**Civil and Environmental Engineering** 

College of Engineering and Computing

UNIVERSITY OF SOUTH CAROLINA

# **GRADUATE STUDENT HANDBOOK**

# MASTER OF ENGINEERING (M.E.) MASTER OF SCIENCE (M.S.)

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## 1. GENERAL

The following guidelines are intended to complement the online <u>Graduate Studies</u> <u>Bulletin</u> in assisting current and prospective graduate students with planning for and pursuing a <u>M.E.</u> or <u>M.S.</u> degree in Civil Engineering at the University of South Carolina (USC). These guidelines neither replace nor supersede any requirements set forth in the Graduate Studies Bulletin.

Graduate students are responsible for familiarizing with the rules and policies in effect at the time of first enrollment in the M.E. or M.S. program, satisfying all requirements, and discussing with their academic advisor regarding scheduling the examinations and submitting the documentation, in accordance with the Graduate School and Department of Civil and Environmental Engineering (ECIV) regulations.

In these guidelines, all italicized text denotes information on policies, regulations and requirements set forth by the USC Graduate School.

Students enrolled in a M.E. or M.S. degree program have six years from the first term of enrollment in which to complete the degree (courses become invalid after six years).

# 1.1 Major components of ECIV M.E. and M.S. degree programs

The 30 semester-hour ECIV M.E. degree program is designed to give students focused training in the practice of civil and environmental engineering. Major components include:

- A comprehensive assessment: a written career plan OR written summary of research in civil engineering
- 30 credit hours of graduate-level coursework, including at least 15 credit hours at the 700-level or above
- Up to 12 credit hours of coursework may be taken in areas of interest outside ECIV
- At least 12 credit hours of graduate-level program area core courses

The M.E. degree program in Civil Engineering will prepare students to tackle difficult projects and to develop designs, solve problems and make impactful decisions.

The 30 semester-hour ECIV M.S. degree program includes a thesis and serves civil and environmental engineers who wish to obtain advanced studies to enhance their qualifications within the industry. Major components include:

- Research resulting in a thesis, thesis defense, and 6 hours of thesis credit
- A comprehensive exam
- 24 credit hours of graduate-level coursework, at least half of which is at the 700-level or above
- Up to 12 credit hours of coursework may be taken in areas of interest outside ECIV
- At least 12 credit hours of graduate-level program area <u>core courses</u>

Graduates of the M.S. program will develop the technical, leadership, communication, problem-solving and organization skills required for professional advancement and life-long learning.

# **1.2 Additional requirements**

The following requirements also apply:

- All graduate students are required to attend <u>ECIV 798 Seminar in Civil and</u> <u>Environmental Engineering</u> (0 credit hours) each semester in which they are enrolled as full-time students. Full-time students are those supported through a Graduate Research Assistantship and/or enrolled in 9 or more credit hours in a given semester. All graduate students are encouraged to enroll in ECIV 798.
- A maximum of 6 credit hours of ECIV 797 Research in Civil Engineering can be used toward the M.E. or M.S. program of study beyond the baccalaureate degree.
- Enrollment in ECIV 790 (Special Topics) courses can be used as an alternate for a prescribed core course requirement, with approval of your faculty advisor and the graduate director. Final approval for use as degree credits lies with the Graduate School.
- The ECIV M.E. and M.S. degree programs do not have a foreign language requirement.
- M.E. and M.S. students must maintain a <u>minimum 3.0 GPA</u> on coursework required for the degree program. Failure to fulfill this requirement may result in academic probation and/or suspension from the program.
- M.S. students must perform <u>research and other duties in accordance with and as</u> <u>assigned by their respective faculty advisors</u>. Each semester, faculty advisors evaluate the performance in the program of students supported through Graduate Research Assistantships; failure to meet the requirements and expected research performance can result in the termination of the Graduate Research Assistantship.

#### **1.3 Areas of specialization**

Civil engineering is a broad and interdisciplinary field. The M.E. and M.S. degree programs are designed to help students develop expertise in a specific core subject area of civil and environmental engineering. As such, graduate students are required to take a minimum of four core courses within a selected area of specialization. Available areas of specialization include:

- Environmental Engineering
- Geotechnical Engineering
- Railway Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

In addition, a <u>Graduate Certificate in Railway Engineering</u> may be earned concurrently with any graduate degree in Civil Engineering.

#### 2. ADVISEMENT

Every graduate student admitted to a degree program is entitled to an advisor. The academic program graduate director is the default academic advisor for graduate students until another academic advisor is assigned or an advisory committee is formed.

#### 2.1 General

Students must meet with their advisor each spring and fall to discuss degree progress and select courses to fulfill the degree requirements.

