

GEOSPATIAL COMPUTER SCIENCE DOCTORAL STUDENT HANDBOOK

Academic Year 2018-2019



**TEXAS A&M UNIVERSITY
CORPUS CHRISTI**

COLLEGE OF SCIENCE AND ENGINEERING

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*This handbook is intended to be read in conjunction with the Graduate Catalog: <http://catalog.tamucc.edu/index.php?catoid=16>
and College of Graduate Studies Doctoral Student Handbook
http://gradschool.tamucc.edu/assets/doctoral_files/doctoral_handbook.pdf*

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SECTION I: GEOSPATIAL COMPUTER SCIENCE PROGRAM

Introduction

This handbook provides guidance to students applying for and enrolled in the Geospatial Computer Science (GSCS) doctoral degree (Ph.D.) program at Texas A&M University-Corpus Christi (TAMUCC). It contains information about the requirements for successfully completing the degree, the course of study, selecting an advisor and a graduate committee, choosing a dissertation research topic, admission to degree candidacy, the dissertation defense, and the final oral examination. This handbook should be used in conjunction with the Graduate Catalog: <http://catalog.tamucc.edu/index.php> and the procedures outlined in the College of Graduate Studies (CGS) Doctoral Student Handbook available at http://gradschool.tamucc.edu/assets/doctoral_files/doctoral_handbook.pdf. The GSCS Handbook lists requirements specific to the GSCS program above and beyond what is already described in those two documents. CGS policies and procedures take precedence over those in this handbook.

The CGS Doctoral Student Handbook also contains detailed instructions for preparing the dissertation manuscript. An updated version of this handbook will be published each academic year. As with the graduate catalog, the rules of the handbook that are in effect at the time of entry into the program will apply.

About a Ph.D. in Geospatial Computer Science (GSCS)

The GSCS Ph.D. at TAMUCC is an interdisciplinary program with a strong emphasis on developing the theory of computer science for handling and processing geospatial data and exploring emerging technologies enabled by Geographic Information Science (GIS). The GSCS program is a unique combination of computer science and GIS, with a technical and theoretical foundation in computer science. For more information about the incentives of the GSCS program, please visit <http://sci.tamucc.edu/CSCI/GSCS/>.

The GSCS Ph.D. objectives are to:

- Develop graduates who will become experts in computer science, especially in the realm of geospatial computing.
- Produce graduate researchers/faculty who will have the ability to obtain careers in higher education, government, and industries related to or affected by GIS.
- Prepare graduates to teach and conduct independent research and/or oversee such research relating to the collecting, processing, analyzing, and visualizing of geospatial data, as well as to the utilization of geospatial methods and data for developing new technologies.

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- Provide students with a rigorous preparation to use computer science by means of theoretical and applied techniques to pursue research and scholarship that will advance the state of knowledge in geospatial computing.

The learning outcomes for our graduates are to:

- Produce innovative research that advances the field of geospatial computer science.
- Participate at academic conferences and publish peer-reviewed articles.
- Obtain employment in industry, government, academia or commercial enterprises.
- Advance the science of computing to create new algorithms and applications for geospatial challenges.
- Develop the skills necessary to present research outcomes orally to a professional or general audience as well as writing for peer-reviewed journals and conference proceedings.

Geospatial Computer Science Program Staff

The Geospatial Computer Science Program staff can be found on the following website:
<http://sci.tamucc.edu/member.php?who=all&program=gscs>.

Get Connected

Most official college and program information for students is distributed on listservs. Students will be added to the GSCS listserv upon enrollment. Other listservs can be added by visiting the page <https://listserv.tamucc.edu/mailman/listinfo>, clicking on the desired option and filling in your information. This site also contains other listserv information. All new and current GSCS students should ensure they are subscribed to the following listservs below:

List Address	Description
gscs-student@listserv.tamucc.edu	GSCS Students
opportunities-list@listserv.tamucc.edu	Scholarships, internships, jobs, etc.
scitech-gradstudents@listserv.tamucc.edu	Science & Engineering graduate students

SECTION II: ADMISSION DETAILS

GSCS Admission Criteria

Students seeking admission to TAMUCC for graduate study must submit a complete admission application form, a nonrefundable application fee, official transcripts from all undergraduate and graduate course work, and any additional documents as required by the program the student is applying to. All documents must be submitted to the College of Graduate Studies by the appropriated deadlines. Visit http://gradcollege.tamucc.edu/degrees/science/geo_comp_sci.html for instructions on how to submit required documents.

Application Form and Submission

To apply for the GSCS program, complete the online Apply Texas Application form found on the Geospatial Computer Science Ph.D. website at:

https://gradschool.tamucc.edu/degrees/science/geo_comp_sci.html

Specific information on University criteria, application procedures, fees, and additional requirements for international applicants are found in the CGS Doctoral Student Handbook.

Program Specific Application Requirements

Below is a summary of supporting documents required by the GSCS program:

- Completed university graduate application form and paid application fee.
- Transcripts from regionally accredited institutions.
- An essay (500 - 1,000 words) discussing educational and career goals.
- A curriculum vitae.
- Graduate Record Examination (GRE) scores that are no more than 5 years old.
- Three letters of recommendation.
- Any relevant supplemental material such as resumes, cover letters, or previous publications.
- International students must submit TOEFL or IELTS scores and additional documents to the Office of Recruitment and Admissions.

<http://gradschool.tamucc.edu/international.htm>

*To be considered official, all required postsecondary academic records must be submitted directly from the registrar's office and bear the seal and signature of the registrar of the institution. In some foreign countries, the controller of examinations or principal may certify academic records. Official English translations, not interpretations, are required from most countries.

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Persons seeking admission to the Ph.D. in GSCS program must first contact the graduate faculty and identify a member willing to serve as a graduate advisor. Applicants without a graduate advisor will not be admitted to the program.

Students entering the program are expected to have adequate preparation in computer science, geographic information science, and mathematics. For computer science, this preparation must include successful completion of coursework in data structures, a high level programming language, computer architecture, and operating systems. For geospatial science, students must have successfully completed course work covering fundamentals of geographic information science and systems including spatial referencing and coordinate systems, and geospatial data analysis. In mathematics, students must have successfully completed course work in discrete mathematics, calculus, plus one additional junior level or higher mathematics course such as linear algebra, numerical analysis, or applied probability and statistics.

Students who have not successfully completed the above courses may be required to take leveling courses in any missing subjects before being formally admitted into the program. Leveling coursework does not count towards the total credit hours required for the degree. All leveling courses must be completed with a grade of “B” or better. While taking leveling courses, a student can take regular courses that can be counted towards the degree once admitted into the program formally. However, the total credit hours of such courses must not exceed nine hours.

It is the student’s responsibility to make sure that the application is complete by the deadline to assure full consideration. Acceptance into the GSCS Ph.D. program is competitive and based on consideration of all application materials. Students accepted into the program will typically have demonstrated an ability to succeed in an academically rigorous environment through high GPA and GRE scores. Relevant life experiences may also provide a substantial basis for consideration.

Application Deadlines

The GSCS has two types of deadlines: 1) priority deadlines and 2) last deadlines. All students should strive to meet the priority deadline because it is used to make decisions regarding funding or assistantships. All applications after the priority deadline and considered to be “late” applications fall under the last deadlines category. GSCS deadlines are the same for international and domestic students.

