Form.
3. Formulate a preliminary Degree Plan with help of the research advisor and submit to the CE Graduate Program (first year). Degree Plan form can be downloaded from [the CE Graduate Program Documents](#) website.
4. Complete 30 semester hours of graduate level course work including core and elective courses, plus 1 term of CE seminar (CE 641).
5. Complete at least 3 hours of non-thesis research (CE 698).
6. Submit Application for Degree to the Graduate School before deadline (beginning of the final semester).
7. Submit a written report based on student's research to the research advisor.
8. Submit final version of the written report and Approval Form signed by the research advisor to the Program Director for signature.
9. Submit the signed Approval Form to the Graduate School.

10. Graduate.

3.7 The Program for the Doctor of Philosophy (PhD)

The Ph.D. degree is the highest degree awarded by academic institutions in the United States. By awarding the PhD degree, a Doctoral Dissertation Committee certifies that an individual is capable of carrying out scholarly independent research. The PhD program is designed to provide resources and mentoring of the student through the formulation and execution of a research question that has a size and importance to merit attention of the scientific and/or engineering discipline. Dissertation results must be published in refereed, reputable scientific or engineering journals. It is expected that dissertation work will result in peer-reviewed publications, preferably written and submitted while a student is still in the doctoral program at UAB.

Enrollment Requirements:

To be considered for admission to the PhD program, an application must be submitted through the UAB Graduate School. The completed application will then be reviewed by the CE graduate program committee; additional details for applying to our graduate program (application checklist) are described here: http://www.uab.edu/engineering/home/images/CCEE/Civil_Engineering.pdf
Details describing admission into a particular graduate program are available using: <https://www.uab.edu/graduate/admissions>.

CE PhD Program:

This is a joint program with the University of Alabama in Huntsville (UAH). A typical student entering the program would already have an undergraduate degree in Civil Engineering from an ABET accredited program. Students with outstanding records in related fields or from a non-accredited engineering program will be considered for admission on conditional standing and must remedy deficiencies in their preparation after the start of their academic program. They may then be granted unconditional standing in the doctoral program.

The program requires 48 credit hours of coursework beyond the baccalaureate level or 24 credit hours of coursework beyond the master's degree, plus a minimum of 24 credit hours of dissertation research. A maximum of 6 graduate credit hours may be taken as independent study or special topics classes. ***Enrollment in the Civil Engineering Graduate Seminar (CE 741) at least once prior to graduation is required.*** A minimum of 6 credit hours must be taken from the UAH campus and may be taken through the Intercampus Interactive Telecommunications (IITS) System at UAB, Distance Learning courses from UAH (DL) or Web-based Instruction from UAH. Doctoral students are also required to take and pass the course GRD 717 (Responsible Conduct on Research) prior to admission to candidacy.

A dissertation committee must be set-up by the doctoral student, involving a minimum of 5 graduate faculty members; at least one faculty member must be from UAH. A comprehensive examination is required of all doctoral candidates. This examination is given after (a) all coursework is completed, and (b) the student's Graduate Committee,

which consists of faculty representatives from both campuses, deems the student to have adequate preparation in the major and minor fields of study. The examination is conducted by the student's Graduate Committee and administered on the resident campus. The examination consists of a written part and an oral part. During the oral portion of the examination, the student also presents his/her dissertation proposal. The Comprehensive Examination may only be taken twice.

If the graduate student successfully passes the comprehensive exam and the dissertation proposal defense, the graduate student will then enter into doctoral candidacy. Once a doctoral candidate, the student must complete a minimum of 24 graduate hours of dissertation research (CE 799). Prior to admission of candidacy, the graduate student can take research hours in the form of non-dissertation hours (CE 798); these non-dissertation research hours cannot be converted from CE 798 into CE 799.

After completing the research (a minimum of 24 hours of dissertation hours), the graduate student must develop their dissertation for review by their dissertation committee. The doctoral candidate must present an oral public defense of their dissertation. If the graduate student successfully defends their dissertation, the student then has ten working days to revise the dissertation and submit in its approved form to the Graduate School.

There are two paths to the Ph.D. Program, starting either with a B.S. or M.S. degree.

3.7.1 Ph.D. Program after a B.S. Degree

Students can be admitted to the Ph.D. Program with a B.S. degree in a field of civil engineering or a closely-related discipline. Students with undergraduate degrees in the physical sciences, life sciences, or mathematics can also be considered for admission.

Students entering the Ph.D. program with a B.S. are required to complete at least 51 semester hours of graduate work including 48 semester hours of course work prior to candidacy, 1 term of CE Seminar (CE 741), and 3 hours of GRD 717 (Responsible Conduct of Research). Additionally, 24 hours of dissertation research over at least two semesters in candidacy is required.

The course work prior to candidacy (48 hours) includes core graduate courses and elective graduate courses. Civil engineering graduate courses are listed on the website: <http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>.

The course work in candidacy includes 24 hours of dissertation research (CE 799) taken over at least two semesters in candidacy. It is emphasized that 76 hours is a minimum requirement and most students complete many more hours than this minimum while earning the Ph.D. degree.

Of the credit coursework requirement, at least 6 credit hours must be taken from the University of Alabama in Huntsville (UAH), due to the PhD program being a joint program between UAB and UAH.

At least three first-author original research articles in peer-reviewed journals based on student's dissertation research are urged for completion of the Ph.D. in the Department of Civil Engineering.

The time limit for completion of Ph.D. degree starting with a B.S. is 6 years. Continuation beyond this time limit requires a petition to the CE Graduate Program Committee (see 3.6).

3.7.2 Ph.D. Program after a M.S. Degree

Students can be admitted to the Ph.D. Program following completion of MS Degree in CE or an equivalent professional degree.

Students entering the Ph.D. program with a M.S. degree are required to complete at least 51 semester hours of graduate work beyond the Master's degree, including 24 hours of course work prior to candidacy, 1 term of CE Seminar (CE 741), and 3 hours of GRD 717 (Responsible Conduct of Research). Additionally, 24 hours of dissertation research over at least two semesters in candidacy is required.

The course work prior to candidacy (28 hours) includes core graduate courses and elective graduate courses. Civil engineering graduate courses are listed in the web-site: <http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>.

Of the credit coursework requirement, at least 6 credit hours must be taken from the University of Alabama in Huntsville (UAH), due to the PhD program being a joint program between UAB and UAH.

The course work in candidacy includes 24 hours of dissertation research (CE 799) taken over at least two semesters in candidacy. It is emphasized that 52 hours for the doctorate is a minimum requirement and most students complete more hours than this minimum while earning the Ph.D. degree (after entering the program with a MS degree).

MS and PhD student credit transfer:

MS and PhD students will get credits if entering the Ph.D. program with a MS, and are required to complete at least 52 semester hours of graduate work, including 24 hours of graduate course work, 1 hour of CE Seminar (CE 741), and 3 hours of GRD 717 (Responsible Conduct of Research). Additionally, 24 hours of dissertation research over at least two semesters in candidacy is required.