The Department of Civil and Environmental Engineering dedicates two weeks in each each spring and fall semester to advise graduate students. In the spring, each student is to be advised for the upcoming summer and fall terms. In the fall, each student is to be advised for the upcoming spring term. Graduate students must schedule an advisement appointment with their advisor, and complete an <u>advisement form</u> that must be signed by both student and academic advisor. This form must be submitted in person or via email to ECIV Student Services (<u>ammarell@cec.sc.edu</u>) to have the advisement hold lifted, and to have any necessary overrides to ECIV courses processed.

#### **2.2 Distance education**

Many academic programs offer courses and degree programs via distance education using multiple delivery methods, both in synchronous and asynchronous modes. Courses are offered during fall, spring, and summer terms. All courses delivered through distance education are approved by the appropriate academic authority as suitable for distance delivery, are subject to the same academic policies and regulations, and meet the same University standards of rigor, prerequisites, sequence, etc., that are required in residence course work. Students should consult with the individual academic programs for courses and degrees offered via distance education.

APOGEE students are expected to meet with their faculty advisors either in person or remotely, and communicate via email and phone. For the purpose of advisement, APOGEE students must complete the <u>APOGEE Advisement Form</u>, and have the form signed by the academic advisor and submitted to ECIV Student Services (<u>ammarell@cec.sc.edu</u>). The student will be notified via email when the advisement hold has been lifted. All courses offered asynchronously via video streaming in the College of Engineering and Computing are indicated by section J60 and above. Non-APOGEE students are restricted from enrolling in and having access to video streaming.

#### **3. ENROLLMENT REQUIREMENTS**

M.E. and M.S. students enrolling for the second term should review the admission confirmation notification (to be received via email from the USC Graduate School) for any conditions placed on their admission. If not resolved during the first term of enrollment, these conditions will prevent students from enrolling for a second term.

These conditions typically include the submission of official transcripts, GRE, TOEFL and IELTS official test scores, and English for Foreign Students (ENFS) conditions. For example, the Department of Civil and Environmental Engineering may have placed a condition for taking or retaking the GRE during the first term of enrollment, obtaining a minimum grade of B in ECIV graduate courses, and/or completing prerequisite courses (*e.g.*, to remove deficiencies). M.E. and M.S. students with the aforementioned admission conditions may not have the advisement hold lifted until said conditions are met.

## 3.1 Enrollment load

Full-time M.E. and M.S. students must be enrolled for nine to 12 credit hours.

Part-time M.E. and M.S. students must be enrolled for a minimum of three credit hours.

M.E. students are not subject to credit hour enrollment requirements in a given term unless they receive financial support from ECIV as Graduate Research Assistants in said term.

M.E. and M.S. students who receive financial support from ECIV as Graduate Research Assistants must satisfy the following enrollment requirements\*:

- Spring and fall terms: minimum six credit hours.
- Summer term: minimum three credit hours (or minimum six credit hours if this is the first enrollment term for international students.
- \* These credit hour requirements are mandatory for ECIV Graduate Research Assistantship positions. Any credit hours less than noted above will require graduate students to submit a Special Enrollment (Z-Status) form at the time of advisement. It is noted that the Master's and Certificate Program of Study (<u>MPOS</u>) form must be on file prior to applying for Z-Status. In addition, international students have a one-time Reduced Course Load Request For F-1 and J-1 Student Visas <u>form</u> to submit to the Office of International Student and Scholar Support (<u>iss@sc.edu</u>).

ECIV 797 and 799 are variable credit hour courses. When registering, students are responsible for manually entering the number of credit hours they wish to enroll for.

Enrollment exceptions must be approved by the Graduate School.

A student must be enrolled for at least one credit hour during any semester (including the semester in which the students applies to graduate) in which thesis progress is made and such University resources as the library, computer facilities, or faculty time are used.

# **3.2 Special enrollment (Z-Status)**

The dean of the Graduate School, under certain circumstances, may certify that a student's full-time enrollment is less than the normal requirement of 9 hours for graduate students or 6 hours for students serving as graduate assistants. A Z-Status request for under-enrollment privilege must be term-specific and is limited to two terms. Z-Status for under-enrollment privilege may be extended beyond two terms with the approval of and justification from the academic unit and with the approval of the dean of the Graduate School.

#### 4. REGISTRATION

All graduate students are assigned a day and time in which they can register for courses. The Office of the University Registrar refers to this as '<u>time ticket</u>'. Students can view their time tickets via <u>my.sc.edu</u> before registering.

Any holds on the registration will be noted in <u>my.sc.edu</u>, including what USC unit (*e.g.*, office, department) has placed the holds. Students will need to contact said unit directly to have the holds lifted.

In the spring term, students will register for both the upcoming summer and fall terms. In the fall term, students will register for the upcoming spring term.

