

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



**DEPARTMENT OF GEOGRAPHY AND GEOLOGY  
COLLEGE OF SCIENCE AND ENGINEERING  
TECHNOLOGY  
SAM HOUSTON STATE UNIVERSITY**

Updated Fall 2018



GRADUATE STUDENT CONTRACT

I, \_\_\_\_\_ have received a copy of the Graduate Student Handbook from the Department of Geography and Geology. 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 Catalogue, 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I agree that my admission status as well as any financial support by the Department of Geography and Geology may be withdrawn should it be found that I have not followed these policies in good faith.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 Geography and Geology offers a Master of Science degree in Applied GIS. The program requires students to complete 36 credit hour of graduate course work. The program offers a mix of face-to-face classes and online classes. Face to face classes are offered during daytime and in the evening at the Sam Houston State University campus located at The Woodlands Center on Hwy 242.

Graduate students can select one of two available degree plans/paths: 1) Thesis track which requires 30 course credits, plus 6 credits of thesis research. 2) Non-thesis track which requires 36 course credits.

## **APPLICATION / ACCEPTANCE PROCEDURES**

### **Regular Admission**

#### ***Requirements***

A BA or BS degree, or a foreign equivalent, is required for admission. Degrees need not be from a program in Geography.

Applicants should understand that the admissions process is competitive, based on a careful assessment of each applicant's file, and that we can only offer admission to a limited number of qualified applicants to ensure high quality advising and accessibility to facilities and other resources.

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 should also visit the [International Programs](#) page for more information about graduate studies at Sam Houston State University.

#### ***Admission Procedures***

Applications are evaluated once per semester.

#### ***Application Process***

Our application process is completed using the [Graduate Studies](#)' online admission system. Please note that your application will not be complete without submitting an [application fee](#).

### *Transcripts*

Official or unofficial transcripts may be submitted to the Graduate School Admissions office for initial review. Please note that official transcripts will be required from all admitted students for registration.

### **Letters of recommendation**

Two letters of recommendation are required. Please note that you do not need to wait for your recommendation providers to submit their recommendations before completing the rest of the online application.

### *Graduate Record Exam*

The Official Graduate Record Exam ([GRE](#)) scores for the verbal and quantitative sections, taken within the last five years should be submitted to the Graduate School.

### *English language proficiency exam score (TOEFL)*

Students whose native language is not English must take the [Test of English as a Foreign Language](#) (TOEFL).

This requirement is waived for applicants who have completed one academic year of study at an American (or other English-speaking) 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 program 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. Certificate students may transfer to the regular degree 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 and 4000 level classes 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.

### **Graduate Credit for 4000 level course.**

Graduate credit for an undergraduate 4000 level GIS course (*please refer to appendix for approved 4000 level undergraduate courses that can be taken for graduate credit*) will be approved only under the following circumstances:

1. The graduate student has taken all other graduate courses that are being offered during the semester when graduate credit for an undergraduate course is being requested
2. The graduate student is graduating during that semester
3. The undergraduate 4000 level course is relevant to the student's Applied GIS graduate degree.

Up to two 4000 level undergraduate courses can be included in the degree program upon approval by the graduate program coordinator. In order to receive graduate credit for taking 4000 level undergraduate courses:

- a. Student should complete the Graduate Credit Form (*see appendix*) and submit it to the Dean's office no later than the 12<sup>th</sup> class day of the semester in which the 4000-level course is taken.

- b. Student will be required to submit a syllabus or some other documentation from the instructor of the 4000-level course, outlining the additional assignments/requirements for students taking the course for graduate credit.
- c. Student must receive prior approval from the department chair, graduate program coordinator and the academic dean and complete additional requirements as outlined by the professor.

## **ACADEMIC EXPECTATIONS**

### **Academic Expectations.**

A minimum cumulative grade point of 3.0 (4.0 scale) is required. When the grade of C is earned in any course, it must be balanced by a grade of A in an equivalent course taken in the same academic program. (A grade of A earned at another institution may not be used to remove a grade deficiency earned in residency at Sam Houston State University).