GSCS APPLICATION DEADLINES			
Domestic/International Students	Fall	Spring	Summer
Priority deadline to receive complete applications	April 30	August 1	Not Offered
Domestic/International Students	Fall	Spring	Summer
Last date for receipt of complete applications	July 15	November 15	Not Offered

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Upon acceptance or rejection, the student will be notified by the College of Graduate Studies.

Funding Opportunities

Teaching assistantships, graduate research assistantships, fellowships, or scholarships may be available to graduate students admitted as degree-seeking students who maintain full time graduate status. Funding applications can be found at <http://sci.tamucc.edu/students/gradfunding.html> and must be applied to separately based on the funding opportunity. All materials requested for evaluation must be submitted to the office indicated on that form. For full consideration to opportunities, the deadline for submitting applications is February 1 for the following academic year. Admission to the program is decided separately from funding and students must first be accepted into the program before financial awards can be considered.

Teaching Assistantships

Teaching assistantships are available each year through the College of Science and Engineering; see <http://sci.tamucc.edu/students/gradfunding.html>.

The State of Texas requires international graduate students whose native language is not English to obtain English proficiency certification before serving as graduate teaching assistants.

Research Assistantships

A limited number of research assistantships are available through research institutes or centers, and individual faculty members; consult with the institute or center directors and individual faculty members to identify these funding sources. Some graduate research assistantships are administered through the College of Science & Engineering; see <http://sci.tamucc.edu/index.html> (select “Student Information”).

Eligibility

All students who hold assistantships must be enrolled as full-time students (at least 9 graduate hours during the fall and spring semesters, and 3 hours during the combined summer session) in the GSCS program. Appointments are for two full semesters (fall and spring). Reappointment requires reapplication each year, and students should not assume that the appointment will continue automatically. Summer assistantships may be available but must be applied for separately. Check the CGS website for additional funding opportunities <http://gradschool.tamucc.edu/fundinginfo.html>.

Amounts

There is a consistent remuneration structure for all Fellowships and Assistantships that commensurate with education level and progress through the Ph.D. program.

Education Level	Monthly Stipend
B.S. and < 36 graduate hours	\$1,600
M.S. or > 36 graduate hours	\$2,000
Ph.D. Candidate (passed candidacy exam)	\$2,200

Out-of-State Tuition Waiver

Graduate Assistants are eligible for a tuition waiver that reduces tuition and fees to Texas Resident rates. However, this must be for the semester in which they hold the assistantship appointment, must work in a half-time (20 hours a week) position, and maintain a course load of 9 credit hours during the fall and spring semesters and 3 credit hours during the summer semester to be eligible for a waiver. To apply for a tuition waiver, visit the College of Graduate Studies website at <http://gradschool.tamucc.edu/funding/assistantships.html#teaching>.

Cost of Education

Graduates wanting to estimate their financial commitment can visit the following website to evaluate potential cost of attendance:

http://gradschool.tamucc.edu/funding/cost_of_attendance.html

Doctoral Orientation

Orientation is available every fall and spring semester. For additional information on this event, please visit http://gradschool.tamucc.edu/current_students/orientation.html. A special orientation session is available for doctoral students upon request by the department/program.

Topics covered include:

- The college of Graduate Studies
- The Big Picture of Doctoral Degrees
- Getting to the Doctoral Degree

SECTION III: ACADEMIC PROGRESSION

Enrollment Status

All GSCS students are expected to be enrolled full-time, which is 9 hours during the fall and spring semesters and 3 hours during the combined summer session.

In addition, all GSCS students must follow University rules governing graduate studies including, but not limited to: residency, continuous enrollment, recency of credit, leave of absence, transfer credit, degree plans, grade point average, scholastic probation, enforced withdrawal, out-of-state tuition waivers, and the Texas 99-hour rule. All of these rules are described in the College of Graduate Studies Doctoral Student Handbook and can be found at: https://gradschool.tamucc.edu/current_students/doctoral_students.html.

Fulfilling GSCS Ph.D. Program Degree Requirements

Advancement in the degree follows two periods: pre-qualification and post-qualification. The progression to a degree consists of the following steps or milestones:

1. form a committee (first year)
2. create a degree plan (first year)
3. develop a prospectus – 2 page summary of research (end of first year)
4. committee meeting and presentation about your prospectus (end of first year)
5. complete formal coursework
6. develop a research proposal (within one year of finishing formal coursework)
7. successful proposal defense (one hour public, one hour private)
8. pass qualifying exams (within one year of finishing formal coursework)
9. write dissertation
10. successful dissertation defense (one hour public, three hour private)

**Note: the timeline above is the recommended sequence to completion; however, it is the student's responsibility in coordination with their advisor to stay on track. At minimum, you should try and be no later than 1 semester from the recommended completion time as stipulated above.*

***Private portion of the proposal and dissertation defense are provided as example durations.*

A checklist for fulfilling the degree requirements is located in Appendix #3

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Doctoral Forms

Every step of the progression in the doctoral program is accompanied by a requisite form, which is created and maintained by the College of Graduate Studies. **All forms are signed electronically** and emailed to the CGS. Please submit the required forms in a timely manner. Always download the most recent version of the doctoral forms. These can be found at the College of Graduate Studies Forms and Templates page http://gradschool.tamucc.edu//contact_us/forms.html#doctoral.

In addition, the forms on this webpage also include templates for the dissertation title page, copyright page, and committee member page.

Graduation Deadlines

You must submit a completed application for graduation to your academic advisor by the posted deadline. The application must be obtained and processed through your advisor.

In order to graduate, a series of deadlines must be met. These deadlines are posted by the Graduate School at: http://gradschool.tamucc.edu//current_students/doctoral_dates.html

Commencement

For dates, times and location of the commencement ceremonies please visit <http://commencement.tamucc.edu/>.

The Graduate Advisory Committee

After being accepted into the GSCS program and enrolling, the most important first step is forming the graduate advisory committee. In collaboration with their faculty advisor, students should select a graduate advisory committee to guide them through their degree program by the end of their first year in the GSCS program.

Together, the graduate advisory committee and the student prepare a degree plan detailing the coursework necessary for the student's program of study, select a dissertation topic and formulate a research plan. The graduate advisory committee also approves the dissertation proposal and final manuscript, and administers your candidacy examination and final dissertation defense/oral examination. Signed copies of the degree plan must be sent to the College of Science and Engineering Dean's Office (Academic Advisor) and the College of Graduate Studies by end of the second long semester.

Composition and size of the graduate advisory committee should reflect the scope of the intended research and will be developed with the student's primary advisor(s). The faculty advisor will become the dissertation committee chair. Individual faculty members are under no obligation to serve on your committee or to be your committee chair. The decision not to serve

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should be based on some definable criteria such as work overload or incompatible research interests.

The graduate advisory committee consists of at least three members (four recommended), and two members must be of the GSCS Ph.D. faculty (1 from Computer Science and 1 from Geospatial Science), including the committee chair. Additional members from outside the GSCS Ph.D. faculty may be approved upon discussion with their committee chair. In exceptional cases, individuals holding graduate faculty rank at TAMU-CC or another accredited institution may serve as co-chair with the approval of the GSCS program. In all cases involving the appointment of a non-GSCS Ph.D. faculty member, a graduate faculty status request accompanied by a curriculum vitae and a rationale for the appointment must be filed with the CGS and provided to the GSCS Program Coordinator. Once the committee is formed, Doctoral Form C (<http://gradschool.tamucc.edu/forms.html>) must be submitted to the CGS, and the GSCS Program Coordinator and committee chair notified upon submission.