In a given term, for all adds, section changes, or credit/audit changes made after the deadline dates as printed in the Academic Calendar, students are required to submit a Registration Exception ( $\underline{AS-199}$ ) form, with the appropriate signatures, to the Office of the University Registrar.

#### **5. COMPREHENSIVE ASSESSMENT**

All candidates for a M.E. or M.S. degree must complete a comprehensive assessment in the major field of study that is distinct from program course requirements. A comprehensive assessment is one that requires a student to synthesize and integrate knowledge acquired in coursework and other learning experiences and to apply theory and principles in a situation that approximates some aspect of professional practice or research in the discipline. It must be used as a means by which faculty judge whether the student has mastered the body of knowledge and can demonstrate proficiency in the required competencies. Many different models are possible, including written and oral comprehensive examinations, portfolios, supervised practice placements with comprehensive evaluation, a major written paper such as a thesis or an applied research project, or development of case studies.

Each degree program must require a comprehensive assessment. Completion of course requirements or satisfaction of a specified GPA does not satisfy the comprehensive assessment requirement. The Graduate School must be notified by the graduate director of the student's academic program of successful completion of the comprehensive assessment. Completion remains valid for two years after which the assessment must be repeated.

For the M.E. degree program, a student passes the comprehensive assessment by demonstrating an ability to integrate graduate level coursework into engineering practice. This comprehensive assessment can be met in one of the following two ways:

- 1) The M.E. degree candidate will prepare a three-page written career planning document describing past background, educational goals and achievements, how graduate level coursework was/will be integrated into the candidate's engineering practice, and future plans for career and professional development. The candidate will submit this career plan to an M.E. Committee designated by the ECIV graduate director in consultation with the Graduate Program Committee and the candidate's academic advisor.
- 2) The M.E. degree candidate will prepare a three-page written summary of the engineering project performed as part of ECIV 797 Research in Civil Engineering. The candidate will submit this report to the M.E. Committee designated by the ECIV graduate director in consultation with the Graduate Program Committee and the candidate's academic advisor.

The three-page written document (career planning or summary of the engineering project) for the M.E. comprehensive assessment must be submitted to the M.E. Committee at least one month prior to graduation. The result of the M.E. comprehensive assessment will be determined based on the evaluation rubrics submitted by all members of the M.E. Committee in or before the semester in which the candidate applies for graduation.

For the M.S. degree program, the comprehensive assessment is administered in the form of a Comprehensive Exam at the same time of defending the M.S. Thesis. The Master's Thesis Signature and Approval Form (G-TSF) and the evaluation rubrics must be completed at the time of the M.S. Thesis defense, and submitted under the terms required by the Graduate School. The G-TSF is a degree-audit document and it is the responsibility of the M.S. candidate filling out said form and providing it to the ECIV Student Services via email (ammarell@cec.sc.edu) no later than one week prior to the M.S. Thesis defense.

The Graduate School must be notified by the ECIV graduate director of the successful completion of the comprehensive assessment. The M.E. and M.S. comprehensive assessment remains valid for two years, after which it must be retaken prior to graduation.

### 6. LABORATORY SAFETY TRAINING

Training requirements for laboratory personnel are based on the type of hazardous materials utilized in the laboratory where research is conducted. Research safety training is designed to ensure that students understand and are able to execute proper protective measures to mitigate potential hazards and associated risks.

USC's <u>Office of Environmental Health and Safety</u> trainings are intended to cover the basic principles and practices for safely performing research involving common laboratory hazards.

All graduate students who utilize ECIV's experimental facilities are required to complete the following two <u>Research and Laboratory Safety Trainings</u>:

- 1) <u>Chemical and Lab Safety</u>, to be renewed every four years.
- 2) <u>Hazardous Waste</u>, one-time classroom course followed yearly by an online refresher.

Upon successfully completing each training or refresher, students must provide a copy of the certificate via email to the ECIV Research Specialist (<u>inglettr@cec.sc.edu</u>). Failure to comply with this requirement may result in the termination of a student's Graduate Research Assistantship.

#### 7. GRADUATE TEACHING AND INSTRUCTIONAL ASSISTANTS

The Southern Association of Colleges and Schools (SACS) and the USC Graduate School require that newly appointed Graduate Teaching Assistants (GTA) and Graduate Instructional Assistants (GIA), as well as any graduate student who is working with student materials (grading) or interacting with students in any way (*e.g.*, office hours, tutors), participate in the following two-part training program.

- 1) <u>GTA/GIA Orientation Workshop</u>: GTA/GIA students must participate in an <u>orientation workshop</u> that aims to develop skills and prepare to teach at USC. ECIV GTA/GIA students must register through the Center for Teaching Excellence.
- 2) <u>GRAD 701</u>: GTA/GIA students are required to take this formalized professional Teaching Assistant Development course during or before the first semester of teaching. ECIV GTA/GIA students must register for GRAD 701, Sec. 001, via <u>my.sc.edu</u>.