Up to a maximum of 12 credit hours of related graduate coursework can be transferred towards the PhD program in Civil Engineering. The request of external credit from outside academic institutions must be supplied by the doctoral student and will be reviewed by the departmental Graduate Program Committee.

Note that all CE PhD students must complete a total of 27 semester hours of approved graduate classes. Thus, if during MS studies you completed more than 24 semester hours of graduate classes in life sciences, biomedical engineering, mathematics and statistics

that were not counted for the M.S. degree, these classes can be appealed to the 27-hour class work requirement for the PhD degree.

A total of three first-author original research articles in peer-reviewed journals based on student's dissertation research, are encouraged for completion of the Ph.D. in the Department of Civil, Construction, and Environmental Engineering. If one article was published as part of the M.S. degree, then two additional articles are encouraged during the Ph.D. degree.

The time limit for completion of Ph.D. degree starting with M.S. degree is 5 years. Continuation beyond this time limit requires a petition to the CE Graduate Program Committee (see Section 3.6).

3.7.3 General Requirements for Ph.D. Students

1. At least one year of residency (two semesters on campus as a full-time student) is required by the Graduate School for all Ph.D. students. It is extremely difficult to obtain the PhD degree unless the program is pursued on a full-time basis; consequently, part-time PhD programs are strongly discouraged in CE. Thus, only full-time students will be admitted for PhD studies. Students who obtain employment after entering the PhD program must receive permission from their Graduate Dissertation Committee and the CE Graduate Committee to continue in the PhD program. Students must show continued progress to remain in the Ph.D. program.
2. All students who are accepted into the Ph.D. program should register for 700 level courses and/or research hours each semester.
3. Note that you are required to submit certain paperwork to the Graduate School at several points in your program. It is very important that you notify the CE Administrative Associate well in advance of your meetings to present dissertation proposals or defenses. The CE Graduate Program Director must also be notified regarding the selection of your Graduate Dissertation Committee members or any time you change any member of your committee.
4. The Graduate School requires that a student must be admitted to candidacy before they can register for CE 799. This means you cannot register for these courses and accrue the required number of dissertation hours until you have successfully completed the Comprehensive Exam and been admitted to candidacy.
5. The Graduate School requires that admission to candidacy take place at least two semesters before graduation. Be admitted to candidacy well in advance of your planned graduation date!
6. Your Graduate Dissertation Committee is a group of experts in your field who are committed to helping you develop your abilities as an independent investigator. You should develop a good working relationship with your committee. Regular communication with your committee members (both formally and informally) is strongly encouraged. You must meet with your committee as a group at least once a year. These meetings may be in the form of a formal update, proposal, or defense.

The purpose of these meetings is to ensure satisfactory progress toward your degree via timely communication among the student and members of the committee. You must notify the CE Administrative Associate of these meetings.

Please see the UAB Graduate Student Handbook for more information.

3.7.4 Ph.D. Milestones

The following are required milestones in the Ph.D. program.

1. Selecting Research Advisor

Each student has to identify a Research Advisor by the end of the first year of graduate program. If this requirement is not fulfilled, the student might be dismissed from the Graduate Program. It is a student's responsibility to choose a Research Advisor. This person must agree to accept you as a student.

If the Research Advisor holds a primary appointment in CE, this person will also serve as the Program Advisor. If the Research Advisor is not a primary CE faculty member, then:

- Complete an [Advisor Selection Form](#) and submit it to the CE Graduate Program Director; and.
- Select a Program Advisor from faculty with a primary appointment in CE. The primary Program Advisor will serve on the dissertation committee and will ensure that the student meets requirements for the Ph.D. degree.

2. Formulating Degree Plan

The preliminary Degree Plan must be formulated with help of the Research Advisor (and Program Advisor, if applicable) by the end of the first year of PhD program. Degree Plan forms as well as Degree Plan Guidelines can be downloaded from [the CE Graduate Program Documents](#). The plan must be sent to the CE Graduate Program Director.

The Degree Plan lists all core and elective courses the student is expected to take for the degree. You should keep a copy of the Degree Plan and use it as a guide for registering for courses. Changes in the Degree Plan will be made in conjunction with the student's Research Advisor and Program Advisor, or in some cases with the student's Graduate Dissertation Committee. Changes to the Degree Plan must be sent to the CE Graduate Program Director and the CE Administrative Associate.

3. Selecting Graduate Dissertation Committee

The Graduate Dissertation Committee must be selected by the end of the first year in the CE Program. Fill out a Graduate Study Committee Letter (web-link: https://www.uab.edu/graduate/images/documents/resources/current_students/forms/Graduate-Study-Committee-Letter-6-2018.pdf) and submit it for approval to the CE Graduate Program Director. After that, submit the Letter to the UAB Graduate School. If there is ever a change in your Dissertation Committee, a Change of Graduate Study Committee form must be filled out and turned in to the Graduate School (see web-link:

<https://www.uab.edu/graduate/images/documents/resources/faculty-program-directors/changecom.pdf>. Graduate Study Committee appointments are approved by the Graduate School Dean, who is an ex officio member of all graduate study committees.

You should have a minimum of five persons on the Dissertation Committee, including the primary Research Advisor. At least one Dissertation Committee member must hold a primary appointment in the CE Department. Two committee members can have appointments outside the CE Department. An external reviewer or Dissertation Committee member outside UAB is recommended. Due to the PhD program being a joint program between UAB and UAH, at least one committee member must be from UAH. Committee members should hold a PhD degree in order to serve on a dissertation committee.

Any committee member who is not already appointed to the UAB graduate faculty has to be appointed as an ad hoc committee member. The procedure for requesting *ad hoc* appointment can be found at:

<https://www.uab.edu/graduate/images/documents/resources/faculty-program-directors/faculty-appointment-form.pdf>. The request should be sent to the contact listed on the form as a single PDF file containing: (i) a letter of nomination from the student's advisor, (ii) a completed Recommendation for Appointment to Graduate Faculty form, and (iii) the applicant's current CV. A copy of the file should be also sent to the CE Graduate Program Director and the CE Administrative Associate.

Faculty members are not required to serve on a student's committee so it is up to a student to contact potential committee members to discuss the proposed research. Most faculty members will agree to serve on a committee if they are not already overcommitted. Each committee member should be able to bring some relevant expertise to guide your research.

An initial meeting with the Graduate Dissertation Committee must be held before the end of the second semester in the Ph.D. Program. The first committee meeting can be fairly informal with the purpose for the student to get to know the committee members, and for the committee members to learn about the area of study for the dissertation, about the project outline and broad goals. The student is not expected to make a detailed or lengthy presentation.