Upon submission, CGS will appoint a Graduate Faculty Representative (GFR) to the committee. The role of this appointee is to serve as an impartial member of the committee to ensure the integrity of University standards as they apply to the Ph.D. process. This member attends and participates in the oral portions of the proposal hearing and the final defense/oral examination.

The advisory committee chair supervises the student's dissertation research, including preparation of the dissertation manuscript. The committee as a whole approves the degree plan, research proposal, and dissertation manuscript and administers the candidacy examination and final dissertation defense/oral examination. Beyond these functions, the chair and advisory committee members should serve as valuable mentors.

If possible, students should meet with their committee *by the end of the first long semester but no later than the end of the second long semester*. The goal of the first committee meeting is to allow students to introduce themselves and their academic and research interests to the committee and to finalize a degree plan. Students should remain in close contact with their graduate advisory committee during all phases of graduate study and dissertation research to keep them informed of progress and setbacks. At least annually, students must meet with their advisory committee to update the committee regardless of progress.

Students are responsible for calling required annual meetings of the committee and any other meetings deemed necessary by either the student or a committee member. The student is responsible for maintaining a written record of advisory committee meetings including conclusions reached. The student also submits all necessary paperwork and reports from the graduate advisory committee to the GSCS Administrative Assistant. Copies of meeting notes will be placed in your program file by the GSCS Administrative Assistant.

On occasion, it may be necessary to replace a committee member or a committee chair. If such a situation arises, the student should consult his/her committee chair or the GSCS Program Coordinator immediately. The Program Coordinator and the other members of the committee

will determine if a change is necessary. The removal or replacement of a committee member requires a majority agreement of the remaining committee members and the Program Coordinator.

Should a dispute arise between a student and any committee member, the student should consult his/her committee chair, GSCS Program Coordinator, assigned Graduate Faculty Representative or Department Chair.

Interactions with Other Graduate Students

Graduate education is not a solitary endeavor. Students must make opportunities to discuss their projects with other graduate students, and offer to assist others in the field or laboratory. Beyond generating camaraderie, this will give students a more comprehensive understanding of the many specific issues and problems in geospatial computer science, expose them to a broad array of lab/field techniques, provide ideas for research, and provide opportunities to reciprocate in supporting each other.

Teaching Recommendation

All students in the GSCS Ph.D. program are recommended to teach at least 3 semester credit hours as Instructor of Record during their tenure as a doctoral student, usually after being admitted to candidacy. The rationale behind this is that many graduates will go on to careers in academia where teaching will be a major activity. However, even those who are employed outside of academia will likely be involved in education at some level and experience teaching will help to prepare them for those types of challenges in a competitive field. The course and timing of the teaching will be negotiated with the GSCS Program Coordinator, the chair of the student's advisory committee, and the appropriate department chair. International students must obtain English proficiency verification if English is not their native language prior to being assigned to teach (see CGS Assistantship Handbook or details).

Degree Requirements

The GSCS Ph.D. degree program consists of five components:

- Coursework
- Research proposal
- Qualifying examination (admission to candidacy)
- Dissertation
- Dissertation defense (research seminar and final defense/oral examination)

Throughout this process, there are three major decision points for the faculty. The first is admission to the program. An affirmative vote of the admissions committee indicates that the faculty believes you have the potential for advanced study. The second decision point occurs after a student has completed most of the required coursework (and any additional leveling coursework), and the graduate advisory committee administers a proposal defense then candidacy examination. The purpose of this step is to determine if the student has followed

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through by demonstrating potential for advanced study. After successful completion of the proposal defense and examination, a GSCS student becomes a Ph.D. Candidate. The third and final decision point comes when the student completes his/her dissertation. Successful defense of this work leads to the awarding of the Ph.D. degree in Geospatial Computer Sciences.

Coursework

Each student accepted to the GSCS Ph.D. degree program must complete a minimum of 75 hours beyond the bachelor's degree or 57 hours beyond the master's degree. Those coming in with an approved M.S. degree will have reduced courseload requirements relative to those coming in without an M.S. degree. All students are required to complete the GSCS Core Curriculum. Please refer to the Graduate Catalog/Geospatial Computer Sciences for more details on GSCS coursework requirements: <http://catalog.tamucc.edu/index.php>

Degree Plan

The graduate advisory committee will help you develop a degree plan that will aid in preparing you for your planned research. The degree plan must be approved by the end of the second long semester by both the graduate advisory committee and CGS. To view the degree plan form visit: <http://gradschool.tamucc.edu/forms.html> (Form A). Students who are unable to demonstrate proficiency in the natural sciences, mathematics, or geospatial technology will be required to take undergraduate or graduate leveling courses and possibly complete a master's degree prior to entry into the GSCS doctoral program. In most cases, leveling courses will not apply towards the total minimum credit hours required for the Ph.D. degree.

The emphasis area is a phrase that best expresses the student's intended focus within the broad field of geospatial computer science. The student defines an emphasis area, with assistance from their primary chair, and then states it on the degree plan. There is no established list of emphasis areas from which to choose. Rather, each student uniquely formulates an emphasis area based upon academic interests and guidance from their chair. Electives and the research project will normally relate to the emphasis area.

After the graduate advisory committee approves the degree plan, it must be filed electronically with the College of Science and Engineering GSCS Academic Advisor, GSCS Program Administrative Assistant, and CGS. After a tentative degree plan is finalized, the graduate advisory committee and CGS must approve any changes or elective coursework if the courses are to be applied to the total semester hours required for the degree. Exception forms to document these changes can be found at <http://gradschool.tamucc.edu/forms.html> (Form K). Prior to graduation, your Committee Chair will circulate a final degree plan that includes any approved changes from the tentative degree plan to the student, advisory committee, College Dean, and Graduate Dean for final approval.

Course Load Requirements and Restrictions

Unless granted a leave of absence (in writing) by the Graduate Dean, all students are required to maintain continuous registration until all requirements for graduation from the GSCS Program

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are completed. Continuous registration is defined as successfully completing 6 credit hours of advisor- or committee- approved coursework during each academic year (September-August). Students who fail to complete 6 hours in any academic year will be classified as inactive. Students who fail to complete at least 6 hours of approved coursework during the next full semester will be dropped from the program. If you are dropped from the program, you must reapply for admission. In addition to continuous registration, all students must complete a minimum of 9 credit hours in two consecutive long semesters to meet the residency requirement.

A graduate student may register for up to 12 hours of coursework in a regular semester, or up to 6 hours in a single summer session. Registration for a higher course load requires approval of the Dean of the College of Science and Engineering.

The minimum number of hours required to define your enrollment status may depend on the requirements of any financial aid you receive. In general:

- GSCS Fellowships: 9 hrs each during Fall and Spring, 3 hrs during either 5-week summer session, or 3 hrs over 10-week summer session.
- Scholarships or Loans: varies, check with lending agency or entity granting the scholarship.
- Other Teaching Assistantships or Research Assistantships: 9 hrs each during Fall and Spring, 3 hrs during either 5-week summer session, or 3 hrs over 10-week summer session.

Seminars

All students in residence are required to complete 3 hours of GSCS Seminar over the course of at least three semesters as part of the GSCS Core Curriculum.

All students should present a Dissertation Proposal Seminar to fellow students and their graduate advisory committee, preferably no later than their third enrollment in GSCS 6102 and preferably before much of the project's research is conducted (see Research Proposal and Dissertation sections). Although there is no requirement that the proposal seminar be presented in GSCS 6102, it provides an opportunity to meet the seminar requirement if the committee can attend.