In addition, <u>all international graduate students who will be newly appointed GTAs/GIAs</u> must participate in an International Student Services (ISS) Orientation, an International TA Training speaking assessment practice workshop (ITA Workshop), and subsequently have their English proficiency assessed (ENFS Assessment) through USC's English Programs for Internationals (EPI) prior to the start of classes. The following graduate policies and regulations apply.

- Accreditation standards require USC to monitor the quality of instruction provided by graduate assistants hired as teaching assistants. In order to perform teaching duties, a graduate assistant must attend the University-sponsored teaching skills workshop (TA Training) offered by the Graduate School before the start of the fall term prior to beginning teaching duties. Students need only attend the workshop once and will be placed in the trained GTA database when all requirements have been met.
- In order to teach as an ITA (instructor of record) the student must attend the teaching skills workshop (TA Training) offered by the Graduate School before the start of each fall term prior to beginning teaching duties, have at least 18 semester hours of graduate work in the discipline being taught, and must work under the supervision of a faculty member. Graduate teaching assistants must be monitored and regularly assessed for teaching effectiveness by the supervising faculty member and the academic program. Students need only attend the workshop once and will be placed in the trained ITA database when all requirements have been met.
- The SC Legislature mandates that all instructors at USC have adequate proficiency in English. International graduate students for whom English is not the primary language can be appointed as teaching assistants only if oral proficiency in English has been evaluated as satisfactory by the faculty of the EPI. Mandatory for all international students appointed as graduate teaching assistants, the evaluation workshop is held prior to the start of each fall term, three days before the teaching skills workshop (TA Training) offered by the Graduate School that all prospective GTAs and ITAs must complete. Students who demonstrate sufficient English proficiency and complete all other requirements, including the TA Training workshop, will be placed in the GTA/ITA database.

#### 8. REQUIREMENTS AFTER GRADUATION

All M.E. and M.S. students are required to do the following after completing their program.

- <u>Returning all keys</u>: all keys and the completed key return form must be returned to 300 Main St., Room C230.
- <u>Cleaning up</u>: students are required to clean out assigned workspace (office and laboratory) of all personal research- and course-related materials prior to returning keys and graduating. All borrowed items should be returned to the owner(s). Any unused office supplies (including empty binders, staples, paper, pens, etc.) are to be returned to 300 Main St., Room C230. Disposal of any research-related materials in the laboratories should be approved by the student's academic advisor.
- <u>Providing contact information</u>: students should provide their contact information prior to leaving, and should provide updates in case of changes in home address and career moves. This information should be emailed to ECIV Student Services (<u>ammarell@cec.sc.edu</u>).

# 9. ACADEMIC INTEGRITY

#### 9.1 USC Honor Code

The <u>USC Honor Code</u> is a set of principles established by USC to promote honesty and integrity in all aspects of the campus culture. It is the responsibility of every student at USC to adhere steadfastly to truthfulness and to avoid dishonesty in connection with any academic program. Students who violate, or assist others in violating the Honor Code, will be subject to University sanctions.

Students are expected to abide by the USC Honor Code, and practice the highest possible standards of academic integrity. Violations of the USC Honor Code include any of the following actions:

- A. <u>Plagiarism</u>: use of work or ideas without proper acknowledgment of source.
- B. <u>Cheating</u>: improper collaboration or unauthorized assistance in connection with any academic work.
- C. <u>Falsification</u>: misrepresenting or misleading others with respect to academic work or misrepresenting facts for an academic advantage.
- D. <u>Complicity</u>: assisting or attempting to assist another in any violation of the Honor Code.

Whenever a student is uncertain as to whether conduct would violate the USC Honor Code, it is the responsibility of the student to seek clarification from the appropriate faculty member or instructor of record. Students who have violated the USC Honor Code are subject to both academic and non-academic penalties.

#### 9.2 Copyright infringement

USC is committed to upholding the U.S. Copyright Law and through the Policy on Network Access and Acceptable Use, specifically prohibits violation of the U.S. Copyright Law. This includes unauthorized distribution of copyrighted material as well as downloading, using, or installing pirated music, movies, games, and/or computer software on the College of Engineering and Computing computers and network (including personal computers connected to our network through UofSC wireless or college VPN). Violation of copyright law will not be tolerated and will be dealt with per UofSC policies and procedures.

In addition, employees and students working for research groups discovered engaging in piracy or any theft of any intellectual property may be subject to harsher penalties by their home department or college.

For more information, please consult <u>http://www.sc.edu/copyright/</u>.

