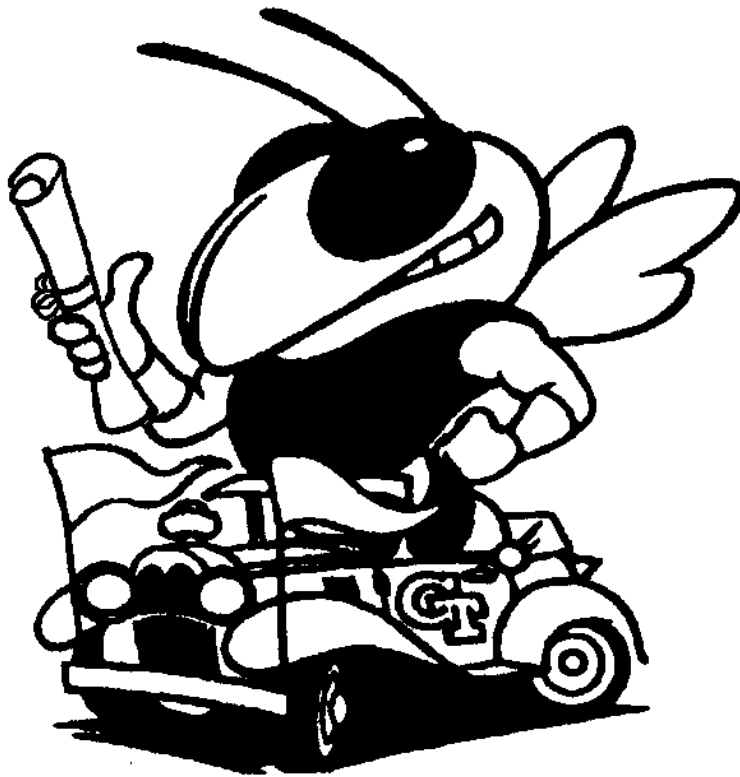


GRADUATE HANDBOOK

School of Civil & Environmental Engineering



August 2009

GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

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GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

CHAPTER I

INTRODUCTION TO CIVIL & ENVIRONMENTAL ENGINEERING

Civil engineering, the oldest non-military engineering profession, usually includes a variety of engineering specialties. At Georgia Tech, the following areas are found in the School's academic and research programs (Group Leaders indicated in parentheses):

- Environmental Engineering (Dr. Pavlostathis)
- Environmental Fluid Mechanics and Water Resources (Dr. Georgakakos)
- Geosystems Engineering (Dr. Rix)
- Structural Engineering, Mechanics and Materials (Dr. Zureick)
- Transportation Systems (Dr. Meyer)

Civil and environmental engineers work in a broad spectrum of engineering situations and find employment opportunities in both the public and private sector. Civil engineers work with construction firms, manufacturing companies, power companies, the petroleum industry, mining companies, and with consulting engineering firms. Many opportunities for civil engineering employment exist in city, county, and state engineering departments and in various agencies of the federal government. Others operate their own engineering businesses.

WHY THE HANDBOOK?

Universities spend a great deal of time assessing the content and quality of the educational programs they offer. Georgia Tech, in particular, is proud of its long-standing tradition of top quality engineering education. However, assuring the quality of an education often means that some rules have to be established to make sure your efforts at achieving a graduate degree are viewed as the major accomplishment it represents. Hence, this *Handbook*. Earning a graduate degree is not easy. This *Handbook* hopefully answers the important questions that will help you understand the process.

This *Handbook* provides students with general information about the Institute and the School of Civil and Environmental Engineering (CEE), gives details of the graduate program, and presents guidelines for completing degree requirements. This *Handbook* does not replace or supersede the *General Catalog* issued by the Georgia Institute of Technology, and should be viewed as a supplement to the material in the catalog. **In the event of a conflict in interpretation between this handbook and the General Catalog of the Georgia Institute of Technology, the interpretation of the General Catalog shall prevail.** The General Catalog can be found on the web at http://www.gatech.edu/gen_catalog/ Although we encourage students to seek advice from their faculty advisor(s) and CEE's Student Services Office; ultimately, it is the student's responsibility to meet the rules and regulations of the Institute for degree completion.

BRIEF HISTORY OF GEORGIA TECH'S SCHOOL OF CIVIL AND ENVIRONMENTAL ENGINEERING

Founded in 1885, Georgia Tech is one of the top technological institutions in the United States. Enrollment is over 17,000 students including more than 5,000 graduate students. In recent years, the National Science Foundation placed Georgia Tech third nationally for the amount of expenditures in engineering research and development. Recently, *U.S. News and World Report* rated Georgia Tech in the top five in its list of the top public graduate engineering programs in the country.

The School of Civil Engineering was established at Georgia Tech in 1896, principally through the efforts of Lyman Hall (Mathematics). From its first student graduate in 1902, the School today is one of the largest in the U.S. In 1995, the School's name was formally changed to Civil and Environmental Engineering to reflect the wide scope of the discipline. Today, the School of Civil and Environmental Engineering offers a comprehensive program leading to bachelor's, master's, and doctoral degrees. In 2008-2009, 227 students completed the undergraduate program, placing the School as one of the nation's leading producers of civil engineers. *U.S. News and World Report* rated our civil engineering undergraduate program in the top ten nationally. During the 2008-2009 academic year, the School awarded 100 Master's and 18 Doctoral degrees. The School has approximately 800 undergraduate students, 300 graduate students, 45 full-time faculty, and 10 research scientists.

With its internationally known faculty, high admission standards, demanding curriculum, and extensive research program, the School is among the top civil and environmental engineering programs in the United States.

PROGRAMS OF STUDY

The School of Civil and Environmental Engineering offers four master's degrees: Master of Science in Civil Engineering, Master of Science in Engineering Science and Mechanics, Master of Science in Environmental Engineering, and the undesignated Master of Science. Only those students who have previously earned the B.S.C.E., or its equivalent, may receive the Master of Science in Civil Engineering or the Master of Science in Engineering Science and Mechanics degrees. The School awards the Master of Science in Environmental Engineering only to those students who have previously earned the B.S.C.E., or who have earned an accredited bachelor's degree in engineering and have taken those courses required by their advisor and the School Chair. Students who do not meet the above requirements but satisfy all prerequisites for the courses in their M.S. program, receive the undesignated Master of Science degree. A wide range of M.S. and Ph.D. programs are available in fields such as environmental engineering, fluid mechanics, geotechnical engineering, hydraulics, hydrology, soil mechanics, materials, structures and mechanics, transportation, and water resources planning and management. The master's program can be completed in one year of full-time study. Each M.S. student must complete a minimum of 30 semester hours of course work. A master's thesis is optional, unless required by the faculty, based upon a student's research involvement. The Doctor of Philosophy degree is the highest degree awarded and requires the greatest proficiency and achievement in knowledge and research. The Ph.D. degree usually requires two years of course work beyond the Master's degree and at least one additional year for full-time research.

RESEARCH FACILITIES

The School of Civil and Environmental Engineering includes several modern laboratories for graduate level research. The 16,000 square foot structural testing laboratory includes facilities for large-scale structural testing, experimental stress analysis, photoelasticity, and non-destructive evaluation. The Environmental Engineering research program includes laboratories for particle characterization and analysis, biotechnology, physicochemical processes, extraction and characterization of inorganic and organic contaminants, municipal and industrial water and wastewater processes, subsurface contaminant transport, combustion processes, and air quality modeling. The hydraulics laboratory has approximately 18,000 square feet of floor space and is fully equipped for research in open channel hydraulics, sediment transport, cavitation and two-phase gas-liquid flows, and mixing in density-stratified water bodies. Transportation research facilities include a unique traffic signal laboratory, a spatial analysis and technology laboratory, and an IVHS laboratory. The School has in-house computing facilities including high performance workstations, a state-of-the-art multimedia laboratory, and high-end PCs. Furthermore, students have access to other computers on campus and at other institutions. Lastly, the Georgia Tech Library has the largest scientific, engineering, architectural, and management collection in the Southeast, and offers access to the holdings of other libraries in Georgia.

ACCREDITATION

The Georgia Institute of Technology is an accredited member of the Southern Association of Colleges and Schools. Additionally, many programs within the Institute are specifically accredited by appropriate national certifying agencies. The Master of Science degrees in Civil Engineering and Environmental Engineering are recognized by boards of registration as engineering degrees, but are not accreditable by current rules, because A.B.E.T. does not accredit both bachelor's and master's degrees in the same discipline. The undesignated Master of Science degree is not an engineering degree; holders of this degree may not be licensed as professional engineers unless they have an A.B.E.T. accredited bachelor's degree in engineering. Further detailed information regarding graduate degrees can be found in the General Catalog, and you are strongly encouraged to read those sections pertaining to you. The catalog also contains information regarding the Ph.D. degree.

DISTANCE LEARNING PROGRAM

Georgia Tech's Center for Distance Learning provides students who are unable to attend an on-campus program the opportunity to pursue a Master's degree by videotape and electronic communication. Environmental Engineering is the only one of CEE's Groups currently participating in the video program. Students receive video of current term classes and consult with the faculty by phone, fax, or electronic mail. For detailed information, contact the Center for Distance Learning Office, which can be reached at 404-894-3378, or visit their web site at: <http://www.dlpe.gatech.edu/dl/>

Applicants to the video program are admitted into the same Masters degree program as are on-campus students. Video students must meet the same admission standards, and maintain the same academic performance to remain in the program. Upon completion of the program, video students receive the same degree as do on-campus students with the same qualifications.

