

**GRADUATE HANDBOOK  
FOR  
MASTER OF SCIENCE IN  
GEOGRAPHIC INFORMATION SYSTEMS**



**DEPARTMENT OF ENVIRONMENTAL AND  
GEOSCIENCES  
COLLEGE OF SCIENCE AND ENGINEERING  
TECHNOLOGY  
SAM HOUSTON STATE UNIVERSITY**

Updated Fall 2021



GRADUATE STUDENT CONTRACT

I, \_\_\_\_\_ have received a copy of the Graduate Student Handbook from the Department of Environmental and Geosciences. I understand that I am expected to abide by all policies, deadlines, and time lines set forth both in this handbook and those found in the Graduate Catalog, Guidelines for Admission to Candidacy, Schedule of Classes, and Thesis Requirements. I also acknowledge that it is **my** responsibility, and not the Graduate Coordinator nor members of the department, to see that I meet these obligations and deadlines. Additionally, I agree that my admission status as well as any financial support by the Department of Environmental and Geosciences may be withdrawn should it be found that I have not followed these policies in good faith.

Signed: \_\_\_\_\_ Date \_\_\_\_\_

Expected Graduation (Semester, Year): \_\_\_\_\_

**Contact Information:**

Student ID: \_\_\_\_\_

Email: \_\_\_\_\_ Local Phone Number: \_\_\_\_\_

Cell Phone Number: \_\_\_\_\_ Permanent Phone Number: \_\_\_\_\_

Permanent Address: \_\_\_\_\_

\_\_\_\_\_

## ACADEMIC PROCEDURES

The department of Environmental and Geosciences offers a Master of Science degree in Applied GIS. The program requires students to complete 36 credit hour of graduate course work. The Master's program offers two tracks; a **Traditional track** (thesis and non-thesis option) that offers a mix of online and face-to-face classes and a **Professional track** (non-thesis only) that is offered completely online.

The traditional track (thesis and non-thesis option) of GIS Master's degree is geared towards students with no prior experience/background in GIS or towards students who have completed an undergraduate degree with no work experience. All face to face classes are offered at the Sam Houston State University campus located at The Woodlands Center on Hwy 242.

The online professional track is geared towards professionals with at least 2 -3 years work experience.

## APPLICATION / ACCEPTANCE PROCEDURES

### Regular Admission

Applicants seeking admission to the Master of Science in Geographic Information Systems must submit the following directly to the Office of Graduate Admissions:

- Graduate Application (<http://www.shsu.edu/admissions/apply-texas.html>)
- Application fee (<http://www.shsu.edu/dept/graduate-studies/application-fee.html>)
- Official transcript(s) of all previous college work (**international students must submit third party evaluation of official transcripts for degrees from universities outside the United States**)
- Official GRE scores.  
***For students applying to the Professional track of the Master's program, GRE is waived in lieu of work experience.***
- TOEFL scores for international students
- Two letters of recommendation from faculty in the student's major at the degree-granting institution. For students applying to the Professional track of the master's program at least one letter from immediate supervisor preferred

For students applying to the **Professional track** following two items are required in addition to the above items

- Resume
- Statement of purpose that explains
  - Intent of degree
  - Expected outcome
  - Description of current and past involvement and employment using GIS and Remote Sensing technologies

International students who receive a Form I-20 (F-1) or DS-2019 (J-1) based on admission to this program will be required to maintain full time enrollment (9 credits per semester) and will be subject to the rules and regulations that pertain to the F-1 or J-1 student visa status. Prospective international students MUST also visit the [International Programs](#) page for more information about graduate studies at Sam Houston State University.

**\*Conditional Admission.**

An applicant whose records are incomplete may be granted conditional admission. Such students will be classified as conditional graduate students until all records are complete and all regular admission requirements are fulfilled. Conditional admission allows for the completion of **no more than six hours** of graduate credit and is valid for only **one semester**. All requirements for regular admission must be met prior to enrollment for more than six hours graduate credit.

As per SEVIS/ICE policies international students are not allowed conditional admission.

**\*Probationary Admission.**

An applicant whose records are complete but who did not qualify for regular admission can be granted **probationary admission** with graduate committee recommendation. The student may need to complete one or more stem courses as recommended by the graduate committee. Stem courses do not count towards the 36 credits of graduate coursework. The purpose of stem courses is to prepare a student for graduate coursework in GIS if conditions for regular admission are not met. Such a student is allowed in graduate classes to demonstrate that he/she can perform at the graduate level. Students must earn a grade of “B” or better in each course taken under probationary status in order to be considered for regular admission.

*\*Please note that conditional and probationary admission does not guarantee regular admission once deficiencies are met.*

**Non-Degree Admission/Graduate Certificate in GIS.**

Non-degree admission may be granted to a student who does not intend to pursue a graduate degree but who wishes to take courses for professional advancement to pursue a Certificate in GIS and who holds a baccalaureate degree or higher from an accredited university. For admission into the Certificate program official transcripts and a resume is required.

GIS Certificate students may transfer to the regular Master’s program with a formal application, and a maximum of 12 graduate semester credit hours completed in the non-degree status may be applied to the graduate degree program. Transfer credits are not allowed in the graduate Certificate program.

Students pursuing Master of Science degree in GIS may be issued a Certificate with a formal request upon meeting the certificate requirements.