#### **10. REFERENCE USC RESOURCES**

The following list includes links to USC webpages of interest for graduate students.

- <u>Bursar's Office</u>: click <u>here</u>. Includes information on tuition and fees, and payment deadlines).
- <u>ECIV M.E. degree requirements</u> (from Graduate Studies Bulletin): click <u>here</u>.
- <u>ECIV M.S. degree requirements</u> (from Graduate Studies Bulletin): click <u>here</u>.
- <u>ECIV graduate course descriptions</u> (from Graduate Studies Bulletin): click <u>here</u>.
- <u>CEC Graduate Programs Grievances, Appeals, and Petitions</u>: click <u>here</u>. This guide applies to all graduate programs in the USC College of Engineering and Computing.
- <u>Graduate School 'Academics'</u>: click <u>here</u>. Includes information on progress to degree, thesis and dissertation, commencement, regulations and appeals, deadlines.
- <u>Graduate School Forms Library</u>: click <u>here</u>. Includes links to graduate forms, such as program of study\*, program of study adjustment, comprehensive exam verification\*, request for concurrent enrollment, special enrollment (Z-Status), thesis signature and approval\*, update request (\* denotes degree audit document).
- <u>'Master's Degree Requirements'</u> (from Graduate Studies Bulletin): click <u>here</u>. Includes information on requirements such as course enrollment load, special enrollment (Z-Status), program committees, program of study, transfer credit, comprehensive examination, thesis submission, defense, application for degree, degree conferral, and academic regalia.
- <u>Graduate Policies and Regulations</u> (from Graduate Studies Bulletin): click <u>here</u>. Includes information on academic regulations such as, attendance, enrollment in courses outside of major, enrollment load, transfer of course credit, dropping a course, grading policies, academic standards for grade point average, progression, graduation.
- Office of International Student and Scholar Support: click <u>here</u>. Includes information on immigration status and access to <u>forms</u> for international graduate students, such as '<u>Reduced Course Load Request Form</u>' for special enrollment (Z-Status).
- Research and Laboratory Safety Training (from Office of Environmental Health and Safety): click <u>here</u>. Includes information on and schedules of required trainings for graduate students who utilize ECIV's experimental facilities (see Sec. 6 of this Handbook).
- <u>Office of the University Registrar</u>: click <u>here</u>. Includes information on transcripts and records, registration, academic calendars, academic bulletin, final exams,

graduation and commencement, and student <u>forms</u> (e.g., Citizenship Verification Form, Registration Exception Form).

• <u>Student Health Services</u>: click <u>here</u>. Includes information on appointments, medical services, mental health, insurance and payments, pharmacy, wellness and prevention.

11. ECIV FACULTY CONTACT INFORMAT	ION
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Name	Office Program Area	Phone Area Code (803)	Email
Dr. Nicole Berge Undergraduate Director	C106 Environmental	777-7521	berge@cec.sc.edu
Dr. Juan Caicedo Department Chair Chi Epsilon Advisor	C230 Structures	777-1925	caicedo@cec.sc.edu
Dr. M. Hanif Chaudhry	C224 Water Resources	777-3652	<u>chaudhry@cec.sc.edu</u>
Dr. Yuche Chen ITE Advisor	C211 Transportation	777-9105	<u>chenyuc@cec.sc.edu</u>
Dr. Joseph Flora	C209 Environmental	777-8954	flora@cec.sc.edu
Dr. Sarah Gassman	C226 Geotechnical	777-8160	gassman@cec.sc.edu
Dr. Erfan Goharian	C206 Water Resources	777-4625	goharian@cec.sc.edu
Dr. Shamia Hoque	C108 Environmental	777-2288	hoques@cec.sc.edu
Dr. Jasim Imran	C225 Water Resources	777-1210	Imran@cec.sc.edu
Dr. Fabio Matta Graduate Director	C210 Structures	777-1917	fmatta@sc.edu
Dr. Steve McAnally	C117 Environmental	777-7403	mcanally@cec.sc.edu
Dr. Michael Meadows	C207 Water Resources	777-3614	meadows@cec.sc.edu
Dr. Robert Mullen	C118 Structures	777-3614	<u>rlm@cec.sc.edu</u>
Dr. Charles Pierce	C212 Geotechnical	777-3855	piercec@cec.sc.edu
Dr. Yu Qian	C228 Geotechnical/Railway	777-8184	<u>yuqian@sc.edu</u>
Dr. Dimitris Rizos Associate Chair Railway Engineering Certificate Director AREMA Advisor	C208 Structures/Railway	777-6166	rizos@cec.sc.edu
Dr. Inthuorn Sasanakul	C227 Geotechnical	777-7160	sasanaku@cec.sc.edu
Dr. Enrica Viparelli ASCE Advisor	C116 Water Resources	777-7086	<u>viparell@cec.sc.edu</u>
Dr. Yeomin Yoon	C107 Environmental	777-8952	yoony@cec.sc.edu
Dr. Paul Ziehl Associate Dean for Research	3A41-SWG Structures	777-0671	<u>ziehl@cec.sc.edu</u>

