

# **GEOG 5364 Spatial Analysis**

## **Course Information**

### **Instructor**

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### **Course Description**

This is an advanced GIS course which covers various analytical methods used in GIS and spatial analysis. Students will develop an understanding of spatial analysis methods and learn practical skills in using GIS and spatial analysis. Using real world data and examples, this course will teach students to explore patterns, relationships, and trends, solve problems, and make optimal decisions. This course reviews a range of spatial analytical techniques and their implementation in leading GIS software packages. An important aspect of the course is to gain hands-on experience in applying these techniques using GIS and spatial analytical software to address different research questions.

### **Textbook**

- [The ESRI Guide to GIS Analysis, Volumes 1](#) by Andy Mitchell, ESRI Press
- [GIS Tutorial II - Spatial Analysis Workbook](#) by David Allen, ESRI Press

### **Software**

The primary GIS software used in this course is ArcGIS and its Spatial Analyst / Geostatistical Analyst extensions. If you do not have access to a computer with ArcGIS installed, I can give you a free student version (including the extensions) with a one-year license that you may install on your own PC. Please download a copy of ArcGIS for Desktop at the following address:

<http://www.esri.com/landing-pages/software/arcgis/arcgis-desktop-student-trial>

After you download the software, please let me know so I can send you an activation code. The current version of ArcGIS is 10.3, but any early version of 10 should work as well.

## **Exams and Grading**

This class will be very lab-intensive. There will be eight lab exercises with each counting 50 points. There will also be a lab final (200 points) and a final project (200 points). Here is the breakdown of the grades:

Labs (50*8)-----	400 (50%)
Final Project-----	200 (25%)
Lab Final-----	200 (25%)
Total-----	800 (100%)

The grades will be assigned as follows:

A (720-800), B (640-719), C (560-639), D (480-559), F (less than 480)

## **Late Work**

Each assignment has a specific due day. Please submit your work on time. Any overdue submission will not be accepted.

There are no makeup for final exam and final project. The final exam will be on the last class day and the final project will also be due by the last class day (please check the school Academic Calendar for the official Last Class Day).

## **Final Project**

Each student is required to conduct a research project using the technique learned in this class to solve a real-world problem. Choose a topic that you are interested in. I suggest you start to think about your final project as early as possible. The research project should include the following components: Statement of the problem, previous research on the problem (literature review with references cited), how you use GIS to address the problem, data and methodology, results, conclusion and discussion.

## **Academic Honesty**

Students are encouraged to study in groups to prepare for tests. However, “group effort” is definitely not permitted when taking exams! This will result in an automatic zero on a test. Two such occurrences will result in an F in the course.

Substantially presenting someone else's work as one's own will also result in an F. Helping one another is encouraged after one's own work is finished, but don't do someone's work for them.

## **STUDENTS WITH DISABILITIES POLICY:**

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>