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School of Civil & Environmental Engineering - Georgia Tech

CHAPTER II

STRUCTURE OF THE SCHOOL OF CEE

WHO'S IN CHARGE?

The faculty has the ultimate responsibility for making policies regarding the academic programs offered in the School. However, as in most organizations of our size, there must be some form of decision-making structure in the School. The primary responsibility for the School's operation rests with the School Chair. Three Associate Chairs have responsibility for the Undergraduate Program, the Graduate Program, and Administration respectively. The persons having these responsibilities are as follows:

- Dr. Joe Hughes, School Chair
- Dr. Don Webster, Associate Chair for Undergraduate Programs
- Dr. Kenneth Will, Associate Chair for Graduate Programs
- Dr. Reggie DesRoches, Associate Chair

FACULTY COMMITTEES

In addition, there are several faculty committees that focus on various aspects of School activities. These committees include:

- Undergraduate Committee, Dr. Larry Kahn, Chair
- Graduate Committee, Dr. Susan Burns, Chair
- Awards Committee, Dr. Spyros Pavlostathis, Chair
- Communications Committee, Dr. Jaehong Kim, Chair

FACULTY GROUPS

Within the School, the faculty is arranged into Groups, which have expertise in various areas of civil and environmental engineering. These groups provide teaching, research, and instructional support in their specialty areas. Graduate applicants must specify a preferred area of interest; they are then evaluated by, and admitted to, a specific group.

- Environmental Engineering
 - Dr. Spyros Pavlostathis, Group Leader
 - Dr. Mike Bergin, Graduate Coordinator
- Environmental Fluid Mechanics and Water Resources
 - Dr. Aris Georgakakos, Group Leader
 - Dr. Jian Luo, Graduate Coordinator
- Geosystems Engineering
 - Dr. Glenn Rix, Group Leader
 - Dr. Susan Burns, Graduate Coordinator
- Structural Engineering, Mechanics and Materials
 - Dr. Abdul Zureick, Group Leader
 - Dr. Larry Kahn, Graduate Advisor
 - Dr. Kenneth Will, Graduate Coordinator
- Transportation Systems
 - Dr. Michael Meyer, Group Leader
 - Dr. Laurie Garrow, Graduate Coordinator

RESEARCH CENTERS WITH SIGNIFICANT CEE FACULTY INVOLVEMENT

- Center for Applied Geomaterials Research
- Georgia Water Resources Institute (GWRI)
- Particulate Media Research Laboratory
- Institute for Sustainable Technology & Development (ISTD)
- Georgia Transportation Institute (GTI)
- Computer Aided Structural Engineering Center (CASE)
- Multimedia Environmental Simulations Laboratory (MESL)
- Sustainable Facilities & Infrastructure (SFI/GTRI)
- GTSTRUDL: Structural Analysis and Design Software for Civil Engineers
- Mid-America Earthquake Center (MAE)

INFORMATION SYSTEMS GROUP (ISG)

The Information Systems Group (ISG) supplies the computer support staff for the School of Civil and Environmental Engineering's computing facilities; this includes the student PC labs, administration and business offices, educational and research equipment, as well as the World Wide Web server.

The ISG is located in the Sustainable Education Building (SEB), Room 319. The phone number is (404) 894-2210.

CEE STUDENT SERVICES OFFICE

The Student Services Office for the School of Civil and Environmental Engineering responds to all inquiries for graduate applications, and processes all applications submitted for admission into CEE's graduate programs. The office also provides information on administrative and procedural matters, as well as assistance in the submission of degree petitions. Registration permits, along with undergraduate student advisement, also are handled here.

The Student Services Office provides support to the faculty in the application evaluation process, assists with the recruitment of prospective students, and corresponds with those who have applied for admission. The Office also provides reports and statistical data to the School and the Institute.

The Student Services Office is located in the Mason Building, Room 111. The phone number for the graduate office is (404) 894-2246.

IMPORTANT EMAIL ADDRESSES IN CEE

- Everybody at CEE (not students) all@ce.gatech.edu
- Faculty members faculty@ce.gatech.edu
- Staff members staff@ce.gatech.edu
- Administration administration@ce.gatech.edu
- Mason building maintenance masonbm@ce.gatech.edu
- Information Systems Group - computer assistance isg_staff@ce.gatech.edu
- Graduate Admission Information gradinfo@ce.gatech.edu
- Structures Group STRUCTURES@ce.gatech.edu
- Geosystems Group GEOTECH@ce.gatech.edu
- Transportation Group TRANSPORTATION@ce.gatech.edu
- Environmental Engineering Group ENVIRONMENTAL@ce.gatech.edu
- Environmental Fluid Mechanics & Water Resources Group WATER@ce.gatech.edu
- GTSTRUDL - structural analysis and design software GTSTRUDL@ce.gatech.edu

CEE FACULTY AND THEIR RESEARCH

This information can be found on CEE's web site, at: http://www.ce.gatech.edu/fac_staff/faculty-listing/

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CHAPTER III

ADMISSION TO THE SCHOOL OF CEE

REQUESTING APPLICATION MATERIALS

The School of Civil and Environmental Engineering's Student Services Office receives several thousand application inquiries each admission cycle. It is advisable to submit application materials well in advance of the deadline to allow sufficient time for postal delivery, processing, and faculty evaluation. The online application can be accessed from CEE's Graduate Applicant Information web site, at: <http://www.gradinfo.ce.gatech.edu/>, which also contains information on the School's admission requirements, academic programs, and the application process. The web site should be the first point of contact for those interested in learning about, and applying to, CEE's graduate program. Application materials are only available online, there is no paper version of the application.

When making an application inquiry, specify your area(s) of interest within CEE. A single faculty group must be specified when the application is submitted. Each faculty group evaluates their own applicants independently of the other groups. It is rare that an applicant is reviewed by multiple groups, and then usually only after an evaluation by the initial group to which the applicant applied.

To contact the School of Civil and Environmental Engineering's Graduate Office:

Call:	404-894-2246	Write:	Graduate Office
Fax:	404-385-0571		School of Civil & Environmental Engineering
E-mail:	gradinfo@ce.gatech.edu		Georgia Tech
Web:	http://www.gradinfo.ce.gatech.edu/		Atlanta, GA 30332-0355 USA

APPLICATION DEADLINES

The deadline to submit applications to the School of Civil and Environmental Engineering's graduate program for the Fall term is December 30. After this date, applications will generally continue to be accepted, but there is no guarantee of full consideration, as both space and funding may no longer be available.

Masters degree applicants are normally only admitted to the Fall term, due to prerequisite courses that are only offered at that time. Doctoral students may be admitted to any term.

APPLICATION MATERIALS

Details on the materials required in the application process, along with grade and test score requirements, and information on requesting financial assistance can be found on CEE's Graduate Applicant Information web site, at: <http://www.gradinfo.ce.gatech.edu>

INTENSIVE ENGLISH PROGRAM

Students admitted with relatively low TOEFL or GRE-Verbal scores might be required, as a condition of their admission, to attend an Intensive English Program prior to enrollment in the graduate program. A student may also choose to enter a program themselves to improve their language skills. Intensive English Programs are offered at other institutions, and it is usually not required that a student with such a conditional admission attend Georgia Tech's program, although many will choose to do so.

The Intensive English Program at Georgia Tech is offered through the Language Institute, which is not a part of the School of CEE. The program's cost varies based upon an individual's housing and meal plan.

To contact the Intensive English Program:

Phone:	404-894-2425	Write:	Language Institute
Fax:	404-894-8755		Georgia Tech
E-Mail:	karen.tucker@esl.gatech.edu		Atlanta, GA 30332-0374 USA
Web Site:	http://www.esl.gatech.edu/li/servlet/LIHome		O'Keefe Bldg, South Wing, 1st Floor
			151 6th St NW
			Atlanta, GA 30332-0374, USA

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CHAPTER IV

INFORMATION FOR NEW GRADUATE STUDENTS

ORIENTATION PROGRAMS FOR NEW GRADUATE STUDENTS

Institutional Orientation

The Graduate Orientation Session is designed to address many questions and concerns of new students. Assistance is also provided in completion of the paperwork required of students awarded Graduate Assistantships, including applying for Social Security Numbers. In addition, you will be introduced to campus policies and procedures, and will receive a campus tour and materials that discuss important aspects of your stay at Tech. This session is only held prior to the beginning of Fall semester.

CEE Orientation

An Orientation session for new CEE graduate students is held most semesters, usually on the weekday morning prior to the beginning of classes. This session is required for all new CEE graduate students. The session will present information and material that you will be responsible for during your time in our program. It will also allow you to meet some of the faculty and staff of the school, along with your fellow students. After the opening session, you will meet with a faculty advisor from your Civil or Environmental Engineering specialty field, and you may then register for classes.

International Student Orientation

Prior to the beginning of Fall term, the Office of International Education (OIE) provides a required orientation to all international students, which will focus on the particular need of international students arriving on campus. For further details, visit OIE's web site, at: <http://www.oie.gatech.edu/>

LIBRARY ORIENTATION

CEE schedules several Georgia Tech Library Orientation Sessions for our graduate students each Fall semester. Notices will be distributed at CEE's orientation and posted in CEE buildings. If you are unable to attend a scheduled session, contact the Reference Librarian, to set up a personal session.

These sessions provide valuable information on the library's resources, how to search for information, and how to download, print, or transmit files. This is extremely valuable when conducting research for projects, papers, and theses.