Name	Office Program Area	Phone Area Code (803)	Email
Ms. Karen Ammarell Student Services	C218	777-9482	ammarell@cec.sc.edu
Ms. Rachel Dotter Administrative Assistant	C230	777-3416 <u>Main office number</u> 777-0670 <u>Department fax</u>	<u>rep@email.sc.edu</u>
Mr. Brian Hull Deputy Director IT Services	C216	777-0593	<u>hullb@cec.sc.edu</u>
Mr. Russell Inglett Research Specialist	C113D	777-3614	inglettr@cec.sc.edu
Mr. Travis Weatherford Business Manager	C229	777-8304	weathert@mailbox.sc.edu
Ms. Jamie Wurdinger Program Coordinator Engineering Management	C223	777-8318	jwurd@email.sc.edu

#### **12. ECIV STAFF CONTACT INFORMATION**

#### **13. INFORMATION TECHNOLOGY GUIDE**

The Department of Civil and Environmental Engineering or the student's research group will provide computer equipment for use at USC.

ECIV graduate students are encouraged to contact Mr. Brian Hull to discuss technology needs and recommended specifications for desktops, laptops, and accessories:

Brian Hull Deputy Director, IT Services, College of Engineering and Computing IT Manager, Department of Civil and Environmental Engineering 300 Main Street, Room C216 Columbia, SC 29208 (803) 777-0593 hullb@cec.sc.edu

Personal equipment (laptops, smartphones, etc.) can be used on USC wireless networks but are not allowed to connect to the USC wired network. <u>University-owned or purchased</u> <u>software cannot be installed on personal equipment</u>.

Machines may be purchased at a discount through USC. For more information, consult the USC Division of Information Technology <u>website</u>. Please note that the Department can order replacement parts for these machines under warranty, and warranty repairs can be done on-site at no cost to students.

# 14. LABORATORY SAFETY AND PROCEDURES MANUAL

The rules and requirements in this Laboratory Safety and Procedures Manual apply to all graduate students utilizing the ECIV laboratory facilities.

These requirements complement the <u>Safety Policy</u> and the <u>Research & Laboratory Safety</u> guidance from the Office of Environmental Health and Safety.

USC has a comprehensive Environmental Health and Safety program. All USC community members are expected to adhere to the policies and protocols to build safety consciousness among students, employees and others while reducing accidents, minimizing potential liabilities, and promoting environmental stewardship.

For additional information and guidance, please contact Mr. Russell Inglett:

Russell Inglett Research Specialist Department of Civil and Environmental Engineering College of Engineering and Computing 300 Main Street, Room C113D Columbia, SC 29208 (803) 777-9954 inglettr@cec.sc.edu

#### 14.1 Laboratory safety

The following rules and requirements apply.

- All students, faculty, and staff who are working in the ECIV laboratories are required to read and sign off on the attached <u>Acknowledgment of Safety and Procedures</u>
- No open-toe shoes are permitted in laboratory areas (i.e., flip flops, sandals)
- Hard hat is required during crane operation and/or working overhead
- Safety glasses are required at all times
- Earplugs are required when necessary
- Dust masks are required when necessary
- Crane and forklift equipment is to be used by authorized personnel only
- Laboratory areas must be maintained and cleaned at all times (before, during, and after projects)
- No thru-traffic is allowed in laboratory areas
- No propping of outside doors is allowed
- It is up to the graduate student and/or academic/research advisor to notify the Research Specialist (<u>inglettr@cec.sc.edu</u>) of any hazardous chemicals that will be involved during a project. Training will be required
- Applicable MSDS must be filed with the Research Specialist before use
- Students should not attempt to repair any equipment without the Research Specialist (<u>inglettr@cec.sc.edu</u>) and advisor's approval
- Any malfunctioning, broken, or non-operational equipment must be reported immediately to the Research Specialist (<u>inglettr@cec.sc.edu</u>)
- Visitors to the laboratories will need the Research Specialist and/or faculty approval

# **14.2 Laboratory procedures**

Inform and discuss with the Research Specialist (<u>inglettr@cec.sc.edu</u>) regarding the following items before the start of a given project:

- Projected start and end dates
- Drawings
- List of materials that will be required
- List of tools that will be required
- List of trainings that the graduate student will need to complete the project safely
- Projected amount of space that the project will require
- All personnel involved with project and contact information (advisor/s included)
- Fund numbers to which the project supplies are to be charged