**Transfer Credit.**

A total of nine (9) credit hours may be transferred to SHSU from another accredited graduate program. However, for a course to be transferred, there should be an equivalent course in the current graduate program, and that course cannot be taken again. Only courses taken within the last six years can be transferred. Undergraduate credits cannot be transferred and used towards graduate degree. Exceptions to this rule require approval by the Department Chair and the Dean.

## **ACADEMIC EXPECTATIONS**

### **Academic Good Standing for Graduate Students.**

As per Academic Policy Statement 910312

- A minimum grade point average of 3.0 is required in all graduate course work. All grades earned at SHSU (A, B, C, F) in courses listed for graduate credit on the student's official Degree Plan will be included in computing the grade point average. The marks of Q, W, CR, NC, IP, and X are not counted as hours attempted in computing the SHSU grade point average.
- Grades earned at another institution may not be used to remove a grade of "C" or lower earned at SHSU.
- The appropriate academic dean may place on probation, retain on probation, or terminate any student deficient in grade points.

### **Academic Probation, Termination, or Dismissal for Graduate Students.**

As per Academic Policy Statement 910312

- A graduate student who falls below a 3.0 SHSU grade point average at the close of any semester or summer semester during which one or more semester hours are attempted will be placed on probation. Two summer sessions are equivalent to one long semester. If an enrolled student on probation fails to achieve a minimum of a 3.0 SHSU grade point average at the close of the next semester following the start of the probation, the student will be terminated from graduate studies.
- A graduate student who earns a grade of F in any graduate course at SHSU will be terminated from graduate studies.
- A student who earns a grade of C in any course at SHSU (repeated or distinct course) within the academic program may have their graduate status reviewed by a committee of the department or college graduate faculty. The committee will recommend an appropriate remediation for the student.
- A student who fails to meet any approved program-specific standards for academic performance, including professionalism standards, in consonance with section 7.04 of Academic Policy Statement 910312 may be dismissed from the program and not permitted to register for courses in the program.

### **Removal of Academic Probation for Graduate Students.**

The student will be removed from probation at the close of the semester or summer semester in which the SHSU grade point average achieves the required standard.

## **Appeals Process for Termination and Dismissal for Graduate Students**

A student who believes they have been wrongly dismissed or terminated from graduate studies may appeal using the following procedures:

- The student must first appeal to the graduate advisor for a resolution and must do so in writing and within ten (10) working days following the notification of probation, termination, or dismissal. The graduate advisor must respond to the appeal in writing within ten (10) working days of receipt.
- If the appeal to the graduate advisor is not satisfactorily resolved, the student may appeal in writing to the chair of the department within ten (10) working days following the graduate advisor's decision. The department chair must respond to the appeal in writing within ten (10) working days of receipt.

The student may appeal the decision of the chair in writing to the appropriate academic dean within ten (10) working days following the chair's decision. The academic dean may elect to create appeal committees at the program, department/school, or college level to hear student appeals for readmission. These committees will be charged with making a recommendation to the academic dean. The academic dean must respond to the appeal in writing within ten (10) working days of receipt of the appeal or the committee's recommendation, if any.

- If the appeal is not resolved with the academic dean, the student may appeal in writing to the Provost and Sr. Vice President for Academic Affairs, or their designee, within ten (10) working days following the academic dean's decision. The decision of the Provost and Sr. Vice President for Academic Affairs or their designee is final.
- Per Academic Policy Statement 900823, section 2.05, some programs are permitted to establish internal academic grievance procedures, subject to the approval of the Provost and Sr. Vice President for Academic Affairs. Such academic grievance procedures take precedence over the academic grievance procedures described in sections 10.01, 10.02, and 10.03 of Academic Policy Statement 910312.

## **Credit Hour Restrictions**

The normal course load for graduate students is nine credit hours per full semester and 3-6 credit hours per summer session.



## PROCEDURES FOR MASTER OF SCIENCE DEGREE

### Graduate Coordinator.

Dr. Falguni Mukherjee, [fsm002@shsu.edu](mailto:fsm002@shsu.edu), is the graduate coordinator for all graduate students seeking a Master's degree in Applied GIS. Dr. Pat Harris, [pat-harris@shsu.edu](mailto:pat-harris@shsu.edu) is the Department Chair and Dr. John Strait, [jbs008@shsu.edu](mailto:jbs008@shsu.edu) is the Assistant Chair.

The graduate coordinator will be the contact person for all graduate students submitting any official paperwork, to assist with course selection and any questions pertaining to the graduate program.

### Course Requirements for Master of Science in GIS.

A suggested list of required courses is found in the Graduate Catalog (*also included in the appendix*).

The degree requires successful completion of 36 hours of graduate course work for the online professional track and non-thesis option (*traditional track*). For the thesis option (*traditional track*) 30 hours of graduate course work, plus 6 hours of thesis credit must be completed.

### Degree Plan.

A degree plan is prepared for every student by the Graduate Coordinator after consultation with the student. A degree plan must be on file by the end of second semester of the degree program. At this time, the student commits to a degree plan, including whether or not to opt for a thesis or a non-thesis path (*traditional track*). A degree plan details the curriculum for the specific academic program and is developed for each graduate student. All courses on the approved degree plan must be completed with a satisfactory grade to meet the requirements for the degree. Changes in an approved degree plan may be made by petition to the graduate advisor and approved by the appropriate academic dean.