### **Academic Probation and Suspension.**

For a student to remain in academic good standing at Sam Houston State University and graduate, a graduate student must maintain an overall grade point average of at least 3.0 (B) on all graduate course work attempted.

A student who falls below a 3.0 overall grade point average at the end of any semester or completion of the summer session (both sessions) during which one or more semester hours are attempted will be placed on probation. If a probationary student does not achieve a minimum of 3.0 overall grade point average at the close of the next semester or summer session, the student will be suspended.

A student who earns a total of three grades of C or one grade of F will be terminated. Any appeal for a review of termination should be directed in writing to the graduate committee.

## **CREDIT HOUR RESTRICTIONS**

The normal course load is nine credit hours per full semester and 3-6 credit hours per summer session. Increased academic loads must be approved by the academic dean.

## **PROCEDURES FOR MASTER OF SCIENCE DEGREE**

### **Graduate Coordinator.**

Dr. Falguni Mukherjee, fsm002@shsu.edu, is the graduate coordinator for all graduate students seeking a Master's degree in Applied GIS. Dr. Brian Cooper, [bio\\_bjc@shsu.edu](mailto:bio_bjc@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 graduate students submitting any official paperwork and to assist you with course selection.

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

A suggested list of required courses is found in the Graduate Catalogue (*also included in the appendix*). However, the Master's program may be tailored to fit the needs and interests of each individual student. The degree requires 36 hours of course work for the non-thesis option and 30 hours of course work for the thesis option, plus 6 hours of thesis credit.

### **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. 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 and within an eight-year period for doctoral level graduate work. The period of time a student is on an approved leave of absence will be counted as time accumulated toward that six-year or eight-year deadline for completion of the degree. Any extension of the six-year or eight-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 comprehensive exam (*see below*), over the graduate course work of their degree program.

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. 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 finishing 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 Masters of Science defends their research hypothesis, research methods, and research results to their approved committee.

Thesis Guidelines are available from the University Office of Graduate Studies in the Administration Building, Room 203, respective Dean's office, or from the web at <http://library.shsu.edu/research/guides/thesis/>

### **Thesis Advisor**

Each student is to choose a graduate faculty member from the Department of Geography and Geology 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 Geography and Geology 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 Geography and Geology 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 Office of Graduate Studies 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 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 should 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 (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 should 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, the **Report of Comprehensive Examination** form (see Appendix) should 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 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 5367	GIS Programming	
GEOG 5366	Cartography and Visualization	
GEOG 5310	GIS Project Management	
GEOG 5369	GIS Internship	
GEOG 6398	Thesis I	
GEOG 6099	Thesis II	
GEOG 5362	GIS Principles and Applications	<b>SPRING</b>
GEOG 5365	Digital Image Processing	
GEOG 5311	GIS and Law Enforcement	
GEOG 5371	Energy GIS	
GEOG 5373	Introduction to GPS, LiDAR and Radar	
GEOG 6261	Seminar in Applied GIS Research Methods	
GEOG 5369	GIS Internship	
GEOG 6398	Thesis I	
GEOG 6099	Thesis II	
GEOG 5374	Advanced GIS Analysis	
GEOG 5312	GIS ModelBuilder	<b>Summer</b>

## 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 application 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 5364. Spatial Analysis**

In this course students will acquire knowledge and techniques of spatial analysis, and learn to effectively use various spatial data to solve real-world problems. *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**

This course examines the fundamentals and practical applications of cartographic visualization. The course examines traditional and contemporary cartographic techniques. Topics covered include geospatial data representation, map design, geographic visualization and display. *Credit 3.*

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

This course will provide an introduction to computer programming principles and their application in a Geographic Information Systems environment. Principles will be introduced using a GIS scripting language. Once programming principles are understood, students will begin to learn Python programming language for working with ArcGIS software and Python IDLE (Python GUI). Students will master the use of Python scripts to manipulate basic mapping objects and complete geoprocessing tasks. The coursework will involve map scripting, debugging and error handling, and creating custom tools using Python scripts. *Credit 3.*

Prerequisite: GEOG 5361, Advanced GIS class or Instructor's consent.