#### Note that:

- Any specialty tools that the project will require will be the responsibility of the advisor to purchase
- Any replacement of consumables will be the responsibility of the advisor to purchase
- Purchases for a project will not be made unless first approved by the advisor via email to the Research Specialist (<u>inglettr@cec.sc.edu</u>) indicating the fund number
- Storage is the responsibility of student and advisor. Accommodations may be made by the Research Specialist based on project scale, duration, and available space.
- It is the responsibility of the student to mark the project materials with date ('Keep', 'Do Not Discard', etc.)
- All ECIV laboratory doors will be secured starting at 5:00 pm (if work after hours is needed, please consult the Research Specialist)
- All tools must be returned to their place in the tool rooms at the end of every day. If tools are needed past 5:00 pm, please consult the Research Specialist
- Scrap material should be placed in the project designated areas; they may be discarded otherwise
- The Department of Civil and Environmental Engineering will provide the student with Personal Protective Equipment (PPE). If PPE is missing or in need, please alert the Research Specialist.
- Tools, equipment, and facilities that are broken or damaged as a result of abuse and/or misuse are the responsibility of the student's advisor/s to replace

# **14.3 Disciplinary actions**

Disciplinary actions for violation of these rules and requirements will be administered by the Research Specialist.

Disciplinary actions include: documented verbal warning, documented written warning, temporary suspension of laboratory privileges. Continuing violations and/or serious infractions will be addressed by a meeting with student, Research Specialist, academic/research advisor, and Department Chair.

#### ACKNOWLEDGMENT OF LABORATORY SAFETY AND PROCEDURES

The signature below is evidence that I have read the ECIV graduate student <u>Laboratory</u> <u>Safety and Procedures Manual</u> and am bound to adhere to these rules and requirements set forth by the Department of Civil and Environmental Engineering.

I also have read and fully understand the disciplinary actions when/if I am in violation of these rules.

<u>Graduate student program area</u> (circle one):

Environmental Geotechnical Railway Structures Transportation Water Resources

Student printed name:		
<u>Student signature</u> :		Date:
Advisor printed name:		
<u>Advisor signature</u> :		Date:
Research Specialist:	Russell Inglett	Date:

# My signature above acknowledges that I am aware of the disciplinary actions as stated in this Handbook.

Disciplinary actions for violation of these rules will be administered by the Research Specialist. Disciplinary actions include: documented verbal warning, documented written warning, temporary suspension of laboratory privileges. Continuing violations and/or serious infractions will be addressed by a meeting with student, Research Specialist, academic/research advisor, and Department Chair.

This form is to be removed from this Manual, signed by the student and faculty advisor, and returned to the Research Specialist for filing purpose (300 Main St., Room C113D).

#### M.E. DEGREE PROGRAM CHECKLIST

The following two-page degree-progress checklist is intended to assist ECIV M.E. students as they pursue their <u>degree</u>. It is the student's responsibility to notify ECIV Student Services (<u>ammarell@cec.sc.edu</u>) of scheduled degree progression so that the necessary forms are transmitted to the academic advisor and the M.E. Committee.

Student printed name:	
Student USC ID:	

Notes:		

Baccalaureate degree:	
Admission term:	6-year limit:

For ECIV GTA/GIA:

<b>GTA/GIA Orientation</b>	GRAD 701	ITA Training
Date:	Date:	Date:

#### ECIV Student Services: <u>ammarell@cec.sc.edu</u> ECIV Administration (Admin): <u>rep@email.sc.edu</u>

Requirement	Notes and Timeline	Check Date
M.E.	Submit form <u>MPOS</u> * by end of second semester as USC M.E. student.	
Program of Study*	<u>Note</u> : separate form <u>MPOS</u> * required for students concurrently pursuing <u>Railway Engineering Certificate</u> .	
Appointment of	Minimum two members to be selected <u>prior to submitting</u> <u>comprehensive assessment document for review</u> .	
Appointment of M.E. Committee 1)	<ul> <li><u>Written Career Plan</u> option:</li> <li>1. Academic advisor</li> <li>2. Program area faculty; submit name and contact information to ECIV Students Services</li> </ul>	
2) 3) (optional)	<u>Written ECIV 797 Project Report</u> option: 1. Academic advisor 2. ECIV 797 instructor or (if same as academic advisor)	
	program area faculty; submit name and contact information to ECIV Students Services	