As per university policies, a student is required to complete master's level graduate work within a six-year period, measured from the date of initial enrollment for graduate credit in a particular degree program. The period of time a student is on an approved leave of absence will be counted as time accumulated toward that six-year deadline for completion of the degree. Any extension of the six-year deadline must be approved in writing by the appropriate academic dean.

### Documentation.

Each student is responsible for submitting necessary paperwork to the graduate coordinator in a timely manner. It is the responsibility of the student to refer to the deadlines in the Graduate Catalog, Schedule of Classes, Academic Dean's Office, Graduate Admissions etc. and adhere to those dates.

## **Examination of Completion.**

All graduate students must pass a graduate comprehensive exam (*see below*), over the graduate course work of their degree program.

Additionally, graduate students completing a thesis will be required to give a presentation of their thesis proposal/prospectus, an oral thesis defense and will be subject to an oral examination of the thesis topic.

## **Comprehensive Exam.**

All graduate students must pass a Comprehensive Exam. The Comprehensive Exam will be administered by the Comprehensive Examination Committee that consists of three GIS graduate faculty members. A written comprehensive examination will be administered by the comprehensive exam advisory committee for each degree candidate. The written examination must be scheduled with the GIS Graduate Program Coordinator at least four weeks in advance. Students must be enrolled the semester in which they take the comprehensive examination.

The Comprehensive Examination Committee may or may not be the same as the student's Thesis Advisory Committee. **Students must submit the Comprehensive Examination Committee Form (see Appendix) to the Graduate Coordinator by the beginning of the semester in which the exam is scheduled.** Students must successfully complete their comprehensive exam no later than the semester in which graduation is expected.

Students are eligible to take the comprehensive exam after completing GEOG 5361, GEOG 5362, GEOG 5364 and any three electives. The comprehensive exam is offered twice each academic year (once in the fall semester and once in the spring semester) during a five-day period to be determined by the Comprehensive Examination Committee. If a student fails any one test area of the comprehensive exam, he/she may retake the Comprehensive Examination just on that particular area in the following semester. If a student fails to pass the comprehensive exam a second time, then he/she will be terminated from the Graduate Program.

## **THESIS**

The thesis requirement consists of an original written document over the research findings that were done in compliance with the project's prospectus, a thesis presentation given to the public and performed publically during working hours, and a thesis defense wherein the candidate for the degree Master of Science defends their research hypothesis, research methods, and research results to their approved committee.

Thesis guidelines are available from the Graduate School's [Thesis/Dissertation webpage](#), or from Newton Gresham Library's [Thesis & Dissertation website](#).

### **Thesis Advisor**

A student pursuing a thesis option is to choose a graduate faculty member from the Department of Environmental and Geosciences at SHSU as a Major Advisor (see Appendix for Advisor – Student Agreement form), **by the end of the second semester**, to guide him or her in their thesis work. The Major Advisor will serve as the chairperson of their Thesis Advisory Committee and will be responsible for advising and guiding the student on research efforts. Per University policy, the Major Advisor must have Master's level graduate faculty status or higher. Should the student's Major Advisor change, a revised Advisor-Student Agreement form (see Appendix) should be submitted to the Graduate Coordinator.

### **Thesis Initiation Sheet**

Students who are enrolled in their first thesis-writing course (including proposal, prospectus, and praxis) must download, complete, and submit a **Thesis Initiation Sheet** (see Appendix).

### **Thesis Advisory Committee**

With the assistance of the Thesis Advisor, the student will select a minimum of two other faculty members from the Department of Environmental and Geosciences at SHSU to establish their Thesis Advisory Committee. Exceptions to this policy may be granted upon petition to the Graduate Committee. The Graduate Committee may allow one of the three Advisory Committee members to be outside the Department of Environmental and Geosciences at SHSU; however, that person must be able to contribute significantly to the thesis project. Exceptions will be granted on a case by case basis and the decision of the Graduate Committee is final. A fourth member of the Advisory Committee may be selected if desired; this faculty member may be outside of the department or University. If the Committee member is outside of the University, that member must be approved by the Dean of Graduate Studies (see the Graduate School website to complete a form to request approval). The Advisory Committee should be selected by the end of the second regular semester and no later than the third regular semester. It is the role of the Thesis Advisory Committee, working in concert with the student, to establish an appropriate sequence of work and plan of research to attain the student's thesis goals. It is the responsibility of the student to meet with his/her thesis advisory committee on a regular basis and keep them updated on the progress.

An **Advisor-Student agreement** (see Appendix) must be on file as soon a thesis advisory committee has been established.

The department in consultation with the library has decided that students pursuing the thesis track will follow the **Chicago Manual of Style** for citations when writing their prospectus and thesis. Prominent geography journals follow the Chicago Manual of Style. Here is a link to the Chicago Manual of Style: <http://www.chicagomanualofstyle.org/home.html> for further reference.

### **Prospectus.**

The candidate, in consultation with their thesis advisor/chair of the thesis committee, will select a subject of investigation and determine the availability of the required sources, facilities, materials, and equipment for the research and the writing of the thesis. The student will prepare a thesis prospectus which will specify the thesis topic, detail the purpose of the proposed investigation, describe the proposed method(s) of investigation, indicate the relationship of study to relevant research and findings of scholars in the student's area of concentration, and provide a commentary on source materials and/or facilities available for the successful completion of the research.