GRADUATE TEACHING AND RESEARCH ASSISTANTS

Many new graduate students receive financial support in the form of teaching or research assistantships. It is important to understand that these assistantships are jobs that must be undertaken to the satisfaction of the supervisor. A student would be in error to view such assistance as a fellowship or grant that has few requirements attached to it. As such, the following guidelines are useful to make sure that your experience as a graduate assistant is a productive one.

- Establish job expectations at the beginning of each semester to insure that everyone knows what is expected and when assignments are due.
- Meet with your supervisor often to insure that he or she is aware of progress being made. Many professors are very busy, if regular meetings are not scheduled by your supervisor, you should take the initiative and schedule them.
- Although much research is often done in the field or requires trips to other organizations and libraries, it is expected that you will be available during other hours of your assistantship.
- Funded graduate students receive priority for student offices. Use them. If assigned offices are not used, they will be reassigned.
- Telephones are not to be used for personal calls, especially long distance calls.
- Do not leave on vacation or during breaks without permission from your supervisor. The responsibilities of graduate assistantships do not end with the final exam of each semester. Often, as in the December holiday break, it is expected that graduate assistants will be working on their assignments until Georgia Tech officially closes for the holidays.

If difficulties arise between a graduate assistant and a supervisor, and the differences cannot be resolved by the two individuals, then the Associate Chair for Graduate Studies can be asked to help resolve the issue. Most importantly, take advantage of the opportunities provided by your financial support and learn as much from the Georgia Tech faculty and research staff as possible. Your graduate experience can be very rewarding and beneficial to your career.

OTHER NEW STUDENT “BUSINESS”

E-Mail Account

E-Mail accounts are set up by the Office of Information Technology (OIT) for each student. Activate your account as soon as possible after arriving on campus. Go to http://www.oit.gatech.edu/help/new_to_campus/overview.cfm for information on activation and use of your computer account.

The Georgia Tech assigned e-mail account is how Georgia Tech departments will most often contact students, with announcements and status updates; you should check your account regularly.

Employment Paperwork

All students with an assistantship, or otherwise employed on campus, must fill out required employment paperwork. Prior to the beginning of Fall term classes, students must meet with representatives from Student Employment (OHR) and CEE’s Business Office, to complete hiring papers and to discuss rules and regulations for student employment at Georgia Tech. A session for this purpose may be held as part of either the Institute’s or CEE’s orientation sessions. Students beginning in terms other than Fall must go to Georgia Tech’s Office of Human Resources (OHR), at the corner of Marietta and Means Streets, to fill out the required materials.

Students must bring the following documents with them to the session or to OHR:

US Citizens
Picture ID
Social Security Card

US Permanent Residents
Green Card

International Students
Passport (with I-94)
Visa
I-20 (if F-1 visa)
IAP-66 (if J-1 visa)

You must have a Social Security card to be hired and placed on the payroll. If you have misplaced your Social Security card, or if you need to apply for a Social Security card for the first time, then you can go to the Social Security Administration Office at 55 Marietta Street NE, to apply for a new card. The new card will be mailed to you, but the Social Security Administration will give you an official receipt (with your Social Security Number), which OHR will accept in lieu of a Social Security card. The Social Security administration may have representatives on campus during Fall orientation, in conjunction with OHR sessions.

Graduate Student Offices

Offices are available only for a limited number of graduate students. Students with assistantships are given priority.

Health Insurance

For details, contact the Student Health Center. Some students will have insurance automatically billed to their account; it may be possible to have this requirement waived if you already have appropriate insurance. The Student Health Center's web site is: www.health.gatech.edu

Parking Permit

A Parking Permit is required if you plan to have a vehicle on campus. There are different rates available, depending on the parking location you choose. You need to purchase a permit from the Parking Office. Permits are valid for the entire academic year (Fall through Summer), and are not renewed each term. The Parking Office web site is: www.parking.gatech.edu

Registration and Fee Payment

This information is covered in Chapter VI, "Registration", of this handbook.

Student ID Card

Student ID Cards, referred to as the Buzz Card, are available daily at the BuzzCard Center, in the Student Center Commons. The Buzz Card is Georgia Tech's identification card that provides you access to a variety of campus-wide services and systems. The Buzz Card is an all-inclusive card; its features include:

- Your personal student identification card
- Your meal plan card
- Your library card
- Your access card to certain gate-restricted parking areas
- Your access card at the Campus Recreation Center

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CHAPTER V

INFORMATION FOR ENROLLED GRADUATE STUDENTS

ACADEMIC STANDING

MS students at Georgia Tech must maintain an overall Grade Point Average (GPA) minimum of 2.7 out of 4.0, and PhD students a GPA of 3.0, in order to stay on Good Academic Standing. Graduate students can be placed on Academic Warning or Probation while having an overall GPA above these minimums, if they have a term GPA that falls below it. Although the standard progression down the Academic Standing ladder is Good, Warning, Probation, and Drop; steps may be skipped if a student has particularly poor performance in a given term. The overall GPA must be at least 2.70 (without rounding) to be awarded a Master's degree, and 3.00 for a Doctoral degree.

A student dropped for academic reasons must petition the faculty for Readmission. A student dropped a second time is not usually readmitted to Georgia Tech.

FULL-TIME ENROLLMENT REQUIREMENTS

Full-time students must be enrolled for at least 12 credit hours on a letter-grade or pass-fail basis. The advisor and school chair may approve the substitution of one course (up to 3 hours) on an audit basis to be counted toward the 12-hour requirement. Full-time students working exclusively on thesis research should be registered for 18-21 hours of CEE 7000 or CEE 9000 (Master's or Doctoral Thesis). In the Summer term, the maximum number of hours allowed is 16.

The following students MUST register on a full-time basis as defined above:

- Graduate research and teaching assistants
- Students supported by fellowships, traineeships or individual grants
- Students with Tuition Waivers
- Students assigned to the institute by the Armed Forces for the purpose of pursuing a degree
- Students on student visas (F-1 and J-1 visas)
- Graduate Co-Op students on non-work terms
- Students involved in thesis research must register for an appropriate number of 7000 or 9000 hours

Graduate Assistantship Requirements for Reduced Tuition

All students with graduate research or teaching assistantships (GRA/GTA) must enroll for at least 12 credit hours each term. Of those 12 hours, a minimum of 9 hours must be scheduled on a letter-grade or pass-fail basis, and no more than 3 hours may be scheduled on an audit basis (audit hours must be approved by advisor). In the Summer term only, up to six audit hours may be counted toward the 12 required for full-time enrollment. For information regarding the basis in which courses are available, refer to the Schedule of Classes.

Students with assistantships taking fewer than 12 credit hours in a given term, may still be paid by CEE as a Graduate Assistant (GA), but will NOT qualify to pay the reduced tuition rate, and will be billed for the number of hours scheduled, at the rate for their residency classification.

To seek approval of GA status, a student's faculty advisor must submit a request to the School, explaining why GA status is desired. The most common situation where GA status would be approved is if the student will only be employed for only part of the term. GA status will not be approved if a student is doing fundamentally the same work as in prior GRA terms.

Graduate Assistantship Requirements to Schedule Assistantship Credit Hours (12-21 Rule)

All students with research or teaching assistantships must register for a minimum of 12 hours, as described in the preceding section, "Graduate Assistantship Requirements for Reduced Tuition". After all other courses have been scheduled, you should then register for enough Thesis Hours, to bring your total number of hours for the term to 21. The 21-hour maximum is reduced to 16 for Summer term, but 12 hours are always required to be a full-time student.

The appropriate Thesis Hours course numbers are: Master's: CEE 7000 / Doctoral: CEE 9000

Non-Thesis Master's students are not held to the 21 hour maximum, as it would be inappropriate for them to schedule thesis hours if not intending to write a thesis

POLICY ON HOUR LOADS FOR GRADUATE STUDENTS

The following general policies are provided to serve as guidelines for determining the hourly workloads of students who are pursuing graduate degrees. They are excerpted from a policy statement approved by the Academic Senate, on June 2, 1992. This can be found on the web at: <http://www.facultysenate.gatech.edu/credithrs.html>

- Full-time graduate students are expected to give primary attention to the pursuit of their degrees
- Graduate students are expected to take course work loads which will contribute to substantial progress toward a degree
- Graduate students shall register for a number of hours of research which is consistent with a realistic appraisal of the amount of work to be done on a project, thesis, or dissertation, and the amount of faculty involvement and use of institute facilities required
- Realistic accounting for graduate student credit helps support a quality graduate program

Course Load Requirements

The following regulations shall govern the semester requirements for students who are pursuing graduate degrees.

- Full-time enrollment requirements - Information is detailed in the preceding section of this chapter
- Students involved in thesis research must register for an appropriate number of 7000 or 9000 hours
- The minimum part-time load for graduate students is three credit hours
- A graduate student must be registered for at least three hours during the term of graduation. There are limited exceptions allowing one or zero hours registration, under certain specific conditions. See the CEE Student Services Office for details.
- The maximum allowable semester load for employed students, other than graduate assistants, is reduced as a function of the number of hours employed per week, as follows:

Workload per week	Maximum term hour load
Full time (40 hours)	6
3/4 of full time (30 hours)	9
2/3 of full time (27 hours)	10
1/2 of full time (20 hours)	12
1/3 of full time (13 hours)	15
1/4 of full time (10 hours)	18

The minimum load for these students is three hours, but such students should be encouraged to take the maximum load they can handle in order to progress toward completion of the degree.