All students must also present a Final Dissertation Research Seminar prior to the final dissertation defense/oral examination.

Qualifying Examination and Admission to Degree Candidacy

To be admitted to candidacy for the GSCS Ph.D. degree you must:

- Have a cumulative GPA and a degree plan GPA of at least 3.0
- Satisfy the residency requirement (completion of 9 credit hours in two consecutive long semesters)
- Successfully conduct a proposal seminar and defense

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- Pass the qualifying examination
- Complete all formal course work on the degree plan (excluding dissertation project research hours and GSCS 6999)
- Have an approved dissertation proposal on file with the College of Science and Engineering Dean's Office (Academic Advisor).

You must be admitted to degree candidacy no later than 5 years after the first semester you enrolled in the program and at least 1 year before the date of the final dissertation defense/oral examination. CGS will not authorize a final dissertation defense/oral examination for any doctoral student who has not been admitted to candidacy.

After the completion of any required leveling courses and the GSCS Core Curriculum, all students must pass a Qualifying Examination to be admitted to degree candidacy. This examination may be scheduled when the student is within 6 semester credit hours of completing coursework (excluding dissertation project research hours and GSCS 6999) but must be completed after 12 and before 36 months of entering the program. Students entering with a BS should complete the exam before 48 months. If leveling work is not needed, students should complete the Qualifying Examination by the end of their second full year.

The Qualifying Examination involves written exams from each graduate advisory committee member, followed by an oral exam administered by the committee as a whole. Questions at the oral exam can cover any aspect of the emphasis area, any aspect of the written exam, and any other topic a committee member deems relevant.

Qualifying Examinations must be scheduled with proactive communication between the student and the committee. The written exams must be taken on no more than five consecutive days. Each participating committee member will prepare a written exam specifying time (at least 4 hours, but no more than 8 hours), conditions, and questions for the exam. Each of the four days is set aside for a different committee member. The written exam is returned to the committee member who prepared it, graded as Pass or Fail, signed, dated, and returned to the graduate committee chair. The chair determines if the written exam is passed and puts the exams in the student's file. The written exam must be passed prior to taking the oral exam. The oral exam should be scheduled no sooner than one week after, but no later than one month after the written exams are completed. Students are advised to consult with each committee member well in advance to determine how to prepare to take the exams and to schedule the exam.

Exam schedules must be arranged so that all members of your advisory committee can be present. One committee member (but not the chair) may participate from remote sites via telephone or other media. Any member of the graduate advisory committee who must be absent should arrange with a member of the GSCS Ph.D. faculty from his or her department to sit at the examination as a substitute and should notify CGS, in writing, of the proposed substitution at least one week prior to the examination. In an emergency, the absent faculty member may clear

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the substitution with CGS by telephone, and follow-up with a written confirmation. Only one substitution is allowed. No substitutions for the chair of the committee will be approved. If a chair cannot attend a scheduled examination, or if two (or more) members of an advisory committee must be absent, the examination must be rescheduled.

The graduate advisory committee chairman will report the results of the examination in Form B (<http://gradschool.tamucc.edu/forms.html>) to the College of Science and Engineering Dean's Office (Academic Advisor) and CGS signed by all committee members. This form must be submitted electronically to the CGS within 10 working days of the scheduled qualifying oral examination date and at least 14 weeks prior to the date of the final dissertation defense/oral examination. The committee may make recommendations for additional or remedial work as a condition for passing the exam. *If you successfully pass the Qualifying Examination, you will be advanced to candidacy at the beginning of the next semester. At that point you must complete all remaining requirements for the degree within 5 years.*

Individuals unable to pass the Qualifying Examination(s) will be dropped from the program. If you fail the Qualifying Examination, there is no obligation for a re-examination. At their discretion, the Graduate Advisory Committee may allow one re-examination when adequate time has passed to allow students to address inadequacies emerging from the first examination (not less than four months, but no more than six months). The advisory committee may request that the student retakes the entire exam or only those portions that were not passed, or the committee may recommend that the student complete a master's degree and be administratively withdrawn from the doctoral program.

Peer-Reviewed Publications

As part of the PhD process, students are expected to generate peer-reviewed publications. This is important for your development as an independent researcher and future career goals in academia, federal agencies, or industry. By showing that your dissertation research has been accepted for publication through a peer-reviewed process, it validates the novelty and importance of your work. It further demonstrates to the graduate committee that your research has been reviewed by external domain experts and deemed worthy of sharing with the broader scientific community. This provides strong evidence to the committee in support of your dissertation defense. The standard expectation is that each PhD student will have at minimum two-peer reviewed publications based on their dissertation research prior to graduating. This number is provided as a guideline, and each student's case will vary dependent on guidance from their chair and committee. The publication process from first submission to final publication can sometimes take up to a year or longer. A recommended timeline for peer-reviewed publications is as follows: by end of Year 3, your first publication should be accepted. Prior to your final defense, your second publication should be submitted and accepted (or in revision).

GSCS Program Coursework Requirements

A. Admission from a Bachelor's Degree Option (90 semester credit hours)

Course	Title	Semester Hours
GSCS 6102	Graduate Seminar (1 sem. hr x 3)	3
	Core Coursework*	21
	Elective Coursework**	15+
	Research Coursework***	30+
GSCS 6999	Dissertation Defense***	1-9
	Total	75

B. Admission from a Master's Degree Option (60 semester credit hours)

Course	Title	Semester Hours
GSCS 6102	Graduate Seminar (1 sem. hr x 3)	3
	Core Coursework*	9-21 hours
	Elective Coursework**	15+
	Research Coursework***	30+
GSCS 6999	Dissertation Defense***	1-9
	Total	57

*All students must master the same core knowledge, and this content must be mastered prior to their candidacy exam. The core coursework consists of the seven following courses (21 SCH): COSC 5334 Design and Analysis of Algorithms, COSC 5351 Advanced Computer Architecture, COSC 5352 Advanced Operating Systems, GSCS 6321 Geospatial Data Structures, GSCS 6331 Advanced Geospatial Computing, MATH 5344 Spatial Statistics, GSEN 5365 Spatial Database Design. Students entering with a Master's degree must take at least three (9 SCH) of the core courses at TAMUCC, and may be required to take more to fill any deficiencies.

**At least 15 hours of electives must be taken. Electives will predominately come from COSC, GSCS, and GSEN graduate courses. Up to 6 hours can be taken from another graduate program with approval.

***At least 30 hours of research and dissertation credits must be taken and will come from the following courses: GSCS 6996 Research (prior to candidacy), GSCS 6998 Dissertation Research (after passing the candidacy exam), GSCS 6999 Dissertation Defense.

For a list of all required/elective courses, please visit the GSCS catalog at http://catalog.tamucc.edu/preview_program.php?catoid=11&poid=1072&hl=gscs&returnto=search

Research Prospectus and Proposal

The GSCS program strives to give doctoral students comprehensive knowledge in their professional fields as well as training in the methods of research. Students must conduct original research related to GSCS program goals. Many classes will require you to write research proposals and/or peer-reviewed publications as part of the graded class assignments. Original research and the publication of results are an obligatory part of any Ph.D. program.

The required dissertation involves an independent, detailed research project of importance to the international scientific community. The student's graduate advisory committee will guide the conception, design, construction, and execution of a systems-based inquiry and will review and approve the dissertation manuscript. Normally, an edited version of the dissertation will be published. Your graduate advisory committee may require such publication as part of the defense process.