A student must present their prospectus *at the latest* by the beginning of their **third regular semester**.

The prospectus shall be submitted to the thesis committee on successful presentation. After the committee has approved and signed the prospectus, it is submitted to the academic dean for final approval. Any subsequent changes in the topic or the proposed method of investigation must be approved in writing by the thesis committee and submitted for approval to the appropriate academic dean.

In order to earn a grade of CR (Credit) in GEOG 6398 -Thesis I, a student must successfully present and defend a thesis prospectus. Until then a grade of IP will be awarded.

See Appendix for Thesis Prospectus Approval form.

### **Continuous Enrollment Requirement.**

Per University policy, once a student enrolls in a thesis course (GEOG 6398 or GEOG 6099), the student must continue to enroll in a thesis course each semester until the student graduates. For example, once a student enrolls in GEOG 6398, the student must either re-enroll in GEOG 6398 or enroll in GEOG 6099 the following semester, which would typically be the semester of expected graduation. Once a student has completed all of the thesis courses required for the degree, they may satisfy the continuous enrollment policy by enrolling in a 1-credit hour section of the thesis course.

It is advisable that a student should not register for any thesis courses until after the prospectus is approved, especially given that students must follow the continuous enrollment policy.

**Thesis Route Sheet:** The Office of Graduate Studies—in collaboration with the Registrar’s Office, the Library, and the IT—has created an electronic thesis route sheet for graduate students who complete theses and dissertations. This electronic route sheet is generated by the student and will appear in the emails of thesis/dissertation directors and co-directors, prompting them for approval. Simply click the button by approve and the electronic route sheet will move along in the chain of approvals. Here is a link to the form on the Office of Graduate Studies web page: <http://www.shsu.edu/dept/graduate-studies/theses-and-dissertations.html>.

As a general rule, a reasonably final draft of the thesis must be submitted to the student’s Advisory Committee **no later than two weeks prior** to the scheduled public defense in order to allow the committee ample time to read and edit the thesis.

A **Report of Thesis Examination** (see Appendix) should be filled out by the student after the thesis defense and submitted to the Dean’s office. The student should bring the form to the defense. A copy of this form should also be filed with the Graduate Coordinator.

Students participating in **Commencement Ceremonies** must arrange for a cap and gown at the University Bookstore at least 2 months before expected graduation.

**Time Table of Procedures and Processes** *(This is a tentative time table and may be customized for every student. Hence, every student will have variations depending on the needs and interests of each individual student).*

**First regular (i.e. fall or spring) semester:**

- 1) Enroll in GEOG 5361/GEOG 5362 (Traditional track) **OR** GEOG 5310/5364/5314 (Professional track) (if offered, otherwise wait until the following semester).
- 2) Sign and submit Graduate Student contract to the Graduate Coordinator.

**Second regular semester:**

- 1) After the completion of 6 graduate credit hours, all non-regular admission students must apply for regular admission and must have removed all conditional requirements.
- 2) Submit Degree Plan; specify choice of thesis or non-thesis plan.
- 3) If doing thesis, select Thesis Advisor and Thesis Advisory Committee.
  - a. Submit Advisory Committee Agreement form. (see Appendix for forms).
  - b. Submit Thesis Initiation Sheet
- 4) Work toward completion of the Prospectus (see Appendix for Prospectus Approval Form).
- 5) **Before the start of the third regular semester**, a thesis prospectus must be approved by the Thesis Advisory Committee, Department Chair, and Academic Dean (see Appendix – Thesis Prospectus Approval form). The approved thesis prospectus must be filed with the department.

**Third regular semester:**

- 1) Successfully complete Comprehensive Exam over graduate course work. **The Comprehensive Exam must be completed during the third semester.** After the exam, a **Report of Comprehensive Examination** form (see Appendix) must be submitted to the Graduate Coordinator.
- 2) Continue research and coursework for appropriate degree plan.

**Fourth - Sixth regular semesters:**

Continue research and coursework for appropriate degree plan.

# **Appendix**

Forms, Scholarship information and Checklists

## TENTATIVE GRADUATE COURSE ROTATION

Course Number	Course Name	Semester Offered
GEOG 5361	Geographic Information	<b>FALL</b>
GEOG 5363	Internet GIS	
GEOG 5364	Spatial Analysis	
GEOG 5366	Cartography and Visualization	
GEOG 5367	GIS Programming	
GEOG 5310	GIS Project Management	
GEOG 6398	Thesis I	
GEOG 6099	Thesis II	
GEOG 5311	GIS in Law Enforcement	<b>SPRING</b>
GEOG 5314	GIS for Professionals	
GEOG 5315	Spatial Database	
GEOG 5362	GIS Principles and Applications	
GEOG 5365	Digital Image Processing	
GEOG 5371	Geographic Information Systems in Energy-Related Fields	
GEOG 5373	Introduction to GPS, LiDAR and Radar	
GEOG 5374	Advanced GIS Analysis	
GEOG 6398	Thesis I	
GEOG 6099	Thesis II	
GEOG 5312	GIS ModelBuilder	<b>Summer</b>
GEOG 5313	Ethics in GIS	
GEOG 5369	GIS Internship	



## **GRADUATE COURSE DESCRIPTION**

### **GEOG 5361. Geographic Information**

This course introduces the principles of the structure and function of Geographic Information Systems. This includes raster and vector data structures, coordinate systems, projections and georeferencing, data capture and editing, creation and management of attribute data, basic and advanced spatial analysis, accuracy and availability of geospatial data, dissemination of output as maps, reports and over the Internet and hardware, software and technology integration issues. *Credit 3.*

Prerequisite: GEOG 2464.