Course Selection

Full-time students are expected to enroll for a letter grade in regular courses and thesis hours whenever possible. Registration loads should reflect, as much as possible, the student and faculty efforts involved in the program of study. Registration loads each term should be comprised of various hours from the areas listed below:

- Regular courses: letter-grade, pass-fail, and in special cases, audit
- 7000 or 9000 courses for thesis students
- Special problem or research project courses
- Specific courses for teaching or research education

Guidelines for Registration of Doctoral Dissertation Hours:

- Beginning full-time doctoral students, especially those who are research assistants, are encouraged to register for at least three hours of 9000. This would allow, and encourage, such students to maintain a lighter academic load to begin laying the groundwork for Ph.D. research.
- Advanced full-time doctoral students, who are working primarily on their dissertation research, should register for 18 to 21 hours of 9000. If taking other coursework, the number of 9000 hours would be reduced by the number of formal coursework hours. The advisor and/or school determine whether the total is 18 or 21.
- Part-time doctoral students engaged in their research phase for the Ph.D. should register for 9000 consistent with their and their faculty member's activity on the dissertation research.
- All full-time students classified as Master's students, but involved in research in preparation for the Ph.D., are encouraged to register for 9000, consistent with the amount of work involved.

MULTIDISCIPLINARY CERTIFICATE PROGRAM IN ENGINEERING

In addition to its degree programs, the College of Engineering provides opportunities for specialized study in engineering through its multidisciplinary certificate program offerings. Any student in Good academic standing who is pursuing a degree in one of the participating schools of the College of Engineering, or a participating school in any of the other colleges, may select elective courses and the subjects of special problems to satisfy simultaneously both the requirements of his or her major degree program and those of a specialized multidisciplinary program. Upon graduation, the student receives both the degree in the major field of study and a certificate attesting to successful completion of the particular related multidisciplinary program.

General Requirements of Graduate Multidisciplinary Programs

The specific design of the multidisciplinary program of any participating graduate student, while individualized, must meet certain general requirements as well as requirements that are specific to that multidisciplinary area. The general (minimum) graduate multidisciplinary requirements are:

- The program must relate the student's major area to the given multidisciplinary area
- Courses must be taken under more than one academic unit
- At least 12 credit hours (not required by name and number in the student's major) must be taken in a coherent program
- At least three of the coherent multidisciplinary program courses, as well as nine credit hours must be at the 6000 level or higher
- A minimum grade of "C" must be earned in each course counting toward a multidisciplinary certificate.
- The overall grade point average for the multidisciplinary program must be 3.0 or higher
- Students at the doctoral level must, on an individual basis, meet additional requirements specified by the student's doctoral committee, consistent with a program beyond the master's level whose objective is to develop a doctoral-level multidisciplinary program

The policies and procedures for the student's petitioning for, and receipt of, the certificate are spelled out under the College of Engineering section of the Georgia Tech General Catalog.

READMISSION

Students who interrupt the continuity of their graduate program by not registering for two or more consecutive terms, must seek Readmission by filing with the Registrar a completed request for readmission. This form must also be approved by the student's major school and the Graduate Dean's office. Students on Good Standing are generally approved, although Doctoral students may need specific approval from their advisor.

TRANSFER OF CREDIT

A student may not apply for transfer credit until after matriculating at Georgia Tech. The courses to be transferred would typically be those appearing on the approved program of study for the Master's degree. A Doctoral student normally does not request transfer credit, as courses from other institutions can be listed on the Approved PhD Program of Study without appearing on the Georgia Tech transcript. The rules relative to and the process for obtaining transfer of credit for graduate-level courses are as follows:

- A student may receive transfer credit (up to six hours) for graduate-level courses taken at an accredited institution in the United States or Canada and not used for credit toward another degree. The student must supply an official transcript for evaluation.
- The student's advisor must approve that transferred courses are a logical part of the student's graduate program in order for the credit to be used toward a degree.
- The school that teaches the most similar course at Georgia Tech will determine the equivalent Georgia Tech course and number of credit hours accepted. A faculty member of that school will complete the official transfer credit form, and have the school's Chair cosign it. The form should then be sent directly to the Registrar. The transfer credit form is not to be released to a student.
- If a student wishes to transfer more than six hours, a Petition to the Faculty must be submitted, along with all transfer credit documents.
- A student may not receive transfer credit from universities outside of the United States and Canada. However, an international student can obtain credit for a course previously taken but not applied toward another degree by filling out an "Examination for Advanced Standing Authorization Request Form", paying the appropriate fee at the Bursar's office, and passing an examination for advanced standing. The school or department that normally teaches the equivalent course will administer any necessary examinations.

TUITION WAIVER

Tuition waivers allow students not classified as residents of Georgia to pay the same registration fees as Georgia residents. The majority of those receiving tuition waivers are international students admitted in conjunction with agreements made with several external organizations that sponsor international students. These organizations may include WSF, LASPAU, AFGRAD, DAAD, and Fulbright.

Additional students, both US and international, may be nominated, on a term-by-term basis, in unusual circumstances, such as having lost assistantship support for their final term of enrollment. Students must ask that their advisor file a request with the Associate Chair for Graduate Studies, before CEE submits a waiver request to Georgia Tech's Graduate Studies office for final approval. This request is submitted two months prior to the start of the term for which the waivers are sought.

Students receiving tuition waivers are nominated each term by CEE, and must be full-time students on Good standing while receiving the waiver. New waivers for those currently enrolled are usually only given to Ph.D. students, and after at least one year of attendance at Georgia Tech.

SEXUAL HARASSMENT COMPLAINTS

This information can be found on the web at: <http://www.admin-fin.gatech.edu/human/action/010700.html>

Policy

It is the policy of this institute that no member of its community, including administrators, faculty, staff, or students, should be subjected to sexual harassment by another. This policy and procedure is intended to create an atmosphere in which individuals who believe that they are the victims of harassment are assured that their complaints will be dealt with fairly and effectively. Toward this end, the Georgia Institute of Technology supports the principle that sexual harassment represents a failure in ethical behavior and that sexual exploitation of professional relationships will not be condoned.

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when: (1) submission to such conduct is made, either explicitly or implicitly, a term or condition of an individual's employment or academic standing; or (2) submission to or rejection of such conduct is used as the basis for employment or academic decisions affecting the individual; or (3) such conduct has the effect of unreasonably interfering with an individual's work or academic performance or creates an intimidating, hostile working or academic environment. Both men and women may be either the initiators or victims of sexual harassment.

Bringing a Complaint

1. Any member of the Institute community who believes that he or she has been the victim of sexual harassment as defined above (the Complainant) should promptly report the matter to the appropriate institute official designated to handle such complaints.
2. The Appropriate Institute Official to whom a complaint should be made is the Director of Equal Opportunity Programs for faculty and staff, and the Dean of Students for students.
3. The initial discussion between the Complainant and the Appropriate Institute Official will be kept confidential to the greatest extent possible and dissemination of any information relating to the case will be limited, in order that the privacy of all individuals involved is safeguarded as fully as possible. The Institute will take steps to protect the Complainant from retaliatory action based upon the filing of the Complaint. The foregoing notwithstanding, the Appropriate Institute Official will inquire into all reports of alleged sexual harassment brought to his or her attention.
4. During the initial meeting with the Appropriate Institute Official, a written summary of the complaint will be made and should be signed by the Complainant.
5. The Appropriate Institute Official will inform the alleged offender ("Respondent") of the allegation and of the identity of the Complainant, will provide him or her with a written summary of the Complaint and will proceed as set forth in the following section.

Resolution of a Complaint

1. When a Complaint is submitted, the Appropriate Institute Official will discuss the matter with the parties promptly, will notify the appropriate Dean or Vice President of the charge, and will initiate whatever steps he or she deems appropriate to effect an informal resolution of the complaint acceptable to both parties. If an informal resolution is reached, it will be documented in writing, approved by the Office of Legal Affairs, and signed by the Complainant, the Respondent, and the Appropriate Institute Official.
2. If an informal resolution satisfactory to the Parties is not reached within 15 calendar days after an incident is reported, or if in the opinion of the Appropriate Institute Official, an informal resolution is not possible, the Appropriate Institute Official will proceed with a full investigation. The investigation may include interviewing witnesses identified by the parties and such other inquiries as the Appropriate Institute Official may deem necessary. A report of the investigation results along with a recommendation with regard to a resolution of the Complaint and/or disciplinary action will be made to the Associate Vice President for the Office of Human Resources within 30 days of the date the investigation was initiated.

The Associate Vice President for Human Resources or the Vice President for Student Affairs will review the results of the investigation and take or recommend appropriate disciplinary and/or other action. Individuals subject to disciplinary action may exercise their appeal rights pursuant to the procedures set forth in the Faculty Manual, the Classified Employee Handbook, or the Student Conduct Code as appropriate.

HONOR CODE

The members of the Georgia Tech Community believe that the fundamental objective of the Institute is to provide the students with a high quality education while developing in them a sense of ethics and social responsibility. We believe that trust is an integral part of the learning process and that self-discipline is necessary in this pursuit. We also believe that any instance of dishonesty hurts the entire community. It is with this in mind that we have set forth a Student Honor Code at Georgia Tech. An Honor Code at Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor.

Students are expected to act according to the highest ethical standards. The immediate objective of an Honor Code is to prevent any students from gaining an unfair advantage over other students through academic misconduct. Academic misconduct is any act that does, or could, improperly distort student grades or other student academic records.