4. Ph.D. Progress Reviews

- Following the initial committee meeting, Ph.D. students must meet with their Dissertation Committee at least once a year, typically by the end of the spring semester. These meetings may be in the form of a formal update, proposal, or defense. The purpose of these meetings is to ensure satisfactory progress toward student's degree via timely communication among the student and members of the Committee. The CE Graduate Program Director must be notified of all committee meetings.
- Starting with the second meeting, download the CE Graduate Student Committee Meeting [Evaluation Form](#) and pass it out to Committee members. At the conclusion of each meeting, ask a member of the Committee to collect the forms and turn them

in to the CE Graduate Program Director and the CE Administrative Associate. The CE Dissertation Committee Chair will forward you the score averages and Dissertation Committee comments.

- Starting with the second meeting, ask the Committee Chair to prepare a written report using the template available online <http://www.uab.edu/engineering/home/graduate-programs/ce-graduate-program-documents/other-forms>. The report should present the Committee consensus regarding progress made and goals met since the previous review, as well as specific goals set for the next review period. The report should be submitted to the CE Graduate Program Director and the CE Administrative Associate no later than 2 weeks after the meeting.
- At the end of each spring semester (including the first year), complete the CE Graduate Student Progress Report using the template available online. Submit the progress report to the CE Graduate Program Director. Starting with the second year, include a copy of the most recent Committee Chair report. The deadline for submission of the student's progress report is the last day of classes of the spring semester.
- In the event that requirements for timely committee meetings and submission of progress reports are not met, such a student will be placed on probation and will have to fulfill these requirements within the next semester.

5. Planning the Dissertation Research

An important part of your training will be to learn by experience how to carry out research. Several of the faculty members can provide documentation on this subject. You will find that each faculty member has a slightly different style in advising students and approaching research problems. You should use this opportunity to observe these different processes, learn as much as you can about the different approaches, and most importantly, to find out which approaches are the most productive for you in carrying out independent research.

6. Comprehensive Examination and Admission to Candidacy

The Comprehensive Examination is a very important step forward in the student's pursuit of the doctorate. By this step, the graduate committee indicates its confidence that the student is capable of completing the proposed research project and the doctoral program. After passing this exam and the dissertation proposal defense, you can be admitted to candidacy.

The Graduate School requires you to be admitted to candidacy at least two semesters before you plan to graduate. Students should take the Comprehensive Exam by the end of year three. The deadline date for the Comprehensive Exam is the last day of classes for the semester BEFORE candidacy.

The Comprehensive Exam consists of written questions supplied by the dissertation committee members related to the student's graduate courses. In addition, the student must prepare a dissertation proposal to be reviewed by the Dissertation Committee. The student must successfully defend the dissertation proposal in a public forum.

The dissertation proposal should include a title page, abstract, hypotheses and specific aims (or goals and objectives), a comprehensive literature survey, a significance section, data from preliminary studies, description of experimental design and methodologies, a discussion of potential problems anticipated and their solution, expected results, a timeline, and a list of references.

No later than two weeks prior to the oral dissertation proposal defense date, you must:

- Send the final draft of your written dissertation proposal to the committee members; and
- Provide the CE Graduate Program Director and the CE Administrative Associate with your proposal title and abstract, a list of committee members (indicating the committee chair), defense date, time and location so that the appropriate announcements can be distributed.

Failure to provide the CE Department with the required information or your committee with the final draft of your proposal in a timely manner will result in cancellation of your scheduled defense so that the 2-week requirement can be met. Faculty members can be very busy, particularly near the end of a term. Therefore, you should start scheduling your defense meeting early, several weeks prior to the planned defense date. Also, be advised that it is often harder to schedule meetings in the summer.

During the oral dissertation proposal defense, the committee will examine the proposal and the student's background for conducting the proposed studies. The oral defense of the proposal is open to the public.

You must download the CE PhD Proposal Evaluation Form (available from the UAB Graduate School) and pass it out to those in attendance. After your proposal presentation, a member of your committee will collect the forms and turn them in to the CE Dissertation Committee Chair who will forward you the score averages and committee comments.

After the student has completed the oral defense of the dissertation proposal, the committee will meet in a closed session, ask the student additional questions and then decide the outcome of the comprehensive examination. Three outcomes are possible: 1) unconditional pass; 2) conditional pass (meaning the student must meet other conditions agreed upon by the committee such as passing specified courses, rewriting portions of the proposal, re-defending the proposal, or re-examination on selected areas, etc.); or 3) fail. If the student fails, the student can undergo one more attempt to defend the dissertation proposal.

After passing the Comprehensive Examination:

- Fill out the Admission to Candidacy Form (web-link: https://www.uab.edu/graduate/images/documents/resources/current_students/forms/admission-to-candidacy/admitphd1.pdf) and;
- Have it signed by members of the Dissertation Committee (type their names on the form as well). Note the additional Research Compliance Verification Form needed if your research involves humans or animals.

- E-mail to the CE Graduate Program Director at least 5 business days before the Graduate School deadline for submission of the Admission to Candidacy Form:
 - a PDF file with your final dissertation proposal; and
 - the Admission to Candidacy Form
- After your proposal is approved, submit the signed Admission to Candidacy Form to the Graduate School by the deadline. You will receive e-mail notification when you have been admitted to candidacy.

7. Publication Requirements

It is the policy of the CE Department that a PhD student is encouraged to write and publish or submit at least **three** original research articles based on the dissertation research in reputed peer-reviewed research journals (two articles if the student continued into Ph.D. after the M.S. degree with one published article). These articles should be based primarily on the student's work and the student is expected to be the first author. Book chapters, review articles, and conference proceedings don't satisfy the publication requirement.

8. Seminar Presentation Requirement

All Ph.D. students are required to present their research progress in a CE Department Seminar. This seminar will typically occur within one or two semesters before graduation. You must contact a CE seminar coordinator to schedule your seminar presentation at the beginning of a semester prior to the semester in which you want to make your presentation to ensure that the seminar schedule is not filled. The CE seminar is attended by faculty, students (graduate and undergraduate), practicing professionals and others from the UAB community.

9. Dissertation Preparation

The dissertation must be prepared and formatted according to the UAB Graduate School's instructions described on the UAB Thesis and Dissertation website. The dissertation is expected to be of high-quality, excel technically, and meet high standards for structure, grammar, and writing style.

The dissertation is presumed to be the original work of the student. If previously published material is used in the dissertation, written permission to use the material must be obtained from the copyright holder (see the UAB Format Manual).

Students who have manuscripts published, accepted or submitted for publication can organize their dissertation in the Preprint/Reprint style (see Section 4.2 and the UAB Thesis and Dissertation website). Please read the UAB Manual regarding the copyright issues.

The dissertation will be submitted to Turnitin for review of originality.

10. Defense of the Dissertation

At the beginning of your final semester, you will need to complete an Application for Degree form and turn it in to the Graduate School.

After you have completed your dissertation research, you will present the results to your Dissertation Committee at a formal presentation open to public. You should attend a few of these events before your time comes.

The date of the defense must comply with the Graduate School deadlines. See web-link: <https://www.uab.edu/graduate/students/current-students/completing-your-degree/application-deadlines>.