### **GEOG 5362. GIS Principles and Applications**

Develops hands on skills using industry standard GIS software by putting in practice GIS fundamentals and theories learned in GEOG 5361. GIS applications in a wide variety of areas such as local governments, urban infrastructure management, natural resource management, geologic analysis, marketing will be explored. *Credit 3.*

### **GEOG 5363. Internet GIS**

Students are introduced to the principles and practices of interactive web-mapping and GIS data distribution across the Internet. Students learn to develop, customize, and publish GIS applications and geoprocessing tasks and share information through web services using ArcGIS Server and ArcGIS Online. *Credit 3.*

### **GEOG 5364. Spatial Analysis**

Students are introduced to the fundamental knowledge and techniques of spatial analysis. Students learn how to effectively use various spatial data to solve real-world problems. Topics covered may include spatial data structure, multiple layer operations, point pattern analysis, and network analysis. *Credit 3.*

### **GEOG 5365. Digital Image Processing**

This course emphasizes on the general principles of digital image processing to extract information from remotely sensed data. The remotely sensed data to be investigated include Landsat ETM, SPOT, hyperspectral Images and many others. Throughout the course, emphasis would be placed on image processing, image analysis, image classification, and integrating information extracted from remotely sensed data into a GIS. The digital image processing techniques to be covered include: image acquisition, image enhancement, image restoration, color image processing, image segmentation, image compression, image recognition, image quality assessment and statistical evaluation and change detection. Students will learn to use an industry standard digital image processing software- ERDAS Imagine. *Credit 3.*

### **GEOG 5366. Cartography and Visualization**

Students develop theoretical understanding and technical proficiency in the art, science, and techniques used in modern automated cartography and visualization. Emphasis is placed on different mapping techniques and surface rendering. Extensive computer lab exercises are required. *Credit 3.*

### **GEOG 5367. GIS Programming**

Students learn to use Python programming to develop customized GIS applications. Students

become familiar with the fundamental concepts in object-oriented programming and develop programming skills. *Credit 3.*

Prerequisite: GEOG 5361, GEOG 5362

### **GEOG 5369. Internship in GIS**

Students will work in an approved setting to obtain applied experience in the use of GIS. Students must be supervised by a member of the graduate faculty, who will determine whether the nature and amount of the work performed satisfies the requirements for graduate credit. *Credit 3.*

Prerequisite: GEOG 5361.

### **GEOG 5371. Energy GIS**

Students focus on the use and application of GIS and related geospatial technologies within a variety of energy related fields. Technological applications within pipeline routing, reservoir mapping, evaluation and visualization, and environmental assessments serve as the primary foci. Geospatial aspects of oil and gas production and distribution also are explored, as will GIS mapping and the management of GIS facilities. *Credit 3.*

### **GEOG 5373. Intro to GPS, LiDAR, & Radar**

Students focus on the concepts and applications of Global Positioning Systems (GPS), Light Detection and Ranging (LiDAR), and Radar systems. Topics may include accuracy assessment and appropriate use of LiDAR, Radar, and GPS data products. Students master the skills needed to use these data products in different applications such as topographic mapping, flood inundation studies, vegetation analysis, and 3D modeling. Course components may include lectures, labs, and field work. *Credit 3.*

Prerequisites: GEOG 5361

### **GEOG 5374. Advanced GIS Analysis**

This is an advanced level GIS analysis course. It teaches students systematically what a typical GIS analysis project should include and be implemented. Topics include defining problem, preparing data, choosing analytical methods, performing statistical analysis, and interpreting and evaluating results. Students will learn how to build and modify geoprocessing models using ArcGIS ModelBuilder and create spatial regression models. *Credit 3.*

Prerequisites: GEOG 5364

### **GEOG 5310. GIS Project Management**

Management strategies for GIS are examined by presenting GIS as an integrated system of people, computer hardware, software, applications, and data. The course may include design of implementation plans as case studies to explore various techniques associated with each step of this process. *Credit 3.*

Prerequisite: GEOG 5361.

### **GEOG 5311. GIS and Law Enforcement**

The primary foci of this course are the application of geospatial technologies in law enforcement and national security. Course topics may include the characteristics of geospatial intelligence and crime incident data, the use of GPS imagery, and the application of other geospatial technologies. Students use methods of spatial analysis to study a variety of public safety phenomena, such as heat mapping, change detection, and geographic profiling. *Credit 3.*

### **GEOG 5312. GIS ModelBuilder**

This course focuses on theories, topics and concepts that provide students a strong understanding of ModelBuilder, a program designed to create automated routines and workflows within a GIS environment. Through the development of skills and techniques with ModelBuilder, students learn how to create, use, and share interactive models within the ArcGIS platform. They will also learn how to document models so others can use them for their own intended purposes. *Credit 3.*

Prerequisite: GEOG 5362.