Of particular concern at the graduate level is Scholarly Misconduct, which refers to misconduct that occurs in research and scholarly activities outside of the classroom. It can include plagiarism, among other things. The consequences of scholarly misconduct are governed by Institute policy. The following definitions are taken from the Institute's Policy on Scholarly Misconduct.

"Misconduct" or "Scholarly Misconduct" is the fabrication or falsification of data, plagiarism, or other practice that seriously deviates from those that are commonly accepted within the academic or research community for proposing, conducting, or reporting research or scholarly activity. It does not include honest error or honest differences in interpretation or judgments of data.

"Plagiarism" is the act of appropriating the literary composition of another, or parts or passages of his or her writings, or language or ideas of the same, and passing them off as the product of one's own mind. It involves the deliberate use of any outside source without proper acknowledgement. Plagiarism is scholarly misconduct whether it occurs in any work, published or unpublished, or in applications for funding.

The complete text of the Honor Code can be found via Georgia Tech's web site, specifically at:
<http://www.honor.gatech.edu/>

A Graduate Appendix to the Honor Code is located at:
<http://www.honor.gatech.edu/plugins/content/index.php?id=9#appendixA>

MOVING FROM MS TO PH.D.

Students enrolled in a Masters degree program in CEE, who later wish to apply to the Ph.D. program, need only to submit a new Personal Statement and three new Letters of Recommendation (preferably from Georgia Tech faculty), to CEE's Student Services office. There are no set dates or deadlines for such applications, however students should realize that the faculty's evaluation process is the same as that for new applicants to the School, and it may take some time before a decision is issued on the application.

International students may be required to submit current financial support documents, before updated visa materials can be issued.

GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

CHAPTER VI

REGISTRATION

Registration for each term will take place during set times the later part of the previous term. Registration will reopen again a few days prior to the term's start of classes. These dates are subject to change, and the Registrar's Office web site (<http://www.registrar.gatech.edu/>) should be consulted for official dates.

All information on registration dates, access, and Institute's schedule for a given term, can be found online at <https://oscar.gatech.edu/>. This registration system is commonly referred to as the OSCAR, which is an acronym for **On-line Student Computer Assisted Registration**. The information is also available on the WEB, usually the week prior to the opening of registration, at: <http://oscar.gatech.edu>

Registration resumes the week prior to the start of classes, through part of the first week of classes. Check the OSCAR for the date that registration closes. **NO** schedule changes can be made after the close of registration.

ACCESS TO REGISTRATION

The only data required to enter the OSCAR system is a Georgia Tech ID Number, and a Personal Identification Number (PIN). The PIN for new students is their 6-digit birthdate (MMDDYY). Upon entering the registration system, students should change their PIN to a personal code, which should be treated as their password into registration.

FEE PAYMENT

All fees must be paid to the Bursar's Office prior to the first day of classes. Fees paid after this date face a \$75 Late Payment Fee. The latest time to pay fees is at the close of registration for the term. Although previously enrolled students face the Late Payment Fee during this period, new students registering and paying during late registration will NOT have to pay the late payment fee. All payments must be *received* (not postmarked) by the term's deadlines.

REGISTRATION HOLDS

A Hold, preventing a student from being able to register, may be placed by any department on campus to which a student has an outstanding obligation (Bursar, Library, Parking, etc.). New students may also have holds placed by Health Services or Enrollment Services, if all required documents are not on file at the time of enrollment. CEE may also place holds under certain circumstances. To have a hold removed, the student must contact the office placing the hold, and remedy the situation that led to the hold. A hold can only be removed by the office placing it.

OVERLOADS

Overloads are used to give a student access to courses that are already full. Each academic department handles the overload policy of their respective courses. CEE's Student Services office handles all overloads for CEE. Some overloads are given out the preceding term, during early registration; this is usually only done for graduating students. Students should be aware that they might not obtain registration access to particular courses due to limitations of classroom size and/or curriculum needs.

PERMITS

Some Special Topics or Special Problems courses may require permits for registration; these are generally individualized courses arranged with a specific faculty member. Additionally, some courses may be restricted to certain students (ex.: CE Majors or Graduate Students). CEE's Student Services office handles the processing of permits for CEE courses.

NOTE: The permit DOES NOT register the course; you must do this yourself after the permit has been posted.

If a permit is needed for a course from another department, you should contact that department directly.

VARIABLE HOUR COURSES

Some courses do not have a fixed credit hour value. Courses such as Thesis hours, Special Problems, and Assistantship hours must be scheduled for a specific number of credit hours when registered. The registration system will default these courses to one hour of credit. Students must change the credit hour total to the proper amount during the registration process (by selecting "Change Course Options" on OSCAR).

***** Once registration is over, changes to credit hours are NOT possible. *****

GRADE BASIS

There are three grade basis possibilities, Letter-Grade, Pass/Fail, and Audit. Some courses offer all three options, some only one or two. When multiple options are available, the registration system will default to Letter-Grade (if this option is available). If a different grade basis is desired than the default, then the student must change during the registration process (by selecting "Change Course Options" on OSCAR).

***** Once registration is over, changes to grade basis are NOT possible. *****

COURSE DROP/ADD AND WITHDRAWAL

You may drop and add courses to your schedule throughout registration at no charge, except for any changes in fees that may result when scheduling less than 12 hours.

***** AFTER REGISTRATION HAS CLOSED FOR THE TERM, NO COURSES CAN BE ADDED, OR CHANGED, ON YOUR SCHEDULE. *****

Courses may be dropped from your schedule through "Drop Day", which is somewhat prior to mid-term. Complete withdrawal (from all courses) may be done through "Withdrawal Day" which is several weeks after "Drop Day". Courses dropped after the close of registration will remain on the transcript, with a grade of "W". A Petition to the Faculty is required to drop any course after "Drop Day", or to completely withdraw from school after "Withdrawal Day". Dates for "Drop Day" and "Withdrawal Day" are listed on OSCAR.

GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

CHAPTER VII

DEGREE REQUIREMENTS

MASTER'S DEGREE

Four Master's degrees are available within the School of Civil and Environmental Engineering program: Master of Science in Civil Engineering (MSCE), Master of Science in Engineering Science and Mechanics (MSESM), Master of Science in Environmental Engineering (MSENE), and the undesignated Master of Science (MS). Common requirements for these degrees are listed below; CEE's Faculty Groups may have additional requirements for graduation, or for receipt of a specific degree.

- Minimum of 30 semester hours of course work, none of which was used to satisfy requirements for a previous degree, are required. The student's advisor and the Associate Chair for Graduate Programs must approve the program of study.
- At least 21 of 30 course credit hours must be at 6000 level or higher (12 of 24 hours if writing a thesis). Courses required for the BSCE degree cannot be used toward a graduate degree. Courses at the 1000 or 2000 level can NOT be counted toward the Master's degree.
- Other than thesis hours, only three of the 30 hours counted toward the degree may be taken on a Pass/Fail basis, with the approval of the advisor and Associate Chair for Graduate Programs.
- Courses with grades of "D", "F", "U", "V" or "W" may NOT be listed on the final Program of Study..
- M.S. students must either (a) complete 30 hours of course work or (b) complete 24 hours, write an M.S. thesis, and schedule at least six hours of CEE 7000. No more than six hours of CEE 7000, or three hours of CEE 8956, may be counted as part of the 30 hours required for the M.S. degree.
- Students writing a thesis must take at least 12 hours of course work in their major field. Students not writing a thesis must take at least 18 hours of course work in their major field.
- Students who complete both the bachelor's and master's degrees in the School of Civil & Environmental Engineering may use up to six credit hours of graduate-level course work (6000 or higher level courses) in the major discipline for both degrees. In order to qualify for this option, the student must complete the undergraduate degree with a cumulative GPA of 3.5 or higher and complete the master's degree within two years after the award of the bachelor's degree. Up to an additional twelve hours of graduate level courses, taken while an undergrad (but not counted toward BSCE), may be used toward the Masters, although some restrictions apply.
- Students writing a thesis must file with the Office of Graduate Studies and Research an approved thesis topic, and submit the final thesis online. The MS Thesis Topic Approval Form can be downloaded at: <http://www.grad.gatech.edu/thesis/index.html> This site is also where students can find information on the Institute's formatting requirements for the thesis document
- The M.S. thesis, as well as Special Research Projects, must be submitted to review committee at least two weeks ahead of the institutional deadline, to allow time for faculty to read and for the student to make any corrections that may be required. The MS Thesis Committee must have at least three members, and the majority must be Georgia Tech faculty.
- The Masters program must be completed within a period of not more than six consecutive calendar years.

Students must register for a minimum of three hours during the term in which they graduate. A waiver of this enrollment requirement may be obtained only if the student is using NO institute time or resources during the term of graduation. To be eligible for an enrollment waiver, submission of the final approved thesis must be done prior to the last day of registration, and the student must have been registered the preceding term. A one-time exemption, to allow enrollment with registration of one credit hour of CEE 7000, is possible in the term of graduation, but only under certain circumstances.

Only those students who have previously earned the BSCE or its equivalent may receive the Master of Science in Civil Engineering or the Master of Science in Engineering Science and Mechanics degrees. The School awards the Master of Science in Environmental Engineering only to those students who have previously earned the BSCE or who have earned an accredited bachelor's degree in engineering and have taken those undergraduate courses (for no credit toward the M.S.) required by their advisor and the Chair. Students not meeting the above requirements but satisfying all prerequisites for the courses in their M.S. program, receive the undesignated Master of Science degree.