No later than two weeks prior to the defense date, you must:

- Send your draft dissertation to the committee members;
- Provide the CE Graduate Program Director and the CE Administrative Associate with the dissertation title and abstract, a list of committee members (indicating the committee chair), the date, time and location of your defense so that the appropriate announcements can be distributed; and
- Fill out the [Request for Dissertation Approval Form](#) through the Graduate School and obtain the Dissertation Approval Form.

Failure to provide the CE Department with the details of your defense or your committee with the final draft of your dissertation at least two weeks in advance of your defense will result in cancellation of your scheduled defense so that the 2-week requirement can be met. Faculty members can be very busy, particularly near the end of a term. Therefore, you should start scheduling your defense meeting early, several weeks prior to the planned defense date. Also, be advised that it is often harder to schedule meetings in the summer.

Committee members are encouraged to read the student's dissertation within one week. If there are significant problems with the document, the student, in consultation with their Research Advisor, may elect to re-schedule the defense.

The dissertation defense must be open to all interested parties and should be widely publicized on the UAB campus. Candidates must be registered for at least three semester hours of graduate work during the term in which the dissertation defense takes place or nine semester hours if the graduate student is receiving a stipend.

After you make a formal presentation, the committee and the attending public will ask you questions. You are expected to be able to field these questions in a knowledgeable, professional and efficient manner. The non-committee members are then asked to leave the room, and your Graduate Thesis Committee will ask you additional questions and then decide whether or not you pass the final examination, the defense of your work.

As part of the overall assessment of the CE Doctoral Program, your committee members and others who attend your doctoral defense will complete the Doctoral Dissertation Defense Evaluation Form (available from the UAB Graduate School) and bring copies to your defense. After your defense, your Research Advisor will collect the forms and deliver them to the CE Graduate Program Director and the CE Administrative Associate. Your dissertation committee chair will forward you the committee comments. The results of this evaluation are used by the CE Program to assess whether we are meeting Program Goals as required by the Southern Association of Colleges and Schools (SACS) to maintain

program accreditation. The results of this evaluation are not used to determine whether the student passed the Doctoral Dissertation defense.

11. Dissertation Defense Dissent

If one or more committee members don't approve the dissertation defense, the following policy outlined in the UAB Graduate Student Handbook is followed:

“f in the opinion of one or more of the five members of the dissertation committee, the student has failed the dissertation defense, there is no consensus to pass. The chair of the committee shall advise the student that the dissertation fails to meet the requirements of the program. The chair shall notify the student in writing about the reason(s) for failure. If the student resubmits or submits a revised dissertation for consideration by his/her graduate program at least three members of the new examining committee shall be drawn from the original committee. If the revised dissertation fails to meet the requirements of the program, the student shall be dismissed from the graduate program.

12. Submission of the Dissertation

1. One week (5 business days) before thesis submission to the Graduate School (see below), send by e-mail the following information to the CE Graduate Program Director and the CE Administrative Associate for review and approval:
 - the date of the public defense;
 - full references of 3 encouraged published or submitted original peer-reviewed journal articles on which the dissertation is based;
 - a reference to the CE seminar where dissertation research was presented;
 - the final version of the dissertation in a PDF file;
 - the Dissertation Approval Form signed by each committee member; and
 - your CV, which includes all publications and conference presentations
2. No later than two weeks (10 business days) following the public defense, the final version of the dissertation must be submitted to the Graduate School online as a single PDF file. In addition, submit the Dissertation Approval Form signed by each committee member and the Program Director, the UAB Publication Agreement, Survey of Earned Doctorates, and the Graduate School Exit Survey. Follow the Graduate School requirements on dissertation submission. Read and complete the Thesis/Dissertation Submission Checklist.

An extension can be requested from the Graduate School if the defense was held well before the semester deadline for final defense and if the dissertation committee feels additional time is needed to complete the dissertation. Extensions cannot be granted past the semester submission deadline (10 business days after the final defense deadline).

13. Graduation and Award of the PhD

Attend the graduation ceremony and experience the hooding ceremony for the Ph.D. candidate. You will be "hooded" by your Research Advisor. This is a time-honored ceremony, and you have worked hard to earn this distinction for yourself. Take the time to enjoy one of the first fruits of your labor.

3.7.5 Milestone Summary for PhD Program

1. Enter with B.S. or MS degree.
2. Choose Research Advisor and Program Advisor (by the end of the first year). Fill out Mentor Selection Form if Research Advisor is not a CE primary faculty member.
3. Formulate preliminary Degree Plan with your Research and Program Advisors and submit to the CE Graduate Program Director (first year).
4. Complete minimum of 52 semester hours (if entering with B.S.) or 28 hours (if entering with MS) of graduate course work prior to candidacy. The course work includes 24 hours of core and elective graduate courses, 1 term of CE Seminar (CE 741), and 3 hours of GRD 717 (Responsible Conduct of Research).
5. Choose Dissertation Committee (end of the first year). Fill out Graduate Study Committee Letter and submit it to the Graduate School
6. Meet with Dissertation Committee (at least once a year) to discuss your research progress and to revise your Degree Plan as needed. At each meeting, have committee members complete the Graduate Student Committee Meeting Evaluation Form. Ask the Committee Chair to submit the Chair report no later than 2 weeks after the meeting. Submit your own progress report before the last day of classes of spring semester.
7. Complete Comprehensive Exam and Dissertation Proposal Defense and be admitted to Candidacy at least two semesters before your planned graduation. Submit written draft dissertation proposal to Dissertation Committee two weeks prior to the oral defense. Follow the Graduate School deadline for the Comprehensive Exam.
8. Complete 24 hours of dissertation research (CE 799) over at least two semesters in candidacy. CE non-dissertation hours (CE 798) do not count towards the 24 hour dissertation research (CE 799) requirement.
9. Present research progress in CE Department Seminar. Schedule your seminar presentation at the beginning of the preceding semester.
10. Publish or submit at least three (after B.S.) or two (after MS with published paper) first-author original research articles in peer-reviewed journals are encouraged.
11. Schedule dissertation defense. Comply with the Graduate School deadline for that semester.
12. Two weeks before the defense: (i) present the Dissertation Committee with a copy of your draft dissertation; (ii) notify the CE Program Administrator; and (iii) submit the online Request for Dissertation Approval Form.
13. Present and defend your dissertation in a well-publicized, public Final Examination before the Graduate School deadline. Bring copies of the Doctoral Dissertation Defense Evaluation Form to the defense.