### **GEOG 5313. Ethics in GIS**

Students learn and examine the ethical guidelines for professionals who use GIS and geospatial technologies. Topics include the ethical issues that arise during data collection, data use, and data display, as well as the obligations of GIS professionals to society, employers, colleagues, and the profession. *Credit 3.*

### **GEOG 5314. GIS for Professionals**

Students solve problems by visualizing, querying, creating, editing, analyzing, and presenting geospatial data in both 2D and 3D environments using ArcGIS mapping applications and/or similar applications. *Credit 3.*

### **GEOG 5315. Spatial Database**

Students examine and apply the theoretical and practical aspects of a spatial database. Specifically, students create, use, edit, and manage spatial and attribute data in a spatial database and define domains, subtypes, and relationship classes. The focus is on the successful design, implementation, and management of a spatial database. *Credit 3.*

### **GEOG 5075. Special Problems in Geography**

This course is designed for graduate students who are capable of independent study of some particular geospatial research topic. Registration is permitted only upon approval of both the departmental faculty member with whom the student will be working and the graduate program coordinator. Students are required to submit a **Permission form** (*See appendix*) to enroll in GEOG 5075. *Credit 1-3.*

### **GEOG 6261. Seminar in Applied GIS Research Methods**

This course provides an introduction to scientific research methods in Geography and Environmental Studies. Topics covered include fundamental research concepts, scientific communication, data collection, physical measurements, behavioral observation and archives, explicit reports (survey, interviews, and tests), experimental and nonexperimental designs, sampling, statistical data analysis, data display, reliability and validity, and ethics in scientific research. This course is required for graduate students taking the thesis option.

### **GEOG 6398. Thesis I**

The student will begin working on a thesis involving research and study of the applications of GIS and related technologies. *Prerequisite Consent of graduate supervisor. Credit 3.*

### **GEOG 6399. Thesis II**

The student will complete a thesis involving research and study of the applications of GIS and related technologies. The work involved includes research on the approved thesis topic, preparation of a draft and a final thesis. *Prerequisite GEOG 6398 or consent of graduate*

*supervisor. Credit 3.*

# ADVISORY COMMITTEE AGREEMENT

I, \_\_\_\_\_, do hereby submit the names of the following faculty as advisory committee members. I attest that I have met and discussed with each of them my degree plan and they have agreed to serve on my committee.

Student's Signature: \_\_\_\_\_

Sam ID: \_\_\_\_\_ Major: \_\_\_\_\_

Printed Name: \_\_\_\_\_

<u>Committee Member Printed Name</u>	<u>Signature</u>
_____ (Committee Chair)	_____
_____ (Committee Member)	_____
_____ (Committee Member)	_____
_____ (Committee Member)	_____

Expected Graduation Date: \_\_\_\_\_

Date Received: \_\_\_\_\_ Graduate Advisor Signature: \_\_\_\_\_

<b>Office Use Only</b>	
All committee members have appropriate graduate faculty status?	
Yes _____	No _____
Date Approved: _____	Dean's Signature: _____

**Thesis Prospectus Approval**

Submitted to the College of: \_\_\_\_\_

Candidate: \_\_\_\_\_

Degree in Progress: \_\_\_\_\_

Proposed topic: \_\_\_\_\_

\_\_\_\_\_

**\*Attach copy of prospectus to this form**

Thesis committee approval: \_\_\_\_\_

(Major advisor)

(Date)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Department Chair: \_\_\_\_\_

Graduate Coordinator: \_\_\_\_\_

Final Approval by Dean, COSET: \_\_\_\_\_

**Comprehensive Examination Committee Form**

**(Submit to the Graduate Coordinator by Beginning of Third Semester in Program)**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Student ID#: \_\_\_\_\_

Do you have a degree plan on file? Yes \_\_\_\_\_ No \_\_\_\_\_

List your proposed Examination Committee members (please print names):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date of Comprehensive Exam: \_\_\_\_\_

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Graduate Coordinator Signature: \_\_\_\_\_ Date: \_\_\_\_\_

REGISTRAR'S OFFICE  
SAM HOUSTON STATE UNIVERSITY  
Huntsville, Texas

Report of Comprehensive Examination

A(n) \_\_\_\_\_ comprehensive examination was  
(oral/written/written and oral)  
administered to \_\_\_\_\_, Sam ID: \_\_\_\_\_  
a candidate for the degree of \_\_\_\_\_, on \_\_\_\_\_,  
20\_\_\_\_, in Room \_\_\_\_\_ of the \_\_\_\_\_ Building. The  
Student was examined on the following three areas of concentration and earned marks as  
indicated. The student may earn a mark of "High Pass", "Pass", or "Fail" on each area:

<u>Areas</u>	<u>Marks</u>
(1) _____	_____
(2) _____	_____
(3) _____	_____
(4) _____	_____
(5) _____	_____

A re-examination is \_\_\_\_\_ on area(s)  
(unnecessary/necessary/requested)  
\_\_\_\_\_, \_\_\_\_\_, and  
\_\_\_\_\_.