DOCTOR OF PHILOSOPHY DEGREE

The Ph.D. is the highest degree awarded, and as such requires the highest level of proficiency and achievement, both in knowledge and in the performance of research presented in a written dissertation. While there are no specific course requirements, most doctoral students spend approximately two years in course work beyond the Master's degree while conducting their research activities, plus another year on full-time research. A minor field of study, consisting of a minimum of nine hours of course credit, approved by the student's thesis advisory committee, must be completed on a letter-grade basis while enrolled in the doctoral program at Georgia Tech. CEE has no Ph.D. language requirement.

Admission to the Ph.D. Program

The Ph.D. (or doctoral) program is available to selected students who have an excellent academic background and a capability for conducting independent research. Applicants must have received an acceptable master's or bachelor's degree. To meet program requirements, each doctoral student must plan an individualized program of study and research that will result in a completed dissertation. The dissertation must make a unique and significant contribution in the selected field of research. Doctoral degrees are offered in Civil Engineering, Environmental Engineering, and Engineering Science and Mechanics.

Ph.D. applicants must choose a specialty group, or specific field of study. After consulting with faculty in the appropriate specialty group, the Associate Chair for Graduate Programs grants or denies the applicant admission to the Ph.D. program in the School of Civil and Environmental Engineering.

Students currently pursuing a master's degree who wish to continue studies toward the Ph.D. degree must get written approval from the head of the appropriate group; after submitting three Letters of Recommendation and an updated Personal Statement to CEE's Student Services Office.

Admission to the Ph.D. *program* does not constitute admission to candidacy for the Ph.D. *degree*. Requirements for admission to candidacy are discussed under "The Ph.D. Dissertation" section, below.

Requirements for the Degree

The Ph.D. degree is a research-oriented degree that requires in-depth knowledge of a specific topic of study. As such, the administration of a student's Ph.D. program usually occurs within one of the five Groups in the School. Thus, all of the School's Ph.D. students are affiliated with one of the following Groups:

- Environmental Engineering
- Environmental Fluid Mechanics and Water Resources
- Geosystems Engineering
- Structural Engineering, Mechanics and Materials
- Transportation Systems

Students wishing to change from one Group to another, must obtain written permission from both the old and new Group. Because today's research often requires knowledge and skills beyond one Group's expertise, it is common to establish an interdisciplinary program of study and research. This sometimes includes areas of expertise outside of engineering. Interdisciplinary doctoral programs are strongly encouraged where appropriate.

Ph.D. students are expected to excel in classroom and research activities and to satisfy all Institute Ph.D. requirements. Significant requirements for the degree include:

- A program of study must be approved by the student's Guidance Committee and the Associate Chair of Graduate Studies. There are no fixed course requirements for the Ph.D. degree. The student must have a major and minor field of study, with the major field being in the area of the student's research. The minor field is preferably outside of the School of Civil and Environmental Engineering and must include at least nine hours of course work, taken on a Letter-Grade basis, with grades of "C" or better.
- The minor must be approved by the Office of Graduate Studies. Although the Program of Study can be approved before all coursework is completed, a separate Minor Letter must be submitted for approval AFTER minor courses have been completed.
- Pass a Ph.D. comprehensive (qualifying) examination consisting of written and oral portions.
- Present and orally defend a written Ph.D. Dissertation Proposal
- Submit an approved "Request for Admission to PhD Candidacy" form.
- Complete a Ph.D. dissertation.
- Pass an oral Doctoral Examination on the dissertation.
- Submit a petition for the degree. All above items, except Ph.D. dissertation and oral Doctoral Exam, must be submitted before a degree petition will be approved by School of CEE.

Students must register for a minimum of three hours during the term in which they graduate. A waiver of this enrollment requirement may be obtained only if the student is using NO institute time or resources during the term of graduation. To be eligible for an enrollment waiver, submission of the final approved thesis must be done prior to the last day of registration, and the student must have been registered the preceding term. Students must be registered during the term in which their Final Thesis Defense takes place. A one-time exemption, to allow enrollment with registration of one credit hour of CEE 9000, is possible in the term of graduation, but only under certain circumstances.

All requirements for the Ph.D. degree must be completed within seven years from the end of the term in which the student passes the Ph.D. comprehensive examination. All work to be applied toward satisfying the requirements for the Ph.D. degree must have been completed within ten years of the first term of residence.

Sequence of Events

Candidates for the Ph.D. degree in the School of Civil and Environmental Engineering must pass a Comprehensive Examination, consisting of written and oral portions, a Dissertation Proposal Examination, and a Doctoral Examination. Details regarding the written and oral portions of the Comprehensive Examination, Dissertation Proposal Examination, and Doctoral Examination are presented below.

Ph.D. Advisor

During the first term of residence, the student should select an advisor. The thesis advisor shall be a member of the Academic Faculty (with approval of the school Graduate Committee; an adjunct faculty member appointed for the specific purpose of advising graduate students may serve as the thesis advisor). The student and advisor should collaborate to (1) identify a research area and, eventually, a specific research topic and (2) develop a program of study, including a minor field of study, which will advance the student's knowledge and contribute to the completion of his/her dissertation. The student and advisor may establish a committee for this purpose if deemed beneficial (e.g., in the case of a multidisciplinary research topic). The program of study is reviewed by four faculty members in the student's group and should be submitted to the Associate Chair for Graduate Studies for approval when the student takes the comprehensive exam.

Ph.D. Comprehensive Examination

The Ph.D. Comprehensive Examination is intended to evaluate whether the student is well based in fundamental principles in his/her field of study and has the skills necessary to perform independent research. Students are strongly encouraged to take the Comprehensive Exam within 12 months of entering the Ph.D. program. In special circumstances (e.g., students entering the Ph.D. program directly from an undergraduate degree), the Comprehensive Exam should be taken within 24 months of entering the Ph.D. program, typically after completing a significant

portion of the student's program of study. Students taking the Comprehensive Exam shall be informed as to the scope of the exam.

The Comprehensive Exam is administered by individual groups within CEE and must include both written and oral examinations. The specific format and procedures used for the Comprehensive Exam may vary from group to group. The Comprehensive Exam will be offered by each group at least once per year. The Associate Chair for Graduate Studies and the Graduate Committee provide oversight to assure that minimum requirements are met. Specific exam procedures for each group are included in Appendix xx.

A representative of each group will inform the student and the Associate Chair of Graduate Studies of the results of the examination. Criteria for passing/failing the written portion of the exam, including procedures for re-examination, will be determined by individual groups. If the student fails the first oral examination, a second must be taken within 12 months of the first examination. If the student does not take the second examination, or if the student fails the second examination, the student will be dismissed from the Ph.D. program.

Ph.D. Dissertation Advisory Committee

Within 6 months of passing the Comprehensive Examination, the student should form a Ph.D. Dissertation Advisory Committee. The committee (1) critically reviews the Ph.D. Dissertation Proposal including the oral proposal defense, (2) provides advice and guidance during the research process, and (3) critically reviews the Ph.D. Dissertation.

Members of the Dissertation Advisory Committee are recommended by the student and advisor and approved by the Associate Chair for Graduate Studies and Graduate Committee. The committee must consist of at least three members with earned doctorates (or equivalent degree) including the student's advisor. At least two committee members must be tenured or tenure-track faculty in the School of Civil and Environmental Engineering. The Dissertation Advisory Committee may also include members from outside Georgia Tech if deemed beneficial. For the latter, a brief vita should be included with the recommendation letter.

Ph.D. Dissertation Proposal

Within 12 months of passing the Comprehensive Examination, the student should present and orally defend a written Ph.D. Dissertation Proposal before the Dissertation Advisory Committee. Following a successful defense of the Ph.D. Dissertation Proposal and completion of the minor courses, the student is admitted to Ph.D. candidacy by the Institute.

The Ph.D. Dissertation Proposal provides an opportunity to evaluate the merits and feasibility of the student's proposed research topic and to provide guidance to the student to help assure successful completion of his/her Ph.D. Dissertation. The proposal shall be prepared by the student with guidance, review, and oversight by the advisor and others as appropriate. The proposal shall reflect an in-depth review of relevant literature within the field and should clearly state the purpose, scope, methodology, and expected contributions from the research. The proposal should not exceed 25 pages (1.5 line spacing) and should include a statement of research objectives and scope, review and critical appraisal of the state of the art, technical approach, and expected research products. The proposal should adhere to the format guidelines of the Institute thesis manual (http://www.grad.gatech.edu/thesis/thesis_man.html).

The Ph.D. Dissertation Proposal should be submitted to the Ph.D. Dissertation Advisory Committee at least 14 days prior to the scheduled oral defense. The Ph.D. Dissertation Advisory Committee should critically evaluate the written Ph.D. Proposal and oral defense to decide whether the proposal research plan meets the required level of scholarship and that the student can effectively communicate the research plan in a clear manner. Following a successful defense, the student's advisor will notify the Associate Chair of Graduate Students of the successful completion of the dissertation proposal and oral defense, and the Ph.D. Dissertation Advisory Committee will recommend to the Associate Chair of Graduate Studies and CEE Graduate Committee that the student be admitted to Ph.D. candidacy by signing and submitting (with no more than one dissenter) the Request for Admission to Ph.D. Candidacy form. In the event of an unsuccessful defense, the student must submit a revised proposal and schedule another oral defense no later than 6 months after the first attempt. If the student does not submit a second proposal, or if the student also fails the second defense, the student will be dropped from the Ph.D. program.