14. Submit the committee-approved dissertation, CV, references to the thesis-related articles and CE seminar presentation to the CE Graduate Program Director and CE Department Chair for review no later than one week (5 business days) following the public defense. After the dissertation approval, submit the Dissertation Approval Form signed by each committee member to the CE Graduate Program Director for signature.
15. Submit the completed, final version of the dissertation approved by the committee and the CE Graduate Program Director to the Graduate School no later than two weeks (10 business days) following the public defense. Also submit online the UAB Publication Agreement.
16. Graduate

3.9 Civil Engineering Certificate Programs

The Department of Civil, Construction, and Environmental Engineering offers five Category A Certificates (requirements are listed below) in the following areas:

- [Certificate in Construction Engineering Management](#)
- [Certificate in Environmental Engineering](#)
- [Certificate in Structural Engineering](#)
- [Certificate in Sustainable Engineering](#)
- [Certificate in Transportation Engineering](#)

The requirements are as follows:

- Students must be admitted to the Department as either undergraduate or graduate students in Civil, Construction and Environmental Engineering.
- Certificates require a minimum of 15 semester hours consisting of one required undergraduate course (which will also count toward the BSCE degree at UAB) and four graduate level elective courses in the area of specialization).
- Graduate level elective courses taken may be applied to the certificate as well as a MSCE degree.
 - One course, up to three semester hours, may be transferred from another institution. This may be the required course or one of the graduate level courses.
 - Only one course listed with an asterisk (*) may be applied to a certificate. As an example, for the transportation certificate, students may apply either CE 649 Engineering Liability or CE 658 Engineering Management.
 - Courses taken from UA and UAH by IITS may be applied to certificates.
 - Elective course may be taken at the 500, 600, or 700 level.

Certificate in Construction Engineering Management

- Required course (3 semester hours) CE 497 Construction Project Management or equivalent.
- Select electives from the following list to earn 12 semester hours (Refer to [UAB Graduate Catalogue](#) for course descriptions)

CE 600 Sustainable Construction

CE 601 Construction Methods

CE 603 Construction Accounting and Financial Management

CE 609 Advanced Topics in Engineering Law

CE 610 The Engineered Environment

CE 604 International Construction Contracts and Law	CE 631 Environmental Law
CE 605 Project Management	CE 649 Engineering Liability
CE 607 Engineering Entrepreneurship	CE 658 Engineering Management
	CE 691 Civil Engineering Capstone

Certificate in Environmental Engineering

- Required course (3 semester hours): CE 236 Introduction to Environmental Engineering or equivalent:
 - Select electives from the following list to earn 12 semester hours
- | | |
|---|--|
| CE 530 Water Supply and Drainage Design | CE 640 Wastewater Treatment Engineering |
| CE 533 Solid and Hazardous Wastes | CE 644 Civil Engineering Analysis II |
| CE 534 Air Quality Modeling and Monitoring | CE 649 Engineering Liability* |
| CE 537 Environmental Experimental Design and Field Sampling | CE 658 Engineering Management* |
| CE 580 Introduction to Water and Wastewater Treatment | CE 681 Environmental Chemistry |
| CE 631 Environmental Law* | CE 682 Water Treatment Engineering |
| CE 632 Industrial Water and Wastewater Treatment | CE 683 Water and Wastewater Treatment Unit Processes |
| CE 636 Stormwater Pollution Management | CE 685 Engineering Hydrology |
| CE 638 Water and Wastewater Chemistry | CE 686 Engineering Hydrogeology |
| CE 639 Sediment Sources and Controls | CE 687 Stormwater Detention Pond Design |

*Only one course listed with an asterisk may be applied to this certificate. (Refer to [UAB Graduate Catalog](#) for course descriptions.)

Certificate in Structural Engineering

- Required course (3 semester hours) CE 360 Structural Analysis or equivalent.
- Select electives from the following list to earn 12 semester hours

Structural Analysis Electives (Minimum 3 hours)

CE 516 Mechanical Vibrations	CE 615 Theory of Elastic Stability
CE 520 Advanced Mechanics	CE 617 Theory of Plates and Shells
CE 561 Introduction to the Finite Element Method	CE 660 Structural Mechanics
CE 564 Structural Dynamics	CE 662 Advanced Structural Analysis
CE 612 Theory of Elasticity	CE 663 Finite Element Methods

Structural Design Electives (Minimum 3 hours)

CE 526 Foundation Engineering	CE 567 Wind and Seismic Loads
CE 553 Design of Wood Structures	CE 568 Bridge Engineering
CE 554 Design of Masonry Structures	CE 650 Advanced Structural Steel Design
CE 556 Prestressed Concrete Design	CE 655 Advanced Reinforced Concrete

Other Electives (Minimum 3 hours)

CE 557 Concrete Technology	CE 658 Engineering Management*
CE 649 Engineering Liability*	

*Only one course listed with an asterisk may be applied to this certificate. (Refer to UAB Graduate Catalog for course descriptions.)

Certificate in Sustainable Engineering

- Required course (3 semester hours) CE 497 Construction Project Management or equivalent.
- Select electives from the following list to earn 12 semester hours (Refer to [UAB Graduate catalogue](#) for course descriptions)

Certificate in Transportation Engineering

- Required course (3 semester hours) CE 345 Transportation Engineering or equivalent.
 - Select electives from the following list to earn 12 semester hours
- | | |
|--|--|
| CE 542 Highway Materials and Construction | CE 648 Urban and Transportation Planning |
| CE 543 Pavement Design and Construction | |
| CE 622 Traffic Flow Theory | CE 649 Engineering Liability* |
| CE 623 Non-Motorized Transportation Design and Planning | CE 658 Engineering Management* |
| CE 624 Simulation Models for Transportation Applications | CE 690 Green Infrastructure and Transportation |
| CE 625 Intelligent Transportation Systems | CE 690 Sustainable Design and Rating Systems |
| CE 646 Traffic Engineering Operation | CE 690 Traffic Safety |

*Only one course listed with an asterisk may be applied to this certificate. (Refer to UAB Graduate Catalog for course descriptions).

Additional graduate courses offered at UAH and UA may be approved on a course by course basis

4 Additional Policies and Guidelines

4.1 Guidelines on Dissertation and Thesis Research

Students frequently ask what constitutes a dissertation or a thesis. There is no direct answer to this question; however the following suggestions can be used as a guideline.

PhD dissertation:

- provides a substantial increment of knowledge or basic understanding;
- has publishable results in reputable, refereed journals;
- provides a significant and novel device, instrument, analysis, or process in civil engineering;
- contains significant engineering content that brings a unique approach to the solution of the problem that is not available from other disciplines;
- contains a suitable increment of originality and uniqueness; and
- independent, free-thinking approach by the student.
- NOTE: Quantity of work does not substitute for the above requirements!

MS thesis:

- has components of the above, but can be more closely directed by the faculty member.

4.2 Reprint/preprint Format of Dissertation and Thesis

A dissertation may either consist of a number of accepted or published papers that are bound together with an introductory chapter and a conclusion chapter or a standard dissertation format, containing an introduction, background, previous related research, problem statement, research goals and objectives, research tasks, research results, summary, conclusions, recommendations for future work, reference bibliography, and related appendices.

The introductory chapter should contain a comprehensive literature review and it should describe the relationship among included papers and projects. The journals selected for manuscript submission must include some civil engineering or engineering journals, they should be respected in the field of research, and they should be truly peer-reviewed by the blind referee process. The Dissertation Committee reserves the right to require additional documentation in the dissertation or thesis document in excess of the material presented in the papers. The Dissertation Committee also has the responsibility of judging the quality and suitability of the journals chosen for manuscript submission. The graduate student should seek input from the Dissertation Committee for suggestions of appropriate publication sources (journals).