THE EXAMINING COMMITTEE:

_____ Chairman	_____ Date
_____	_____ Date
_____	_____ Date
_____ Dean, COSET	_____ Date



COLLEGE OF SCIENCE & ENGINEERING TECHNOLOGY  
SAM HOUSTON STATE UNIVERSITY  
Huntsville, Texas

Report of Thesis Examination

\_\_\_\_\_, SAM ID: \_\_\_\_\_

a candidate for the degree of \_\_\_\_\_

was examined on the thesis project entitled \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

on \_\_\_\_\_, 20\_\_\_\_, in Room \_\_\_\_\_ of the \_\_\_\_\_

building. The members of the thesis committee certify that the student \_\_\_\_\_  
(passed/failed)

THE THESIS COMMITTEE

\_\_\_\_\_  
Date

\_\_\_\_\_  
Committee Chair

\_\_\_\_\_  
Date

\_\_\_\_\_  
Committee Member

\_\_\_\_\_  
Date

\_\_\_\_\_  
Committee Member

\_\_\_\_\_  
Date

\_\_\_\_\_  
Dean, College of Science &  
Engineering Technology

## ***Request for Permission to Enroll in GEOG 5075***

I \_\_\_\_\_ am requesting permission to enroll in GEOG \_\_\_\_\_ for \_\_\_\_\_  
(name) (5075) (1,2,3)  
hours of credit for the \_\_\_\_\_ semester, \_\_\_\_\_. Dr. \_\_\_\_\_ will be my  
(fall, spring, summer) (year) (name)  
Supervising Instructor (SI).

I understand the following terms of the agreement, as well as the academic requirements listed below: (Please write your initials in the blank to the left of the requirements to indicate that you have read and understand these requirements):

- \_\_\_\_\_ 1. I must obtain approval from my Supervising Instructor (SI), and the GIS Graduate Program Coordinator (GGPC), *before* I can enroll in the course.
- \_\_\_\_\_ 2. The proposal must be submitted to the SI, and GGPC *far enough in advance of the start of the semester* in which the course is to be taken to allow time for review by the relevant parties.
- \_\_\_\_\_ 3. The research proposal should clearly explain: a) the purpose and nature of the project; b) the time frame for conducting the research; c) the type of data that will be obtained and analyzed, and how it will be obtained; and d) the final form in which the project will be submitted (paper, poster, database, map, etc.) If human subjects are involved (e.g., if I want to collect survey data), I understand that I must also obtain permission from the university's Institutional Review Board. \*This normally takes a minimum of a few weeks.
- \_\_\_\_\_ 4. The research project must be of appropriate academic rigor for this course. (This will be determined by the SI, GGPC, and the GIS Graduate committee).
- \_\_\_\_\_ 5. I understand that the final project must meet professional academic standards; i.e., it must be of the quality necessary for one or more of the following types of professional activities: publication in a professional journal; presentation at a research symposium as a poster or paper; use by faculty members in their research; etc... (*I understand that this project is NOT a book report – it is an independent study research project.*)
- \_\_\_\_\_ 6. The project needs to be submitted in final form to the SI no later than 10 days prior to the end of the semester and on the date established by the SI.

On the back of this page is a **checklist of steps** which must be completed before enrolling in the course, as well as a **list of the specifics** of the projects as agreed to by the SI and GGPC. Signature lines are provided, as needed, for the student, SI, and GGPC respectively.

**Checklist and Signature Page**

1. Proposal received by the SI. \_\_\_\_\_ Date \_\_\_\_\_

2a. As agreed upon by the student and the SI, the final project will be in the form of: (check one or more as necessary)

- \_\_\_\_ a. paper
- \_\_\_\_ b. poster
- \_\_\_\_ c. map
- \_\_\_\_ d. database
- \_\_\_\_ e. other (please specify)

\_\_\_\_\_

2b. Student will present the results:

- \_\_\_\_ a. at a conference (SWAAG, AAG, etc...)
- \_\_\_\_ b. to the SHSU Environmental and Geosciences Faculty
- \_\_\_\_ c. to geography students at SHSU
- \_\_\_\_ d. at an SHSU graduate research symposium on campus
- \_\_\_\_ e. only to the SI
- \_\_\_\_ f. other (please specify)

\_\_\_\_\_

2c. The project must be submitted to the SI by the following date: \_\_\_\_\_

Student's signature \_\_\_\_\_ Date \_\_\_\_\_

SI's signature \_\_\_\_\_ Date \_\_\_\_\_

\_\_\_\_\_

3. Proposal received by GGPC. \_\_\_\_\_ Date \_\_\_\_\_

4. Proposal has been **accepted/rejected** (circle one) by GGPC and GIS Graduate committee members.

GGPC \_\_\_\_\_ Date \_\_\_\_\_

1. If the section of the course in which the student will enroll is not offered under the SI's name, please have the Instructor of Record (IOR) responsible for entering the student's grade *sign and date* this form in the space below as acknowledgment that he/she will serve as the IOR for grade entry. \_\_\_\_\_  
Date \_\_\_\_\_

Comments/Suggestions by GGPC and GIS Graduate committee for improvement of the proposal: \_

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# Sam Houston State University

*A Member of the Texas State University System*

OFFICE OF GRADUATE STUDIES

## **Thesis and Dissertation Initiation Sheet**

Please complete the entirety of this form and submit to the Office of Graduate Studies by mail, email, or direct drop off during regular university hours.