The doctoral student, along with their graduate advisory committee, designs and plans the dissertation research project. ***This plan should be formalized in a "Prospectus," a brief two page document summarizing the motivation, goals and methods of the student's intended research project, as well as the expected benefits or outcomes.*** The Prospectus is a prologue to the formal Research Proposal and should be presented to the graduate advisory committee at an early meeting (by end of your first year in the program).

The Introduction to the Prospectus should briefly explain the area of interest and scholarly motivation for the research. One or a few clearly stated objectives should be listed. The Prospectus should conclude with an approach on how, where, and when the research will be accomplished. The Prospectus will be submitted, along with the degree plan, to the College of Science and Engineering Dean's Office (Academic Advisor), no later than the end of the second long semester (fall/spring).

GSCS Research Proposal

The proposal should be concise and provide a compelling rationale for the proposed research. The proposal must include a brief but complete synthesis of previous research on the problem, the significance or novelty of the research, and a detailed plan (experimental protocol) for carrying out the research and eventual analysis of the results. The proposal must also include a timeline with distinct milestones to guide the student and the advisory committee in assessing progress, as well as the budget. The proposal should be approved by the advisory committee prior to beginning substantial research, and normally will be completed by the end of the second year of studies.

The proposal should be prepared in the style of a relevant peer-reviewed journal. A dissertation proposal must include the following sections, in this order:

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1. Title page. See example of a correctly spaced and formatted title page below.
2. Project Summary. Like an abstract, the Summary should be a synopsis of the proposed activity suitable for publication and not more than one page in length. It should describe the activities of the project. The Summary must clearly address, in separate statements, the two merit review criteria that are used by national science programs: 1) the intellectual merit of the proposed activity; and 2) the broader impacts resulting from the proposed activity.
3. Background & Relevance. This section summarizes the available scientific literature related to the problem or topic and explains why the proposed research is necessary.
4. Purpose, Objectives and Hypotheses. This section explicitly states the purpose of the research project (e.g., to determine what effect sea-level rise has on oyster reef extent and morphology). The purpose should reflect the question(s) that the research hopes to answer, not the method used to conduct the research. The objectives provide the steps in the research (not explicit methods) that will be used to answer the question (e.g. to gather data on oyster reef extent and morphology in areas of rising sea level). Hypotheses provide the explicit questions and predictions that will be tested in order to answer the larger research question (e.g., what are the factors affecting the extent and morphology of oyster reefs as sea level changes?).
5. Data Sets and Study Site. Description of data planned to be collected and analyzed. If field research is planned, then a description of the study area including a map must be included. The study site should be briefly characterized. For some research, this section may not be relevant.
6. Methods. This section describes in detail the methods of data collection and analysis you will use to meet each research objective or hypothesis. This is arguably the most important part of the proposal. Be sure and include how and when you will obtain any necessary permits.
7. Timeline. The timeline should be a table that includes distinct milestones showing the schedule for both research and academic work. Milestones should include completion of coursework, preliminary examinations, data-gathering for each objective or hypothesis, and analysis of each objective or hypothesis, writing of dissertation, submission to committee, and graduation.
8. Budget. The budget should reflect an accurate assessment of the expenses that will be incurred during the research project and by whom they will be paid. Include financial or other support obtained from all sources. Include each relevant item in the budget in the “Method” section of the proposal. Divide the budget into 4 subsections and present it in tabular form.
 1. Equipment. Include cost figures for each piece of non-expendable equipment that you must purchase to support your research. Do not include purchase costs for equipment already available for use at TAMU-CC, but make sure that such equipment is operational and available for your use. Obtain permission before using University equipment and expendables.

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2. Expendables. Estimate costs for all supplies, chemicals or other items to be exhausted during your research project. All items currently in stock must be replaced, so include replacement costs. Expendables include items such as traps, microscope slides, test tubes, glassware, aerial photography, and electronic data.
3. Operational Expenses. Include cost estimates for data collection including travel, boat rental and other expenses. The use of University vehicles and boats requires approval by the Field Trip Coordinator and the Department Chairperson, or the research institute or center director with oversight over that vehicle.
4. Document Preparation. Include cost estimates for all aspects of preparing the proposal and thesis, including the cost of having the final document bound. These costs are born by the student alone.
9. Budget Justification. This is a brief statement explaining why each element of the budget is necessary to accomplish the research.
10. Literature Cited. This section includes the complete citation for each article referenced in the proposal in the format of the format journal you have selected.
11. Biographical Sketch. The vitae must be 2 pages or less in length and should include five sections: 1) name, present address, contact information, and date; 2) Professional preparation including degrees listing most recent first; 3) Appointments to employment positions, listing most recent first; 4) Publications listing most recent first; and 5) Synergistic Activities, e.g. professional associations, presentations, professional activities, or any other relevant service.

After the proposal is completed, i.e., it is written well and formatted correctly, a draft copy must be submitted to the chair of the graduate advisory committee. After preliminary approval by the committee, the student should arrange to formally present the proposal in a public seminar. This presentation will clarify objectives, justification, methods, logic, or the proposed research and provide project orientation. The student and the graduate advisory committee must plan the timing, location, and format of the Dissertation Proposal presentation and the student must make a public announcement (see example at the end of this section) so that any interested persons may attend. All members of the committee should be present. The dissertation defense/final oral examination will not be permitted until this requirement is met.

Writing a successful proposal may require many drafts prior to approval by the entire advisory committee. Starting this process early is strongly advised. After the proposal meets the committee chair's approval, each of the remaining committee members should be provided a copy for review. After all requested changes have been made and the committee is satisfied that all aspects of the proposal are in order, the final Dissertation Research Proposal must be delivered to the committee chairperson for his/her signature and then to the rest of the committee and Program Coordinator for signatures.

Once all signatures are obtained, make copies to distribute to all members of the graduate advisory committee, and to the College of Science and Engineering Dean's Office (Academic Advisor). Students must take this process into account when planning their research schedule.

Preparing the Research Proposal

Make all narrative material of the dissertation proposal clearly understandable to the reader through careful, well-organized writing, meaningful figures and tables, and adequate utilization of references. Several publications available in the TAMU-CC library answer specific questions regarding the style of scientific writing, including the Council of Science Editors (CSE) Style Manual, the United States Government Printing Office Style Manual, and others. No corrections of letters or figures should be visible on the final copies.

When writing the dissertation proposal and dissertation, follow the general format and style for submitting manuscripts ("Guide/Instructions for Authors") of a respected scholarly journal in the field of your research. However, you **should not follow** the final style of journals such as the use of double columns on a text page, literature citation methods other than the name-date system, etc., nor can the typed manuscript duplicate every printing technique. Do not follow the journal's "Instructions to Contributors" except with regards to formatting headings and subheadings, figures and tables, figure and table captions and text callouts, abbreviations, etc. These instructions are primarily for the convenience of the editors and printers of the journal and do not necessarily apply to the format of dissertation proposals or dissertation manuscripts. The journal that you choose as the "Format Journal" for your graduate manuscript must be readily available in the TAMU-CC library. Your committee must approve your Format Journal choice before you begin to write the manuscript. It is usually a good idea to use the same Format Journal for both the proposal and final manuscript.