The Committee will use particular care in reviewing material in manuscripts that have not been accepted for publication, but are included as part of the dissertation. Finally, the format of the dissertation must meet the requirements of the Graduate School found on [the Thesis and Dissertation](#) website. .

For the reprint/preprint format for the MS thesis, all of the above applies, except at least one manuscript is recommended to have been submitted at the time of thesis defense.

4.3 Thesis and Dissertation Development, Edit and Review Policy

All students are expected to submit a high-quality thesis or dissertation available to the public that excels technically and meets high standards for structure, grammar, and writing style that conform to the UAB Graduate School requirements found on [the Thesis and Dissertation](#) website. In the event that the thesis or dissertation does not meet the quality standards established by the CE Department and Graduate School, the mentor or

Graduate Program Director may require review by an external editor. The expense for editing is the responsibility of the student, although the mentor may support it from research funds at her or his discretion. The following policies were formulated by the School of Engineering Graduate Program Directors and Department Chairs to ensure that each thesis or dissertation submitted meets Graduate School and School of Engineering requirements for technical excellence and readability.

1. The student works under the direction of the Research Advisor to develop the thesis or dissertation. When the Research Advisor is satisfied with the content, the thesis or dissertation may require a 'heavy' edit by an outside reader.
2. The student brings the 'edited' copy of the thesis or dissertation to the Research Advisor and obtains the Advisors approval to distribute the thesis to the Thesis or Dissertation Committee.
3. The Committee members review the thesis or dissertation and provide feedback to the student on technical content, style, and readability (grammar, etc.).
4. After the defense the student works under the direction of the Research Advisor to revise the thesis or dissertation as necessary. The Committee members do not sign to approve the thesis or dissertation until they have reviewed it and are satisfied that all needed corrections have been made.
5. The student forwards the revised thesis or dissertation to the departmental Graduate Program Director. The CE Graduate Program Director reviews the final version of the Dissertation to ensure that it excels technically and meets high standards for structure, grammar, and writing style. The departmental Graduate Program Director either signs to approve or meets with the student to discuss any needed corrections.

4.4 Laboratory Safety

The School of Engineering and Department of Civil, Construction, and Environmental Engineering are strongly committed to laboratory safety. All incoming graduate students are required to complete safety training prior to beginning work in their respective laboratory. Students must read the CE Safety Manual and submit a completed signed copy to the CE Safety Officer, Mr. Richard Hawkins (rhawkins@uab.edu) prior to being allowed to use laboratory facilities. General safety information is also available at the UAB [Occupational Health and Safety](#) (OHS) website.

The following rules apply to all CE Laboratory spaces:

- All graduate students must attend the School of Engineering Safety Seminar every year. The seminar is held in the fall semester. You will be notified about the time and location of the seminar via e-mail well in advance of the seminar.
- Safety glasses must be worn at all times unless other eye protection is in use (such as a hood sash, face shield, glove box, etc.).
- Additional personal protective equipment (gloves, lab coats, face shields, etc.) should be used as appropriate for the task being performed.
- Shorts or short skirts are prohibited, garments should reach below the knee. Loose clothing is not recommended particularly in areas with moving equipment.

- No food or drink is allowed in any laboratory. No eating, drinking, chewing gum or applying makeup.
- Footwear must be of sturdy construction. It must completely enclose the toes.
- Do not run, jump, throw objects or otherwise engage in inappropriate behavior.
- Desk areas within a lab space are considered part of the lab for all rules unless separated from the lab by a partition.
- Laboratory doors should be closed at all times.

Most students will be required to take additional training depending on their area of research and the type of research performed by others in the same lab space. Use of chemicals, animals, radioactive agents, biologics, human blood or organs and human subjects all require additional training available on the OHS website.

4.5 Animal Subjects and Human Subjects

If the graduate research involves use of animal subjects, approval from IACUC (Institutional Animal Care and Use Committee) must be obtained before admission to candidacy and must be kept current until the research is completed. For more information regarding IACUC requirements, visit the website:

<http://www.uab.edu/research/administration/offices/IACUC/Pages/default.aspx>.

If your thesis or dissertation project involves human subjects, contact the office of the Institutional [Review Board for Human Use](#) early in the project to ensure compliance. Approval from IRB must be obtained before admission to candidacy and must be kept current until the research is completed. The student's name must appear on all IRB Approval Forms.

4.6 Purchasing, Pay and Other Financial Considerations

Purchases

The University has very specific procedures for purchasing and procurement, and is required to meet numerous state and federal standards. For that reason, there are procedures in place for obtaining bids from vendors, entering into contracts, tracking equipment, surplus warehousing, transfer, and disposal of equipment, etc.

In most instances you will use a purchase order to an approved vendor, or a check request issued in advance of the purchase, to secure supplies, equipment, etc. There are procedures in place for reimbursement of expenses when there is a need for the immediate purchase of items using personal funds. Non-employees, however, are not allowed to make purchases using personal funds and will not be reimbursed! You will best obtain needed items with a purchase order, so plan ahead. The process requires appropriate account information and approvals and takes time. Do not wait until the last minute to place orders! There are also specific requirements for travel for the purpose of training and development. Again, the process must be approved in advance, budgeted and takes time, so plan ahead. You can get information about making purchases from your Program Advisor or Research Advisor, and from CE administrative staff.

Pay Guidelines

Students in the CE Graduate Program are funded in a number of ways and from a number of sources. You should schedule a meeting with the CE Financial Officer and the departmental administrative associate to complete the required paperwork to be set up for pay and direct deposit. The process for international students requires additional steps, and should be started as soon as you arrive in the Birmingham area. Not allowing enough time to process the paperwork may result in your pay being delayed by a month or more.

As a Trainee receiving a stipend or an assistant receiving a salary, you will need to complete the appropriate tax forms in ORACLE Self-Service. If you need help, you should seek assistance from the departmental Financial Officer. International students receiving a salary should schedule an appointment with Daizy Walia in International Scholars and Student Services (ISSS) for assistance with required tax forms.

Additionally, UAB Payroll Services can assist you (934-4523; payhelp2@uab.edu; <http://financialaffairs.uab.edu/content.asp?id=144343>).

Any student who does not complete the required forms will be taxed at the highest rate.

Tuition payment

Students who receive a tuition scholarship will have their tuition and fees paid by the CE Financial Officer. If any changes are made in your schedule after you have received notification that your tuition has been paid, you should contact the departmental Financial Officer to make sure there are no changes in your total tuition bill. Late payment of tuition and fees may result in your being dropped from classes and/or charged late fees. The University does not waive late fees, and CE will not be responsible for late fees if you do not notify the CE staff of any changes in a timely manner.

