

Fall 2009
Geography 319
Introduction to Geographic Information Systems
Butte Hall room 501

Steve Stewart - Instructor
Steve Verbrugge – Lab Assistant

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Class Time:
Tuesday, Thursday 8:00 – 9:15

Lab Hours
Geog 198A
M, W, F 9:00 – 10:00

Office: Butte Hall 508
Office Hours: M 8:00 – 10:00 & TTH 9:15 – 10:45

Course Description:

This class focuses on the use of Geographic Information Systems. Emphasis will be placed on Geographic Information Systems theory. Topics to be covered include history of GIS, projections, graphic portrayal of spatial information, digital data structures, data acquisition, software and hardware for GIS, spatial analysis functions, and an overview Geographic Information Systems (GIS).

Course Objectives:

1. Introduce students to the field of Geographic Information Systems
2. Review the history of Geographic Information Systems
3. Become familiar with projection systems
4. Become familiar with digital data types and models
5. Provide students with an overview Geographic Information System theory
6. Introduce students to spatial operations

Exams:

Two objective exams will be administered (100 pts. each)

MIDTERM

FINAL

Two Quizzes will be administered (25 pts each)

Laboratory exercises:

Approximately 9 lab exercises will be given (generally 10 pts. each)

Two applied lab projects

1. The Grand Canyon Lab 20 pts.
2. The Snow Lab 30 pts.

Laboratory edict:

Please inform the lab manager or supervisor of any technical problems with the lab. This is the lab manager's expertise and responsibility. I will, however, ensure that technical issues that impact students' coursework in the lab are resolved as quickly as possible.

Required Materials:

- Fundamentals of Geographic Information Systems by Michael N.. Demers, Second or Third Edition
- Getting to Know ArcGIS Desktop by Tim Ormsby, Eileen Napoleon, Robert Burke, Carolyn Groess, and Laura Feaster. **NOTE:** You must have the 2nd edition of this text.

Attendance Policy:

Regular attendance is required. Consistent non-attendance during the first 4 weeks of class will result in the student being withdrawn by the instructor. The responsibility of formally withdrawing from the class after the first 4 weeks is the student's. Chronic non-attendance after the first four weeks may cause a reduction in the letter grade that was earned or a grade of "F" to be awarded.

Course Grade:

Your final grade for the course will be based on the number of points you accumulate during the semester. The course objectives and associated points are detailed elsewhere in this syllabus. Students who do not formally withdraw and do not complete minimum course requirements will earn a failing grade. Incompletes are at the instructor's discretion and only granted due to extenuating circumstances.

Late Assignments:

No late work will be accepted. The instructor is aware that technical problems do arise for time to time; therefore, the lowest lab score will be dropped.

Make-ups:

Making up exams is solely at the discretion of the instructor with written documentation expected to substantiate the cause of an unexcused absence.

Cheating:

Collaboration with your fellow students is encouraged; however, you are expected to complete all of the labs individually. Students found cheating on exams or representing the work of others as their own will be given an "F" grade for the exam/assignment and for the course. Students caught cheating will also be introduced to Lizanne Leach the Coordinator of University Student Discipline.

Incomplete:

A grade of "I" will be awarded when, due to unanticipated and extenuating personal circumstances, the student can not complete the class. An "I" grade will only be awarded at the written request of the student, given to the instructor prior to the beginning of the final exam week. The instructor has the final determination in awarding an "I" grade.

Class Schedule

The class schedule and assignments are subject to change at the discretion of the instructor

Dates	Section 01
Week One	Introduction History of GIS What is a GIS <i>In class Raster Lab</i> <i>Read Demers Chapter one</i> Photo Flashcard – Due Thursday (5 pts)
Week Two	GIS Data Models – Raster Vs. Vector <i>Read Demers Chapter Four</i> <i>Read ArcGIS Chapters One – Four</i> <i>Lab Three – ArcGIS Exercises 3a – 3c and 4a – 4c</i> Lab - Raster Lab Due Tuesday (5 pts) Lab - Chapter Three (step 15) & Chapter Four (step 18) Due Thursday (5 pts)
Week Three	GIS Data Models – Vector Vs. Raster Chico Lab #1 <i>Read Demers Chapter Five</i> FURLOUGH DAY (TUESDAY)
Week Four	Chico Lab #2 <i>Read Demers Chapter Three</i> Lab – Chico Lab Ex #1 Due Tuesday (10 pts)
Week Five	Earth as a Sphere Ellipsoid Models and Datums Projections <i>Read Demers Chapter Six</i> Quiz #1 Tuesday (25 pts) Lab – Chico Lab #2 Due Thursday (10 pts)
Week Six	Precision Vs Accuracy Feature Types <i>Read Demers Chapter Seven</i> Chapter 13 ArcGIS Exercises - Projections
Week Seven	Cartographic Basics Properties of Spatial Data <i>Read Demers Chapter Two and Fourteen</i> <i>Chapter Seven – ArcGIS exercises- Classification and Labeling</i> Midterm review Lab – Chapter Thirteen (step 19)– Due Tuesday at start of class (10 pts) NACIS CONFERENCE – THURSDAY CLASS CANCELED
Week Eight	Midterm Review - Tuesday <i>Chapter Seven supplement – Tuesday at start of class (20 pts)</i> FURLOUGH DAY (THURSDAY)
Week Nine	Midterm Tuesday (100 pts) <i>Read Demers Chapter Eight</i> <i>Chapter Eight ArcGIS exercise – Querying Data</i>
Week Ten	GIS Analysis Functions: Integrated Analysis of Spatial and Attribute Data <i>Read Demers Chapter Nine</i> Lab - Chapter Eight (supplement) – Due Tuesday (10 pts) FURLOUGH DAY (THURSDAY)

Week Eleven	<p>GIS Analysis Functions: Integrated Analysis of Spatial and Attribute Data <i>Read Demers Chapter Twelve</i> <i>Chapter Ten – ArcGIS exercises – Spatial Selection</i> Lab – Chapter Ten (supplement) – Thursday (10 pts)</p>
Week Twelve	<p>GIS Analysis Functions: Integrated Analysis of Spatial and Attribute Data <i>Read Demers Chapter Ten</i> <i>Chapters 11 & 12 – ArcGIS exercises – Spatial Analysis</i> FURLOUGH DAY (THURSDAY)</p>
Week Thirteen	<p>GIS Analysis Functions: Integrated Analysis of Spatial and Attribute Data <i>Read Demers Chapter Eleven and Chapter Thirteen</i> <i>Applied Lab project #1</i> Lab 9 - Chapters 11 and 12 (supplement) – Due <u>Tuesday</u> (10 pts) Quiz #2 – Thursday (25 pts)</p>
Week Fourteen	<p>Thanksgiving Break</p>
Week Fifteen	<p>Data Quality <i>Applied Lab Project #2</i> Applied Lab Project #1 Due Tuesday (20 pts)</p>
Week Sixteen	<p>GIS Package Functionality Selecting a GIS <i>Read Demers Chapter Fifteen</i> <i>Applied Lab Project #2</i> Final Review</p>
Week Seventeen Finals Week	<p>Applied Lab Project #1 Due at final (30 pts) Final – TBA (100 pts)</p>