Requirement	Notes and Timeline	Check Date
Comprehensive Assessment*	<ul> <li>Two options:</li> <li>1. Written Career Plan.</li> <li>2. Written ECIV 797 Project Report.</li> <li>Discuss with academic advisor which option best fits your academic needs.</li> </ul>	
	Submit comprehensive assessment document to M.E. Committee for review (copy to ECIV Student Services) <u>no less</u> <u>than one month prior to graduation date</u> .	
Comprehensive Evaluation Rubrics	Documents provided to academic advisor and M.E. Committee by ECIV Student Services.	
Application for Degree*	For deadline see ' <u>Academics</u> ' in Graduate School website. Schedule preliminary audit of required documents with ECIV Student Services after applying for graduation.	
via <u>my.sc.edu</u> (term-specific)	<u>Note</u> : additional separate application required for students concurrently pursuing <u>Railway Engineering Certificate</u> .	
Student Key Return/Office Cleanup (if applicable)	Return all keys issued during studies to 300 Main St., Room C230, and clean up office and laboratory space. <u>Note</u> : a \$25.00 per key charge will be issued and hold placed on graduation if keys are not returned and office is not cleared.	
Graduate Contact Information	Prior to leaving USC, please email updated contact and employment information to ECIV Student Services.	
Exit Interview with Department Chair	Contact ECIV Admin to schedule meeting with Department Chair to share student's perspective on ECIV graduate program.	

\* <u>Degree audit document</u> that must be on file and approved by the Graduate School.

#### M.S. DEGREE PROGRAM CHECKLIST

The following two-page degree-progress checklist is intended to assist ECIV M.S. students as they pursue their <u>degree</u>. It is the student's responsibility to notify ECIV Student Services (<u>ammarell@cec.sc.edu</u>) of scheduled degree progression so that the necessary forms are transmitted to the academic advisor and the M.S. Committee.

Student printed name:		
Student USC ID:		
Student's advisor:		
Notes:		

Notes:	
Baccalaureate degree:	
Admission term:	6-year limit:

#### For ECIV GTA/GIA:

GTA/GIA Orientation	GRAD 701	ITA Training
□ Date:	□ Date:	□ Date:

#### ECIV Student Services: <u>ammarell@cec.sc.edu</u> ECIV Administration (Admin): <u>rep@email.sc.edu</u>

Requirement	Notes and Timeline	Check
M.S. Program of Study*	Submit form <u>MPOS</u> * by end of second semester as USC M.S. student. Must be on file and approved by Graduate School to be eligible for Z-Status. <u>Note</u> : separate form <u>MPOS</u> required for students concurrently pursuing Railway Engineering Certificate.	
Appointment of M.S. Committee           1)            2)	Discuss with academic advisor. Three members required: advisor and two other faculty from USC Columbia campus (see Graduate Studies Bulletin ' <u>Degree Requirements</u> ' for details).	
3) ${(\text{optional})}$	Email committee member names to ECIV Student Services.	
Thesis Writing and Format Workshop	Not required but <u>highly recommended</u> . Check with Graduate School for details and to register. For Format Guide, click <u>here</u> .	

	No later than two weeks prior to defense date.	
Thesis Defense Announcement	Email ECIV Student Services and ECIV Admin providing: student name, advisor name, program area, abstract, thesis title, defense date, time, and location.	
Application for Degree*	For deadline see ' <u>Academics</u> ' in Graduate School website. Schedule preliminary audit of required documents with ECIV Student Services after applying for graduation.	
via <u>my.sc.edu</u> (term-specific)	<u>Note</u> : additional separate application required for students concurrently pursuing <u>Railway Engineering Certificate</u> .	
Thesis Defense (Comprehensive Verification)	<ul> <li>Submit the following to ECIV Student Services:</li> <li>Form <u>G-TSF</u>* no later than two weeks prior to defense.</li> <li>Form must be typed, not handwritten, and <u>must include</u> name of style at bottom of form. Form will be provided to Doctoral Committee on date of defense by ECIV Student Services.</li> </ul>	
	- Publication record: journal and conference papers accepted, in review, in preparation.	
Comprehensive Verification*	ECIV Student Services will provide form to ECIV graduate director for signature upon successful completion of defense.	
Comprehensive Evaluation Rubrics	Documents provided to academic advisor and M.S. Committee members by ECIV Student Services.	
Thesis Format Check* and Final Submission*	Official Graduate School deadlines calendar applies. <u>These</u> <u>deadlines are mandatory and firm with no exceptions</u> .	
Student Key Return/Office Cleanup (if applicable)	Return all keys issued during studies to 300 Main St., Room C230, and clean up office and laboratory space. <u>Note</u> : a \$25.00 per key charge will be issued and hold placed on graduation if keys are not returned and office is not cleared.	
Graduate Contact Information	Prior to leaving USC, please email updated contact and employment information to ECIV Student Services.	
Exit Interview with Department Chair	Contact ECIV Admin to schedule meeting with Department Chair to share student's perspective on ECIV graduate program.	

\* <u>Degree audit document</u> that must be on file and approved by the Graduate School.