Prepare the manuscript using styles in your word processor. Styles allow you to reformat the document quickly. The font should be 10 or 12 characters-per-inch (cpi) type size with a plain book-type font such as Helvetica or Times Roman, not some unusual font. Follow your format journal in italicizing or underlining scientific nomenclature, foreign words, abbreviations and titles. When underlining a word, use a continuous underline; do not leave a space in the underline between letters. Separately underline each word of a multiword term, leaving a gap between adjacent words. In general, double-space your dissertation proposal and dissertation manuscript. The exceptions to this rule are for quotations exceeding six typed lines (inset and single-space these) and footnotes (which you should avoid). Figure and table captions should also be single-spaced. One line should separate a table caption from the table header and two lines should separate any embedded figure or table from text on the same page. Number all pages in the dissertation proposal or dissertation manuscript except the Title and Approval pages. Number the preliminary pages of the dissertation proposal with lower case Roman numerals. The Abstract page is the first numbered page; it follows the Title and Approval pages and is numbered iii. The style and format for all headings and subheadings in the dissertation proposal and dissertation

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manuscript should follow the standard practice of the format journal. Start each major heading (i.e., Methods, Study Area, Results, Discussion, etc.) on a new page. Subheadings should fall naturally within the text, but should never appear alone as the last line on a page (“orphan”). If a subheading is the last line of text, start it at the beginning of the next page. Always refer to the graduate school and dissertation template document for

Tables and figures, regardless of size, may appear on separate pages or within the text itself. Place them in the manuscript as close as possible to their first reference in the text (generally the page on or immediately following the first reference). Make sure that figures and tables are relevant and useful to the reader, and use as many as are necessary to fully report on the results of your research. If a figure or table is relevant, but represents ancillary information or “raw” data, include in an appendix rather than in the main text of the manuscript. If you place tables or figures in landscape format on a page, the top of the table or figure should be on the left side. Give each table or figure a number and caption, and transcribe these exactly on the List of Tables or List of Figures page; if a figure or table caption is more than one sentence, then put only the first sentence into the list. Make captions as concise as possible, but clearly describe the content of the figure or table. Follow exactly the format and style for figures and tables prescribed by the Format Journal.

Construct tables using the “Table” function found in all word processors. Titles for tables must appear on the same page as the table, and should be placed above the table. Make horizontal rules mimic the Format Journal. Vertical rules should not be used. If a table is more than one page long, there should be no closing line on the first page and the second page of the table should have a caption reading “Table #. Continued.” Multi-page tables should always begin on a new page; in other words, the first few lines of a multi-page table should not appear embedded within the text. Use the caption style of your word processing program for figures, which usually places the caption below the figure.

Footnotes should not appear within the regular text of the manuscript (they are permissible as explanatory notes in tables) except in rare circumstances. If they are absolutely necessary and the Format Journal permits their use, follow the journal format exactly. Cite all references to the literature in the text using the name-date system which is the method most widely used in the sciences, e.g., Stilt (2000) or (Heron, 1995; Seagull 1996; Seagull and Plover, 1996). Choose a Format Journal that uses this system. Do not cite sources by number, i.e. (1). If you use or adapt a figure from another author, cite the source in the figure caption. Generally, follow the format in the Format Journal when you develop the Literature Cited section. Use the same system of abbreviations, punctuation, underlining, and italics as the Format Journal. There is one exception (mainly applies to chemistry Format Journals): if the Literature Cited section of your Format Journal does not list the title of an article, make sure that you include it to enhance the usefulness of your citations to readers.

A dissertation template in WORD and LaTeX format is provided by the College of Graduate Studies (CGS) and can be found at the following link: [dissertation guidelines and templates](#). It is recommended, though not required, that you utilize the dissertation template in preparing your proposal because it is required to be utilized for your final dissertation document. Always confer with your advisor concerning proposal format.

Dissertation Proposal Seminar

Once the advisory committee has approved the research proposal and a date for the Dissertation Proposal Seminar has been set, the student must submit Form D: Doctoral Dissertation Proposal Hearing Request Form (available at <http://gradschool.tamucc.edu/forms.html>). This form has to be submitted with original signatures to the College of Graduate Studies no later than two weeks prior to the hearing (seminar) and, at minimum, two semesters prior to the student's anticipated graduation. A Research Proposal Seminar Announcement (see example below) should be sent to the appropriate listservs no later than 1 week before the seminar date.

Format of the Research Proposal Title Page

TITLE SHOULD APPEAR IN ALL CAPITALS AND BE CENTERED

a research proposal prepared by YOU A. STUDENT
MONTH, YEAR

for
The Graduate Committee
Geospatial Computer Science Program
School of Engineering and Computing Sciences
Texas A&M University-Corpus Christi
Corpus Christi, Texas

Approved:

Dr. A. Shell, Chairperson

Dr. B. Waves, Member

Dr. C. Gull, Member

Dr. D. Sand, Member

Format: *Title of Journal* used as format.

Format of the Research Proposal Budget

Table 1. Proposed budget for dissertation research

Budget Item	Costs (\$)			
	TAMUCC	Personal	Other	Total
Salary Monthly (15 months)			*15567.75	15567.75
Equipment Desktop Laptop Microscope	on hand/no cost on hand/no cost	on hand/no cost		
Supplies Petri dishes Microslides Chemicals			60.00 40.00 500.00	60.00 40.00 500.00
Travel Boat/Vehicle (4 trips) Food Hotel	120.00		400.00 **100.00 **200.00	520.00 100.00 200.00
Preparation of Documents Thesis expenses Publication and reprints		200.00		200.00 300.00
Total	420.00	740.00	22567.75	24327.75

* Grants to Dr. A Palmtree

** Travel award from Elite Program

Also include a section entitled “Budget Justification” that describes in detail each line in the budget

Notice to GSCS Students:

A budget should be prepared for things like anticipated software fees, publication submission fees, potential costs for data collections, sensor costs, etc. Any equipment or computing costs must be within reasonable amounts and are at the discretion of available funding, project resources, and should be put forth in consultation with your advisor.

Format of the Research Proposal Seminar Announcement

(Note: Time, date, and room are examples only)

RESEARCH PROPOSAL SEMINAR NOTICE
GEOSPATIAL COMPUTER SCIENCE PROGRAM
SCHOOL OF ENGINEERING AND COMPUTING SCIENCES
TEXAS A&M UNIVERSITY-CORPUS CHRISTI

SUBJECT: Official Title of Your Dissertation

SPEAKER: You A. Student

DATE: [Insert day, month date, year]

TIME: 0:00 a.m./p.m.

PLACE: Building
Room

ABSTRACT

A 50-200-word abstract of your research proposal should appear here.

[NOTE: Students should post this notice electronically to faculty members and graduate students involved in the GSCS and other graduate programs via the GSCS-list (gscs-list@listserv.tamucc.edu) and Scitech-list (scitech-gradstudents@listserv.tamucc.edu) listservs. Ensure you email a copy of the announcement to the College of Science and Engineering Dean's Office (Academic Advisor) and GSCS Administrative Assistant.]

SECTION IV: DISSERTATION GUIDELINES

Your dissertation must conform to GSCS program and College of Graduate Studies institutional standards. The following guidelines will help ensure your dissertation is completed and submitted appropriately. Consult the CGS Doctoral Student Handbook for specific formatting and submission requirements.

The GSCS Dissertation

Students will complete a study of the accepted standards of scholarly ethics and scientific integrity. The Ph.D. dissertation is a book-length, formal document that argues in defense of a particular thesis. Two important adjectives used to describe the dissertation are “original” and “substantial”. The research performed to support a thesis must be both, and the dissertation must show it to be so. In particular, a dissertation highlights original contributions. Once data collection and analysis are completed, the research should be organized into a meaningful format and explained in a written narrative. The written narrative follows the style and format standard to scientific papers.