### **GEOG 5368. GIS Program Use and Applications**

This course allows students to take modules through ESRI's "Virtual Campus" in order to enhance their knowledge of particular software application programs used in the GIS field. Accordingly, it enables students to gain a higher level of specialization in the use of programs that are of particular relevance to their career requirements. *Credit 3.*

Prerequisite: GEOG 5361.

### **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**

This is a survey of use of geographic information systems and related technologies such as GPS and aerial imagery in the energy field, particularly oil and gas production and exploration and midstream and downstream areas. It is useful for graduate students in Applied GIS as well as those professionals in geospatial technologies and earth sciences wishing to learn more about this important application area. It covers such topics as mapping and assessment of basins, plays, fields and wells. Land-base creation and issues, pipeline corridor analysis, and off-shore issues. It also covers integration of CAD data, seismic data, reservoir visualization and aerial imagery. *Credit 3.*

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

This course provides the practical skills, knowledge, and understanding of quantitative measurement tools in the field of environmental and geospatial applications. It focuses on the basic concepts and applications of GPS (Global Positioning System), LiDAR (Light Detection and Ranging), and Radar systems. It introduces fundamental concepts of accuracy assessment and appropriate use of these data products. Students will also master the basic skills needed to leverage these data sources and information products in diverse application domains including, topographic mapping, flood inundation studies, vegetation analysis, and 3D modeling of urban infrastructure. Course component includes lectures, labs, and field work. *Credit 3.*

Prerequisites: GEOG 5361 or Instructor's consent.

### **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 or Instructor's consent

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

This course teaches strategies for successful GIS management and implementation in an institution-wide context. Implementation management strategies are introduced through a process of systematic user needs assessment, requirements specification, database design, application development, implementation, and operation and maintenance. *Credit 3.*

Prerequisite: GEOG 5361.

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

This is a survey of the use of geographic information systems and related technologies like GPS and aerial imagery in law enforcement. It is intended for graduate students in disciplines such as Applied GIS, Criminal Justice and Digital Forensics. It covers such topics as crime mapping and analysis, policing and deployment, critical incident response, spatial aspects of crime statistics, crime scene investigation, community supervision and corrections, counter terrorism and information security applications areas. Use of tracking devices, laser surveying instruments and drones are featured. *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 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.*

## **Undergraduate courses that may be taken for graduate credit**

### **GEOG 4361. Geographic Information Systems for Public Health.**

This course covers the theory and application of Geographic Information Systems (GIS) for public health. It includes an overview of the principles of GIS in public health and practical experience in its use. In addition, it covers the application of GIS mapping and analyzing the geographic distribution of populations at risk and health outcomes. The practical component involves the use of desktop GIS software packages. *Credit 3.*

### **GEOG 4359. Transportation Geography.**

This course introduces the concepts, theories, and methods of transportation geography. It covers transportation infrastructure, modes of terminals, transportation economics, urban transportation, logistics, and transportation planning. In addition, this course covers various analytical techniques applied in transportation analysis, such as network analysis, gravity models, location-allocation modeling, and geographic information systems in transportation studies. *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

College of Science & Engineering Technology  
Graduate Program

GRADUATE CREDIT FORM

\_\_\_\_\_  
Date

\_\_\_\_\_  
Sam ID

\_\_\_\_\_  
Last Name                                      First Name                                      MI

Undergraduate course(s) to be given graduate credit (please include CRN):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Courses completed in:                      \_\_\_\_\_ Semester                      \_\_\_\_\_ Year

\_\_\_\_\_  
Graduate Advisor

\_\_\_\_\_  
Coordinator

\_\_\_\_\_  
Departmental Chair

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

Forwarded to Registrar by Dean’s Office: \_\_\_\_\_

\*Note: This form must be filled out before the 12<sup>th</sup> class day during a long semester or the 4<sup>th</sup> class day during a summer session in order to receive graduate credit for an undergraduate course.



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

I \_\_\_\_\_ am requesting permission to enroll in GEOG \_\_\_\_\_ for \_\_\_\_\_  
(name) (4075 or 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 Geography 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 \_\_\_\_\_

4. 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#:  Expected Graduation Date: -  -

First name:  Middle name or initial:

Last name:

**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>

**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		