4.7 Miscellaneous Policies

Registering for courses

Students must complete the courses in the Degree Plan in a timely manner. To register for courses, you will receive a Registration Access Code (RAC) number from the CE administrative associate. The RAC number is sent to the student via e-mail. Please keep this RAC number until the semester is finished. The student should follow the procedures for registration, and register for each term during the dates specified in the UAB Class Schedule.

Students can register their research hours online. If you don't see the advisor listed for research hours, contact the CE Administrative Associate to add the advisor information to the system.

Computer facilities and computer use policies

Information about computer use at UAB can be found by visiting the [Information Technology](#) web page. This site contains numerous policies addressing security, use of cellular phones, software, Internet use, disclosure and confidentiality. Students should pay particular attention to the Acceptable Use Policy.

Keys, Blazer ID, key card access to buildings and labs. Key return policy.

Your **UAB OneCard** is a valuable accessory at UAB, so carry it at all times. It guarantees free or reduced admission charges to special events, allows you to check out books from the UAB libraries, and is required for access to the Campus Recreation Center. You will be given instructions during orientation to set your UAB OneCard, keys, and key card access to buildings and labs.

Keys and key cards are issued to a particular person, so it is important for you to be responsible for any issued to you. The key card access system monitors and records all card transactions presented to the card readers on the UAB complex. Keys and key cards must be returned when you no longer need that particular key or key card access, or when you leave the university. Duplication is not allowed. If lost, you will be charged for replacement of lost keys and key cards. For additional information, see [the Physical Security website](#). For questions, please see the CE Program Administrator.

Oracle Self-Service is a website that allows you to update your Personal Information, Direct Deposit Information, tax forms, home address, etc. You may find more information on Oracle at: <http://www.uab.edu/adminsys/>.

A **BlazerID** is a computer login name that is used across campus. For procedures for getting a BlazerID go to [Blazer ID Central](#).

Parking information for students is found at:

<http://www.uab.edu/parking/parking/students>. Parking is assigned on a first-come, first-serve basis. After-hours parking is available for certain areas. After-hours is defined as 5 p.m. – 6 a.m. weekdays, and all day on weekends. This access is free for any graduate student with a deck permit. For those in commuter or resident student facilities, a \$30 per semester charge applies.

Graduate students also have access to the UAB Escort Service (5 p.m. – dawn) and Campus Ride (<http://www.uab.edu/parking/campus-ride-a-escort>).

Appeals and Grievances

The Graduate School Appeals Board policy is found on the [UAB Graduate Catalog](#).

Appendices

Appendix A: Prerequisite Courses Required in the CE Specialization Programs

Required Courses for Specialization in Environmental Engineering

In addition to the MSCE program requirements, the following undergraduate classes (plus all associated prerequisites) are generally required of all MSCE students specializing in environmental engineering:

CE 236	Environmental Engineering
CE 337	Hydraulics
CE 344	Civil Engineering Analysis
CE 430	Water Supply and Drainage Design
or	
CE 480	Water and Wastewater Treatment

Required Courses for Specialization in Structural Engineering/Structural Mechanics

In addition to the MSCE program requirements, the following undergraduate classes (plus all associated prerequisites) are generally required of all MSCE students specializing in structural engineering/structural mechanics:

CE 332	Soil Engineering
CE 344	Civil Engineering Analysis
CE 360	Structural Analysis
CE 450	Structural Steel Design
CE 455	Reinforced Concrete Design

Required Courses for Specialization in Construction Engineering Management

In addition to the MSCE program requirements, the following undergraduate classes (plus all associated prerequisites) are generally required of all MSCE students specializing in construction management.

CE 395	Engineering Economics
CE 497	Construction Engineering Management

Required Courses for Specialization in Transportation Engineering

In addition to the MSCE program requirements, the following undergraduate classes (plus all associated prerequisites) are generally required of all MSCE students specializing in transportation engineering.

CE 344	Civil Engineering Analysis
CE 345	Transportation Engineering

Appendix B: Courses Acceptable for CE Degree Plans

The Degree Plan lists the course work a student intends to take to fulfill the degree requirements. Courses must provide advanced training in interdisciplinary skills necessary to address multidisciplinary biomedical engineering research topics. Courses should complement and augment skills developed in thesis research. Elective courses should extend and integrate the fundamental knowledge to address interdisciplinary civil engineering problems. The core courses and the number of credit hours required for completion of each degree are provided in respective sections above.

A list of civil engineering graduate courses (at least 500 level or higher) is listed in the website:

<http://catalog.uab.edu/graduate/schoolofengineering/civilconstructionandenvironmental/civilengineering/#courseinventory>. If desired courses are not on this list, a brief memorandum describing the rationale for the selected courses signed by the research advisor must accompany the Degree Plan. The student should indicate how the selected courses support the student's research and academic goals. The Graduate Program Committee will evaluate the proposed course work with regard to depth, breadth, relevance to research objectives, and academic rigor.

The course work for the M.S. and Ph.D. degree must be at the graduate level (e.g. 500 level or above). UAB does not allow courses below the 500 level for either M.S. or Ph.D. degrees. Except in unusual circumstances, All courses appearing on the Degree Plan must be taken for a letter grade.

A grade of 'C' or better must be earned in each course. Students must maintain an overall GPA of 3.0 to remain in good academic standing in the Civil Engineering Department.

In accordance with UBA policy on transfer of credit, previously earned graduate credit (up to a maximum of 12 graduate credit hours) that has not been applied toward another degree (either at UAB or elsewhere) is eligible for transfer into the student's current degree program. Read the UAB Graduate Student Handbook for details on this policy.

Under some circumstances, courses taken for a completed M.S. degree (at UAB or another institution) may be approved by the Graduate Program Committee for the Ph.D. Degree Plan. These courses must be at the graduate level and substantially similar in breadth, depth and rigor to courses offered at UAB. The student must have earned a grade of 'B' or higher in each course. The student should submit a course syllabus or detailed course description and an academic transcript for each graduate-level transfer course appearing on the Ph.D. Degree Plan.

Appendix C: UAB Graduate School Fellowship Incentive Program and Sources of Graduate Student Fellowships

From the UAB Graduate School website (<https://www.uab.edu/graduate/incentive-program-for-individual-fellowship-applications>):

Rationale and Goal: Many UAB graduate students would be competitive for individual fellowships, but many who are eligible to apply for a fellowship do not apply. The Graduate School has established an incentive plan designed to encourage submission of applications from students enrolled in disciplines in which individual fellowships are available.