**Email:** gradstudies@shsu.edu

**Phone:** (936) 291-2408

**Main campus:** ABIV, Office 431

**Mail:** Office of Graduate Studies

Sam Houston State University

Box 2541

Huntsville, TX 77341-2541

### **Student Information**

University ID#:	<input type="text"/>	Expected Graduation Date:	-	<input type="text"/>	-	<input type="text"/>
First name:	<input type="text"/>	Middle name or initial:	<input type="text"/>			
Last name:	<input type="text"/>					

**College and Program Information**

Thesis

Dissertation

Thesis / Dissertation Director

Thesis / Dissertation Co-Director (if applicable)

List all other committee members:

College:

Department:

Please provide a brief summary of your research question:

**Note:** The Thesis Initiation sheet can also be found in two locations on the Graduate Studies' website:

- Graduate Studies >> Faculty and Staff Resources >> Faculty & Staff  
Forms: <http://www.shsu.edu/dept/graduate-studies/faculty-staff-resources.html>
- Graduate Studies >> Graduate Student Toolkit >> Student  
Forms: <http://www.shsu.edu/dept/graduate-studies/grad-toolkit.html>

## College of Science and Engineering Technology (COSET) Scholarships

### Graduate Recruitment Scholarship

**The College of Science and Engineering Technology (COSET) Graduate Recruitment Scholarship is a \$1,500 competitive scholarship awarded to outstanding students entering their first semester of a COSET graduate program at SHSU and who have not been awarded a graduate assistantship.**

To be considered for the COSET Graduate Recruitment Scholarship, a student must be accepted into a graduate program in the College of Science and Engineering Technology, be entering their first semester in the program, and plan to be a full-time student. Nominations for the scholarship will be accepted from SHSU faculty, or students may self-nominate. An international student applying for the scholarship must have a transcript evaluation on file with the COSET Dean's office (transcript evaluations by qualified SHSU faculty are acceptable). Applicants will be evaluated by cumulative GPA.

*An application can be found [here](#), and applications must be scanned and emailed to Ms. Shellie Armstrong at [sda006@shsu.edu](mailto:sda006@shsu.edu) by 5:00 pm on the day of the deadline. Paper applications will not be accepted.*

The application deadlines for the Fall scholarship are **April 1st** (first round) and **July 15th** (second round), and the application deadline for the Spring scholarship is **November 15th**.

**Please note:** To be eligible for any COSET scholarship, you are required to complete the General Application in [Scholarships4Kats](#).

### Graduate Achievement Scholarship

**The College of Science and Engineering Technology (COSET) Graduate Achievement Scholarship is a \$1,500 competitive scholarship awarded to students demonstrating outstanding academic progress in a COSET graduate program.**

To be considered for the COSET Graduate Achievement Scholarship, a student must be enrolled full-time in a graduate program in the College of Science and Engineering Technology and have an SHSU graduate GPA. Students in their first semester of a COSET graduate program are not eligible for the scholarship and should consider applying for the COSET Graduate Recruitment scholarship instead. Students who are already receiving a scholarship as a bonus to their graduate assistantship (generally, those students in their first or second semester in a COSET graduate program who have been awarded a graduate assistantship), are not eligible for the scholarship. Students receiving a PhD stipend are also not eligible. Certain exceptions are permitted; interested students are highly encouraged to inquire about eligibility. Please direct inquiries to Li-Jen Lester ([lys001@shsu.edu](mailto:lys001@shsu.edu)).

Complete applications require:

1. a ½-page personal statement from the applicant (that includes the applicant's Sam ID) describing their academic progress toward the degree, including planned graduation date, and progress on the thesis, capstone project, or dissertation (where applicable), and
2. a letter of evaluation from the applicant's major advisor or graduate program coordinator describing the applicant's progress toward the degree and overall performance in the graduate program.

***Applicants must email their personal statement as a Word or pdf document to Li-Jen Lester ([lys001@shsu.edu](mailto:lys001@shsu.edu)) with Graduate Achievement Scholarship in the subject line by 5:00 pm on the day of the deadline.***

***The letter of evaluation must be emailed directly from the applicant's major advisor or graduate program coordinator to Li-Jen Lester ([lys001@shsu.edu](mailto:lys001@shsu.edu)) by 5:00 pm on the day of the deadline.***

The application deadline for the fall scholarship is **July 1<sup>st</sup>**, and the application deadline for the spring scholarship is **December 1<sup>st</sup>**.

**Please note:** To be eligible for any COSET scholarship, you are required to complete the General Application in [Scholarships4Kats](#).

## **The Graduate School General Scholarship**

The General Graduate School Scholarship is intended for high-quality students in SHSU graduate programs. Applications for this \$1000 scholarship will be accepted for both new and current students. Students may submit new applications each semester while enrolled in graduate programs.

**[Scholarship 4 Kats Portal](#) (Search under Opportunities for The Graduate School General Scholarship after completing the General Application)**

If you have any questions regarding the General Graduate School Scholarship, please contact The Graduate School at [TheGraduateSchool@shsu.edu](mailto:TheGraduateSchool@shsu.edu).



**Checklist for graduate students**

**(to be kept in student file)**

**Name** \_\_\_\_\_

	<b>Task</b>	<b>Date</b>	<b>Signature</b>
1.	Obtain copy of Departmental Graduate Handbook	_____	_____
2.	Sign and submit Graduate Student contract	_____	_____
3.	Meet with Graduate Coordinator for course selection	_____	_____
4.	Degree Plan selected	_____	_____
5.	If doing thesis, thesis advisor selected	_____	_____
6.	Thesis Advisory Committee established	_____	_____
7.	Prospectus approved, presented and submitted to Dean's office	_____	_____
8.	Comprehensive exam scheduled	_____	_____
9.	Comprehensive exam completed	_____	_____
10.	File degree application for graduation		