Admission to PhD Candidacy

Following completion of the Comprehensive Exam and successful defense of Ph.D. Dissertation Proposal, the student should submit the "Request for Admission to PhD Candidacy" form. This form contains a brief summary of the thesis topic and signatures of the student's committee. This form can be downloaded at: <http://www.grad.gatech.edu/thesis/index.html>

Doctoral Examination (Thesis Defense)

After the student's advisor has completed an editorial review of the dissertation and has found it to be satisfactory, copies of the dissertation will be distributed to the student's Doctoral Examination Committee and the final oral Doctoral Examination will be scheduled. The student must submit the completed dissertation to the Doctoral Examination Committee no later than 14 days prior to the scheduled defense. This examination will be conducted by a Final Doctoral Examination Committee. This committee consists of at least five members and always contains the Dissertation Advisory Committee. At least one member of the Final Doctoral Examination Committee must be from the academic faculty of a School outside of Civil and Environmental Engineering. The Final Doctoral Examination Committee is recommended by the School to the Dean of the Graduate Division for approval.

A notice of the Doctoral Examination, including time and place, will be posted at CEE facilities, and sent to all CEE faculty, with copies to all other engineering schools at Georgia Tech. This must be done at least 14 days prior to the scheduled examination. The examination is open to all faculty, staff, and students.

A vote, with no more than one dissenter, of the Doctoral Examination Committee is required to pass the examination. Results of the examination are reported in writing to the student, the Associate Chair of Graduate Studies, and the Dean of the Graduate Committee by the Chair of the Examining Committee. If the student fails this final examination, one additional examination is permitted if recommended by the Examination Committee. The second examination is to be scheduled within 12 months of the first exam. If the student does not submit a revised thesis, or if the student also fails the second defense, the student will be dropped from the Ph.D. program.

Exception to the Procedures

Any exceptions to these procedures must be reviewed through petition of the Graduate Committee in the School of Civil and Environmental Engineering; approval must be granted by the Committee and the Associate Chair for Graduate Studies.

Procedures are effective for students commencing study Fall semester 2008. Students enrolled prior to that term are grandfathered under the previous published procedures.

Summary of Committees

In order to maintain continuity throughout the student's Ph.D. program, the advisor should try to maintain the same faculty in as many of the committees below as possible.

- Comprehensive Examination Committee
Membership determined by each Faculty Group.
- Dissertation Advisory Committee
At least three members.
- Final Doctoral Examining Committee
At least five members, and always contains the Thesis Advisory Committee. At least one member must be from the academic faculty outside of the School of Civil and Environmental Engineering.

Timeline of Ph.D. Program

Letters required by the School	When due	Author
Appointment of Ph.D. Comprehensive Examining Committee	Within 24 months of entering PhD program ^{1,2}	Chair, Exam Committee
Comprehensive Exam results	After taking comp exam	Chair, Exam Committee
Program of Study	To be filed at time of comprehensive exam, after approval of four faculty in research group	Student and Advisor
Request for Admission to Ph.D. Candidacy	After passing comp exam and selecting research topic	Student and Advisor
Minor letter	After passing comp exam, selecting research topic, and completing Minor courses	Student and Advisor
Appointment of Dissertation Advisory Committee	Within 6 months of passing comprehensive exam	Advisor
Thesis proposal defense	Within 12 months of passing comprehensive exam, submit written dissertation proposal and orally defend proposal ³	Advisor
Appointment of Doctoral Examination Committee	After approval of thesis by Dissertation Advisory Committee	Advisor
Thesis Defense Announcement	At least 14 days prior to defense	Student
Thesis Defense Results ⁴	After thesis defense	Chair, Exam Committee
Degree Petition	Term prior to graduation	Student

¹ If the Oral Comprehensive Exam is failed, it must be retaken within 12 months

² The Comprehensive Exam is administered by the student's primary research group

³ If the Dissertation Proposal is not successfully defended, it must be rescheduled within 6 months of the original defense

⁴ If the thesis is not successfully defended, a second defense must be scheduled within 12 months of the original defense

GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

CHAPTER VIII

GRADUATION

DEGREE PETITION PROCESS

As a student approaches the completion of their degree program, the degree petition process must be completed to formally request departmental and institutional approval leading to the awarding of the degree. Several steps must be taken and forms submitted to complete this process.

Students applying for any graduate degree must complete the “Graduate Petition for Degree” form. The form can be found at: http://www.registrar.gatech.edu/docs/pdf/GRAD_PETITION_FOR_DEGREE.pdf

Students applying for Ph.D.s need not complete Sections 2A, 2B, and 2C of the form (all doctoral requirements, except Ph.D. dissertation and final thesis defense, must be satisfied before a Ph.D. degree petition will be approved by School of CEE). If a degree petition has been submitted previously, for the same program, check the “Reactivation” box on the form.

For Master’s petitions, Sections 2A and 2B of the form should include all courses taken, and expected to be taken, respectively, which will count toward the hours required for the Masters degree. Do not include courses which will not be counted (i.e.: Audit, Thesis or excess Pass/Fail courses). Courses taken within your area of concentration in CEE should be marked with an “X”, and their credit hours totaled at the bottom of the form, in the space marked “Credit Hours in Major Field”. Credit hours for courses at the 6000-9000 level should be totaled in the space marked “Credit Hours 6000-9000 level”. Finally, the total number of credit hours to be used toward the MS degree should be totaled on the bottom line. Your advisor must review, approve, and sign the degree petition. Examples of both a blank and a completed form can be found in the appendix to this handbook.

Detailed instructions for completing the Petition for Degree are listed on the first page of the form.

Degree petitions must be submitted the term prior to that in which you plan to graduate. Specific deadline for degree petitions are listed in the Official School Calendar. CEE’s deadline for submission will be several days before the deadline listed in the OSCAR.

After petition has been completed, and signed by the advisor, submit the form to the CEE Student Services Office for review and final signature. If there may be any problem or question, you will be notified by email. The approved forms will then be sent to the Registrar’s Office by CEE’s Student Services Office.

Master’s degree candidates should note that the degree petition is considered your final course listing by the Registrar. If not registering for any course listed on your Program, contact your advisor, and ask them to inform the CEE Student Services Office of approved changes to your Program.

The Registrar’s office will e-mail you if any deficiency is identified. If you receive notice of a deficiency that you do not understand, or can not fulfill on your own, contact the CEE Student Services Office.

MONITOR DEGREE STATUS

Graduation status can be checked on the WEB, through the registration system. After logging-in, select the “Student Records Information Menu”, followed by the “Display Degree Candidate Information” option. Degree status should be checked several times through the final term, not only to learn of any deficiency that may be noted, but also to confirm that your name is spelled correctly and that you are being awarded the appropriate degree.

It is the student’s responsibility to follow-up on any deficiencies, and to keep the Registrar and CEE’s Student Services Office aware of any changes in status.

DEGREE REQUIREMENTS

Refer to Chapter VII of this handbook, “Degree Requirements”, for details on the requirements for the Masters and Doctoral degrees, respectively.

ENROLLMENT REQUIREMENT AND WAIVER

All degree candidates are required to register for at least three hours their final term. If ALL requirements have been satisfied and documents submitted (i.e. thesis), then you may be eligible for an Enrollment Waiver. To be eligible for an Enrollment Waiver, all course work must be completed and final thesis submitted prior to the last day of registration in the term of graduation, and the student must have been registered the preceding term. The waiver form must be submitted by the close of registration in the term of graduation. The waiver form is submitted to the Graduate Studies office, the same place where the thesis is turned-in. It is recommended that the enrollment waiver form be submitted at the same time as the final thesis.

If a student needs only to complete their thesis, then, with approval of their advisor, they can register for only one thesis hour of credit their final term. This exception to the three-hour minimum can be used only once per degree.

REACTIVATION OF PETITION

If you do not graduate in the term for which you petitioned, you must reactivate your degree petition by the close of the next term’s registration, in order to graduate at that term’s commencement. The Petition for Degree must be submitted again, with “Reactivation” indicated on the form. The advisor must again sign the petition. CEE’s Student Services Office will again review the petition, and forward it to the Registrar.

The reactivated degree petition must be submitted by the close of the following term’s registration.

GRADUATE HANDBOOK

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CHAPTER IX

SERVICES AVAILABLE TO GRADUATE STUDENTS

BURSAR'S OFFICE

All institute related fees are paid to the Bursar's office, and questions regarding any financial debts owed to Georgia Tech should initially be directed to the Bursar. The Bursar's office is located on the Ground floor of the Lyman Hall building, on the loop that circles the Administration building (a.k.a. Tech Tower), between the Student Success Center and the French building. The Bursar's Office web site is: <http://www.bursar.gatech.edu/>

COMPUTER SERVICES

The Office of Information Technology (OIT) provides technology leadership and support to all members of the Georgia Tech community. Its mission is to serve the campus in several critical areas, including customer service and educational technologies.