Dissertation research will not always go according to plans. Students must be prepared to adopt new methods of data collection or analysis if necessary and in consultation with the graduate advisory committee. Students should plan to take advantage of any opportunities to pursue side projects, as time and resources permit, to enrich understanding of the research topic.

The College of Graduate Studies Doctoral Student Handbook outlines the guidelines and requirements for formatting the dissertation. Templates in WORD and LaTeX format are provided by the College of Graduate Studies and can be found at the following webpage: [dissertation guidelines and templates](#). These templates include formatting for the title page, copyright page, and committee member page. Links to required doctoral forms, dissertation templates, and other pertinent information can also be found here:

http://gradcollege.tamucc.edu/current_students/doctoral_students.html

GSCS students may choose between two models for organizing the dissertation content: 1) the traditional model, and 2) the journal manuscript model. The “traditional” model presents the dissertation research content in a single, cohesive manuscript. Information is presented sequentially and no section stands alone as a publishable document. The “journal manuscript” model presents dissertation research as several discrete articles, each appropriate for submission to a journal, bound together as the dissertation document. In the journal manuscript model, information may be repeated as necessary between articles so that each can stand alone as an academic work. The journal manuscript format must also include an overarching introduction, a

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http://gradschool.tamucc.edu/assets/doctoral_files/doctoral_handbook.pdf

summary/conclusions section that brings the entirety of the research into context, and a literature cited section that encompasses the entirety of the manuscript. Regardless of whether the traditional or journal manuscript model is chosen, the entire document must be submitted in one format style. In other words, in the journal manuscript model, even though it is likely that articles will be submitted to several different journals, the entire dissertation must be presented in the style of only one journal. Headings and subheadings, punctuation, reference citations, and other details should follow the journal format exactly with few exceptions.

When the draft is ready, submit it to the chair of your advisory committee. Submit the draft as if it were the final – make it as perfect as possible with respect to writing and grammar, punctuation and spelling, journal formatting requirements, and with all figures and tables in final format. Be prepared to go through the revision process numerous times before the committee chair is comfortable letting the rest of the committee review the document.

When the committee chair is ready for the document to be submitted to the rest of the committee, enough copies should be reproduced so that each member can have a copy. Ideally, committee members should return the corrected dissertation within two weeks of receipt. Students should check with committee members to ensure they have the time to review the document. A final draft delivered to the advisory committee one month prior to the dissertation seminar, would allow two weeks before the scheduled final defense/oral examination date for the student to make recommended changes. After the committee has returned the corrected draft, students should review suggested changes with their advisory committee chair, and make the suggested changes, unless the chair directs otherwise. (Note: A request to schedule the defense/final examination must be submitted by the published deadline (http://gradschool.tamucc.edu/current_students/doctoral_dates.html) on the appropriate form found at <http://gradschool.tamucc.edu/forms.html> (Form E).

Students should be prepared to go through the revision process more than once before the committee members are comfortable signing off on the final document.

Students should be sure to give their advisory committee chair enough time to review the manuscript and leave themselves enough time to make changes. In other words, students should make sure that they have left ample time prior to deadlines for all members to have adequate time to review the document and for all the changes suggested by the committee to be made. **The dissertation should be essentially complete before the dissertation seminar and final defense/oral examinations.** Any member of the graduate committee or the Dean of the College of Graduate Studies can reject the dissertation at any stage of the submission and approval process. Rejection of the manuscript can occur for many reasons including (but not limited to):

1. The manuscript does not conform to the required format
2. The manuscript is messy, poorly reproduced, or contains grammatical or spelling errors
3. The manuscript describes scientific data inconsistent with the research project approved in the dissertation proposal

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4. The paper contains errors, inappropriate analysis of data, erroneous conclusions, or other scientific inaccuracies
5. The paper contains plagiarized work.

After a student has successfully presented the dissertation seminar, completed the defense/oral examination, and completed all changes to the dissertation manuscript that have been requested by the committee, the Dissertation Defense/Final Examination (Form F) report will be electronically routed for signatures and submitted to CGS (<http://gradschool.tamucc.edu/forms.html>).

The GSCS faculty expects students to submit dissertation research (in proper format) to scholarly journal(s) for publication. If the advisory committee chair or other person(s) including other faculty or scientists from funding agencies, etc., made a significant contribution to the research or writing of the manuscript to be submitted, then the person should be listed as a co-author on the published article. The student and the advisory committee Chair should agree on the order of authorship. Seriously consider co-author status if a person:

1. Supported the work through a grant that was authored by them
2. Did a significant portion of field or laboratory work
3. Contributed materially and intellectually to the research
4. Contributed to the writing

In all cases, acknowledge the chair of the advisory committee, other members of the graduate advisory committee, other people that offered assistance and TAMU-CC in the publication. It is courteous to acknowledge persons, who assisted in any major way including moral support, lab/field assistance, and of course, any source of financial assistance.

Dissertation Seminar & Final Defense/Oral Examination

The comprehensive exam must be passed and courses in the plan of study completed with a GPA of 3.0 or greater before the dissertation defense/final examination will be scheduled. Once the dissertation is completed and approved by the advisory committee, the results of the research must be presented orally and publicly. The dissertation defense/final examination must cover, but is not limited to, the dissertation. The defense must be scheduled for a minimum of **six weeks** prior to graduation. The seminar should be scheduled and completed prior to the final defense/oral examination. The final defense/oral examination usually takes place immediately following the seminar, but it can be scheduled on a separate day if necessary to accommodate the schedules of committee members.

Subsequent to the dissertation defense/final examination, and **only** after all changes to the dissertation manuscript requested by the committee have been made, the student will submit an electronic copy of the dissertation, no later than **four weeks** prior to graduation, to

ProQuest/UMI as a single PDF file (see CGS Doctoral Student Handbook for detailed instructions).

Students not completing all requirements of the Final Dissertation Defense by the end of the semester, such as turning in an approved final draft by published deadlines, will receive a grade of In Progress (IP). The student must register for the same course in the subsequent semester, paying all the appropriate tuition and fees, to receive a final grade for the course.

After your **Dissertation Defense & Final Examination Report** (Form F) is submitted electronically and all requested changes have been made, you can submit your dissertation electronically.

Dissertation Seminar

The Dissertation Seminar is a formal oral and visually supported presentation of the results of the research or of some pertinent aspect of the research. Although it will generally be longer than a paper presented at a scientific meeting, it should be similar in format and design. The defense should review parts of the dissertation including the background and relevance of the research, the methods, the results, and the conclusions. Professional quality visual aids must complement the oral presentation. As a general rule, the oral presentation should last about 45 minutes and at least 15 additional minutes should be allowed to answer questions at the end.

Students must prepare and submit a formal announcement of the dissertation seminar to their committee chairperson for approval at least two weeks prior to the seminar date. It is the student's responsibility to contact each committee member and arrange a time and place for the event. All committee members must attend the seminar. The student is responsible for posting the seminar notice as an e-mail to all appropriate listservs at least one week prior to the seminar date. Email a copy of the seminar notice to the College of Science and Engineering Dean's Office (Academic Advisor) and GSCS Administrative Assistant.