Plan Description:

1. The Graduate School will provide a monetary incentive for students to APPLY FOR individual fellowships funded by extramural agencies or foundations. Graduate students who apply for an individual fellowship (e.g., NSF Individual, NIH NRSA, or other) will be awarded \$500 from the Graduate School through the UAB Financial Aid office as a reward for submitting the application. To qualify for this award, the application must be reviewed prior to submission by the student's program director or mentor, who must provide a written verification to the Graduate School that the application is considered to be competitive. After submission of the grant application, the student will provide a PDF of the application to the Graduate School and the incentive reward will be authorized when the student provides evidence that the application has been received by the granting agency. **The \$500 award is given for first submissions only.**
2. If a student's application is funded, the student will receive an additional financial reward.
 - For an NIH NRSA or other grant that provides less than the base stipend currently being offered to all students in that student's program, the student will receive supplementation of the fellowship stipend to an amount equal to the base stipend plus \$1,500 per year for the term that the grant is funded. The supplemental funding will be provided by the Graduate School. If the stipend amount from the external award is equal to or greater than the equivalent of \$1,500 more than the current base stipend in the student's program, the student is entitled to receive the full amount of the stipend. The form used to apply for provision of the supplement from Graduate School resources can be downloaded from the Graduate School web site at: <http://www.uab.edu/graduate/images/acrobat/forms/funding/gsincentive.pdf>
 - If a student receives an NSF predoctoral fellowship, he/she will receive no supplement to his/her stipend during the three year term of the NSF fellowship. This stipulation is necessary because the NSF stipend of \$34,000 exceeds the current maximum stipend recommended by the Graduate School. After the NSF grant terminates, the student's mentor or department will be responsible for providing the current base stipend in that student's program and the Graduate School will provide the \$1,500 supplement until the student completes his/her degree requirements.

Eligibility: This plan is available to students in any graduate program discipline in which extramural individual fellowship funding is available (including students in CAS and the

School of Engineering, beginning July 1, 2016). To be eligible for both the reward for submitting the application and the supplement to a student's stipend, the award must provide more than half the current base stipend in the student's program. Applications for and receipt of travel and other small grants will not be eligible for an incentive award under this program.

Fellowship Awards in the Civil Engineering

GENERAL FUNDING AND FELLOWSHIP PREPARATION RESOURCES

ScienceCareers.Org

[UAB Office of Sponsored Programs](#) – UAB processing and forms

[UAB Financial Affairs](#) – Tax information regarding Fellowships and Scholarships

FEDERAL FUNDING SOURCES

National Science Foundation:

[NSF Graduate Research Fellowship Program](#)

[NSF Doctoral Dissertation Improvement Grants](#)

[Specialized Information for Graduate Students](#)

Department of Defense: (<http://www.defense.gov/>)

Department of Homeland Security: (<http://www.dhs.gov/>)

NOAA (National Oceanic and Atmospheric Administration):

https://coast.noaa.gov/fellowship/grad_opportunities.html

DOE (U.S. Department of Energy) Office of Science Graduate Fellowship (SCGF) Program:

<https://science.energy.gov/wdts/scgf/>

DOE (U.S. Department of Energy) ORISE (Oak Ridge Institute for Science and Education) Program:

<https://orise.orau.gov/doescholars/>

USEPA (U.S. Environmental Protection Agency):

<https://www.epa.gov/research-fellowships>

<https://www.epa.gov/careers/fellowships-scholarships-and-post-doctoral-opportunities>

USGS (U.S. Geological Survey):

<https://www2.usgs.gov/humancapital/sw/studentandrecentgrads.html>

<https://powellcenter.usgs.gov/national-science-foundation-graduate-research-internship-program-grip>

PRIVATE ORGANIZATION SOURCES

[American Association of University Women](#)*

* *Denotes awards that are not restricted by US citizenship eligibility requirement*

UAB FUNDING SOURCES

The Graduate School resources guide (<http://www.uab.edu/graduate/area-3/current-students/90-funding-information-for-graduate-students>)

PROFESSIONAL SOCIETY SOURCES

[The National Academies: Internship Program in Science Policy](#)

Air and Waste Management Association: <https://www.awma.org/scholarships>

Appendix D: Plagiarism

From <http://main.uab.edu/Sites/gradschool/students/orientation/7575/>

What is plagiarism?

Using other people's work (in a variety of forms) in part or in whole and representing it as your own.

What is documentation?

A systematic way of indicating the original source of the material or information used in your own work.

Examples of two types of documentation format:

1. Author-Date:

In-text citation

- According to Linden (1986). . . .
- Kanzi, a bilingual bonobo, has been instrumental in renewing interest in animal intelligence (Linden, 1986).

Reference list:

Linden, E. (1986). *Silent partners: The legacy of the ape language experiments*. New York: Times.

2. Citation-Sequence:

In-text citation:

- According to Linden¹¹
- Kanzi, a bilingual bonobo, has been instrumental in renewing interest in animal intelligence.¹¹

Reference list:

11. Linden E. 1986. *The legacy of the ape language experiments*. New York: Times.

What format style should be used for documentation?

- A style presented in a style manual commonly used by professionals in your discipline
- A style used by journals in your field
- A style presented in a style guide published by a professional organization in your field

What are style manuals?

Style manuals are handbooks that give reference, layout format, and, in most cases, grammar and punctuation rules.

Three of the most commonly used style guides are

- *Publication Manual of the American Psychological Association (APA)*
- *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers (now the Council of Science Editors--formerly Council of Biology Editors)*
- *American Medical Association Manual of Style*

If I'm using a journal's style format, where do I find that?

Academic journals have a "Guide for Authors" or "Instructions for Authors," available

either in the print journal or on their web site. You also should look at articles in the most recent issues of the journal.

What needs to be documented?

- Another person's idea or opinion
- Anything published, including web materials
- Your own published work
- Interpretations
- Drawings or photographs
- Charts and graphs
- Lab results
- Lecture notes
- Professional presentations
- Techniques and procedures
- Surveys and test instruments

What does *not* need to be documented?

Common knowledge

What is “common knowledge”?

- “Bare-bone” facts from a dictionary or other basic reference books
- Dates, titles of principal works or studies, proper names
- Scientific and technical terms
- Example of common knowledge:
 “Watson and Crick proposed a spiral model of DNA, the double helix.”

How can you effectively and appropriately use secondary source material in your writing?

- Direct quotation
- Copies the exact words of a source
- Is used sparingly in graduate-level writing
- Paraphrase
- Restates source information in your own words
- Assimilates research into a single style of writing to avoid awkward sentence structure, choppiness, or both
- Summary
- Condenses an entire article, chapter, book, or web source
- Is much shorter than the original
- Re-presentation
- Draws on original source material to create tables.

How can I effectively (and ethically) paraphrase?

1. Read *and understand* the original source.
2. Use a highlighter pen *only* if you are going to write notes also.
3. Write the bibliographic information down carefully and completely.

4. Make notes using words, phrases, or a short string of words. Do NOT copy full sentences or long sections of text.
5. Leave the material for a period of time, at the very least several hours but preferably several days.
6. When you write *your* paper, use only the notes that you've taken.
7. *Never* write your paper while looking directly at the original text.
8. *Absolutely never* write your paper with photocopies of original texts in which sentences have been highlighted spread around you.
9. Place appropriate citations in your text to indicate sources.
10. After writing a complete section such as the background, verify details included in your paper by using the original text.
11. Add details or make other adjustments if what you have written misrepresents the original text.

Be prepared—Plan ahead!

Effective (and ethical) writing takes time.