OIT issues computer accounts to all students, faculty, and staff for institute-related activities such as Internet access, electronic mail, electronic publishing, information and database storage and retrieval, homework, and class assignments. OIT consists of several divisions, including the Customer Support Center (CSC), which provides front line support to campus users. The OIT web site is: <http://www.oit.gatech.edu/>

DISTANCE LEARNING - VIDEO PROGRAM

The Video-Based degree option is handled by the Distance Learning office. Several Master's degree programs in the College of Engineering are available through this program. Environmental Engineering is the only CEE Group currently offering the video option. The video program can be contacted at 404-894-3378, or via their web site at: <http://www.dlpe.gatech.edu/dl/>

GRADUATE COOPERATIVE PROGRAM

Selected students planning to enroll for graduate study at Georgia Tech have the opportunity to participate in a unique cooperative program leading to advanced degrees in participating schools. Two plans are available. One is designed for Georgia Tech undergraduates who plan to continue as graduate students at Georgia Tech and includes study-work periods that span both undergraduate and graduate levels. Eligibility is based on academic achievement. The second plan is for graduate students whose undergraduate degree may be from either Georgia Tech or other institutions.

Degree requirements for co-op students are identical to those for all other students. The Graduate Cooperative Plan is designed as an enhancement to the educational programs of students working for advanced degrees and offers the benefits of added facilities and opportunities for external stimulation. In addition, students receive compensation for their services from companies that employ them.

Interested students should contact the Graduate Co-Op office, on the first floor of the Savant Building, on Cherry Street, near the Administration building (a.k.a. Tech Tower), call 404-894-3320, or visit their web site, at: <http://www.gradcoop.gatech.edu/>

GRADUATE STUDENT GOVERNMENT

The Graduate Student Government (GSG) serves as the governing body of the graduate student body. As part of the Student Government Association (SGA), it is responsible for representing the interests of the graduate student body, as well as distribution of money collected through the student activity fee. All graduate students are citizens of the GSG. As most governments, GSG exists as three distinct parts: the legislative, executive, and judiciary branches. Each school's students elect representatives to the Graduate Student Senate, as well as the GSG officers. GSG is also represented on various institute committees and governing boards. The GSG office is located in the Student Services building. Correspondence can be sent to GSG at campus mail code 0289. Their web site can be found at: <http://www.cyberbuzz.gatech.edu/sga/grad/>

STUDENT HEALTH CENTER

The Student Health Center is a quality managed Health Care facility that provides medical and health education to eligible students and spouses. The staff consists of general practice, family practice, and internal medicine physicians, nurse practitioners, registered nurses, medical and radiological technologists, pharmacists, and health educators. Services at the Health Center are rendered in the Primary Care Center and in the Wellness Center.

Medical care can be obtained by online scheduling of an appointment. The Health Center is located on Ferst Drive, next to the Campus Recreation Center. Their web site is located at: <http://www.health.gatech.edu/>

Information on Health and Immunization forms (submitted prior to enrollment) can be found at: http://www.health.gatech.edu/new_students/steps.htm

HOUSING OFFICE

Georgia Tech is a residential campus community with half of all full-time students living in residential facilities. In an effort to meet the unique needs of graduate students, the Housing Office has designated apartment-style facilities to house graduate students. The Housing Office understands that students with families have special needs; and seeks to provide comfortable, safe, and secure family housing units for students, their spouses, and their children. Two sets of apartments are available for students with families, one on North Avenue, and the other on 10th Street.

The Housing Office is located on the first floor of the Student Services building (next to the Student Center). The web site is: <http://www.housing.gatech.edu/>

OFFICE OF INTERNATIONAL EDUCATION (OIE)

The OIE department provides services and programs for two groups: over 1,000 international students from approximately 90 countries; and international exchange visitors. These students and exchange visitors receive assistance in maintaining status with the U.S. Immigration and Naturalization Service and in adjusting to Georgia Tech and American society. In return, many of the students and exchange visitors work with the OIE staff to develop programs promoting intercultural understanding.

The OIE office is located on the second floor of the floor of the Savant Building, on Cherry Street, near the Administration building (a.k.a. Tech Tower). The phone number is 404-894-7475, and web site is at: <http://www.oie.gatech.edu/>

LIBRARY

The Georgia Tech Library and Information Center houses one of the nation's largest collections of scientific and technical information. Its holdings in management and architecture are also significant. The catalog record of the Library is on line, as part of the Georgia Tech Electronic Library (GTEL), and is available to faculty, staff, and students through the computer network. The Library web site is at: <http://www.library.gatech.edu/>

Services provided by the Library include delivery of library materials to faculty and staff, computer searches of more than 500 commercial and government produced databases, copying facilities, fee-based services to sponsored research users, access to and delivery of materials from 11 other libraries in the Atlanta area, and borrower cards for major U.S. research libraries and libraries of all institutions in the University System of Georgia.

The library offers training that is targeted specifically for CEE graduate students, on the use of facilities and resources. Training sessions are scheduled at the beginning of Fall term, or students can contact the reference librarian for individual training sessions. Ms. Lisha Li is the Reference Librarian who works with CEE; she can be reached at 404-385-7185, or via email at lisha.li@library.gatech.edu

REGISTRAR

The Registrar's Office is responsible for recording and maintaining all official institute academic records and calendars. Various areas of the Registrar's Office handle student records, registration, degree certification, readmission, transfer credit, and residency. The Registrar is located on the first floor of the Administration building (a.k.a. Tech Tower). The Registrar's Office web site is at: <http://www.registrar.gatech.edu/>

GRADUATE HANDBOOK

School of Civil & Environmental Engineering - Georgia Tech

APPENDIX

SAMPLES OF FORMS

Petition to the Faculty
Application for Readmission
Request for Change of Academic Major
Petition for Degree (blank)
Petition for Degree (example of completed form)
Approved Program of Study (blank)
Approved Program of Study (example of completed form)
Enrollment Waiver Request
Request for Approval of Master's Thesis Topic

EXAMPLES OF LETTERS DUE IN THE COURSE OF PH.D. PROGRAM

Appointment of Ph.D. Guidance Committee
Ph.D. Program of Study
Appointment of Ph.D. Examining Committee
Notification of Comprehensive Exam Results
Minor Letter
Appointment of Thesis Advisory Committee
Appointment of Final Doctoral (Oral Defense) Committee
Thesis Defense Announcement
Notification of Defense Results
Request for Admission to Ph.D. Candidacy
Documents Due With Thesis

PURPOSE AND EDUCATIONAL OBJECTIVES OF THE GRADUATE PROGRAMS

The purpose of the School of Civil and Environmental Engineering's graduate programs is to prepare MS and Ph.D. graduate students for the practice of their profession - graduates who are able to identify, analyze, and solve civil and environmental engineering problems and communicate their solutions and ideas to others. In general, the MS (non-thesis) graduate is expected to become a practicing engineer. The MS (thesis) graduate may become a practicing engineer or join an organization that requires practice of the profession as well as research. The Ph.D. graduate is expected to join an organization that requires advanced knowledge and research abilities. Doctoral graduates are also expected to conduct research that leads to the advancement of the scientific and technological base of the discipline.

In particular, the educational objectives for the MS degree program are that the program will:

- Educate a new generation of civil and environmental engineers who are able to conceptualize, analyze, and recommend courses of action to solve problems.
- Provide a depth of knowledge in a particular field of study that allows students to apply innovative technological approaches to problem solving.
- Provide a breadth of knowledge that fosters an awareness of and skill in interdisciplinary approaches to problem solving.
- Promote the ability for students to communicate effectively.
- Provide exposure to the context of civil and environmental engineering so that students understand the economic, business and environmental consequences of actions.
- Promote a sense of scholarship, leadership, and service among our graduates.
- Promote a sense of need for life-long learning during a graduate's career.

The educational objectives for the Ph.D. program are that the program will:

- Educate a new generation of civil and environmental engineering professionals who will contribute to the knowledge base of our profession.
- Provide a strong scientific and engineering grounding in civil and environmental engineering theory and practice so that doctoral graduates can develop rigorous experimental designs and understand the practical applications of their research results.
- Provide an educational experience that prepares a student for a career in teaching, research, and/or advanced professional and industrial practice.
- Promote effective communication among our graduates.
- Promote a sense of scholarship, leadership, and service among our graduates.
- Ensure that graduates are self-sufficient, motivated to succeed in their careers, and that they recognize the need for life-long learning.

EXPECTED STUDENT OUTCOMES FROM THE GRADUATE PROGRAMS

MS graduates are expected to:

- Conceptualize and solve advanced engineering problems or conduct experiments including the use of analysis methods and interpretation of data.
- Have an in-depth knowledge in one field of study that provides technical expertise in problem solving and for the understanding of consequences of engineered solutions.
- Have a breadth of knowledge that provides an overall understanding for the implications of the civil and environmental profession in a global context, and for being effective in dealing with such issues as sustainable technology, environmental impacts, and life-cycle analysis.
- Apply scientific and engineering principles to the solution of civil and environmental engineering problems.
- Participate effectively in multi-disciplinary teams.
- Have an understanding of professional ethics and the responsibilities of engineers to society.
- Communicate effectively, both orally and in writing.
- Be aware of the need for life-long learning in their professional career.

Ph.D. graduates are expected to:

- Demonstrate mastery of doctoral-level coursework in a chosen area of concentration.
- Be familiar with the state-of-knowledge in their chosen research area.
- Be capable of original independent research in a chosen research area that is based on creativity, independent action, and the scientific method.
- Communicate the results of research and creative engineering solutions both orally and in writing.
- Be familiar with the contextual nature of the research they are conducting including the ethical, environmental, and societal consequences of their work.
- Work in multi-disciplinary teams for research and/or creative problem solving.
- Be aware of the need for continuous life-long learning in their professional career.
- Be effective in all aspects of a university career (for those choosing such careers).

Additionally, the School also monitors one program-level outcome. The School seeks to be a nationally recognized program by its peer institutions.