Final Defense/Oral Examination

The purpose of the final defense and oral examination is to allow advisory committee members to gauge the scope of the student's understanding of the principles and significance of the discipline of the dissertation research. It complements the qualifying examination, which gauged overall knowledge in the field, by allowing a more detailed assessment of specific knowledge as it applies to the dissertation research. The exact format and scope will vary among students depending on both their advisory committee and the nature of their research.

The graduate advisory committee will decide whether a student has passed the final defense and oral examination. Regardless of whether the student passes or fails, the committee will discuss

with the student their assessment of the student's performance. If a student fails, the exam may be retaken only once, and only after at least four months have passed.

Format of the Dissertation Seminar Notice

(Note: Time, date, and room are examples only)

RESEARCH PROPOSAL SEMINAR NOTICE
GEOSPATIAL COMPUTER SCIENCE PROGRAM
SCHOOL OF ENGINEERING AND COMPUTING SCIENCES
TEXAS A&M UNIVERSITY-CORPUS CHRISTI

SUBJECT: Official Title of Your Dissertation

SPEAKER: You A. Student

DATE: [Insert day, month date, year]

TIME: 0:00 a.m./p.m.

PLACE: Building
Room

ABSTRACT

The abstract of your dissertation or graduate project should appear here (shortened version if necessary). An abstract of 50-200 words length is recommended for inclusion in the Graduate Seminar Notice.

[NOTE: Students should post this notice electronically to faculty members and graduate students involved in the GSCS and other graduate programs via the GSCS-list (gscs-list@listserv.tamucc.edu) and Scitech-list (scitech-gradstudents@listserv.tamucc.edu) listservs. Ensure you email a copy of the announcement to the College of Science and Engineering Dean's Office (Academic Advisor) and GSCS Administrative Assistant.]

SECTION V: APPENDICES

Appendix 1: GSCS Program Application Checklist

- Complete the ‘Apply Texas Application’ along with the application fee.
- Submit an essay (Approximately 500-1000 words in length) describing educational backgrounds, research and career interests, goals and challenges. Include any relevant supplemental materials, such as publications or resumes of relevant experiences, and contacts made with professors in the GSCS program.
- Request 3 letters of recommendation
 - Letters of recommendation should be requested from individuals who are familiar with your academic achievement and potential and provide them with the required evaluation forms.
 - If you have been out of school for a number of years and are unable to contact former professors, you may request recommendations from people such as employers who are familiar with you and who can comment on your potential to succeed in the program.
- Request official transcripts documenting all senior-level post-secondary institutions you attended. Transcripts must be sent directly to CGS. An official statement of the award of the degree or diploma is required for each degree completed.
- Request that the required test scores (GRE and/or TOEFL) be sent directly from the Educational testing service to CGS (Code 6849)
 - GRE and TOEFL scores must be not more than 5 and 2 years old, respectively
 - International graduate students seeking assistantships must also obtain “English Proficiency Certification”

Appendix 2: GSCS Ph.D. Program First-Year Checklist

- Meet with GSCS Program Coordinator prior to enrolling for first semester classes
- Form Graduate Advisory Committee (GAC) by the end of year 1
 - Speak with faculty about research interests
 - Decide on a primary advisor (Committee Chair)
- Prepare a degree plan with our GAC by the end of year 1
 - Leveling coursework
 - Elective coursework
 - Dissertation topic
 - Formulate Research prospectus
- College of Graduate Studies (CGS) appoints a Graduate Faculty Representative (GFR)
- Meet GAC
- Prepare prospectus (2 pages)
- Present prospectus to your GAC

Appendix 3: GSCS Ph.D. Program Degree Requirements Checklist

I. Coursework

- Leveling coursework (if necessary) as specified by GAC and GSCS Program Coordinator
- Tentative Degree Plan and Research Prospectus approved by CGS and copy to the College of Science and Engineering Dean's Office (Academic Advisory) by the end of the first year, but no later than 18 months after beginning the doctoral program
 - Minimum 75 hrs beyond bachelor's degree, or 57 hrs beyond master's degree
 - 21 hrs Core Curriculum, including 3 hrs GSCS 6102 Seminar
 - 3.0 minimum GPA
 - Research Prospectus (at least 2 pages) developed with GAC
 - Final Degree Plan for signature approval to Dept. Chair, College Dean, and CGS no later than before census day (12th class day) of the semester prior to the graduating term.
 - Deadline to apply for graduation is the last day of classes in the semester prior to graduation.

II. Research Proposal

- Independent, detailed, original, systems-based inquiry
- Research Prospectus presented to committee and submitted to CGS by end of the second semester (2 pages minimum)
- Dissertation Research Proposal
 - Modified from the Research Prospectus with GAC input
 - Submit draft to Committee Chair for approval
 - Present, after Chair approval and public announcement, a proposal seminar
 - One hour public, one hour closed
 - Present to GAC for approval signatures
 - Signed version submitted to College Dean; Copies to College Advisor, CMSS Administrative Assistant, and GAC members
 - Should be approved by end of second year of graduate study

III. Admission to Candidacy

- Completed *formal* coursework on Tentative Degree Plan
 - Excluding research hours
 - 3.0 minimum GPA
- Dissertation Research Proposal on file with College
- Qualifying Examinations
 - Written examination from each GAC member

This handbook is intended to be read in conjunction with the Graduate Catalog: <http://catalog.tamucc.edu/index.php?catoid=16> and College of Graduate Studies Doctoral Student Handbook http://gradschool.tamucc.edu/assets/doctoral_files/doctoral_handbook.pdf

- Minimum 2 days, maximum one week
- Oral examination with GAC
- Can cover both core knowledge and areas of research
- Speak with each GAC member to prepare
- Must pass within 12 months of coursework completion
- Notify CGS of outcome

IV. Teaching Experience

- A relevant teaching experience of at least 3 credit hours as instructor of record is recommended
 - Consult with the GSCS Program Coordinator and your advisor to make arrangements for a teaching assignment

V. Dissertation

- Data collection and analysis completed
- Choose format and prepare according to guidelines
 - Multiple iterations of editing
 - With Chair approval, provide copies to GAC *at least* 1 month prior to final defense
 - Committee returns corrected versions within 2 weeks
 - Review and incorporate suggested changes along with Chair
 - Additional review by GAC may be required
- Submit final corrected version of Dissertation to CGS following successful defense
 - See CGS doctoral Student Handbook for instructions
- Note: Completion of the GSCS Ph.D. is driven by the dissertation as a product of research, rather than by external factors or commitments

V. Dissertation Defense

- Must have been admitted to Degree Candidacy at least 1 year prior to defense
- Must be registered for credit for semester in which the final defense takes place
- Apply for graduation in College of Science and Engineering Dean's Office (Academic Advisor) by published deadline. The student must complete all requirements for the degree at least three weeks prior to the end of the semester in which the degree will be conferred.
- Contact GAC to schedule Dissertation Seminar and Final Defense
 - Must be held at least eight weeks prior to graduation
- Submit formal seminar announcement to committee chair at least 2 weeks in advance
- Schedule rooms for seminar and defense

This handbook is intended to be read in conjunction with the Graduate Catalog: <http://catalog.tamucc.edu/index.php?catoid=16> and College of Graduate Studies Doctoral Student Handbook http://gradschool.tamucc.edu/assets/doctoral_files/doctoral_handbook.pdf

- Post announcement to relevant Listservs at least 1 week in advance
- Email copy to College of Science and Engineering Dean's Office (Academic Advisor)
- Present Dissertation Seminar and stand for the Final Defense
- Complete all requirements for the degree at least three weeks prior to the end of the semester in which the degree will be conferred