University of Connecticut

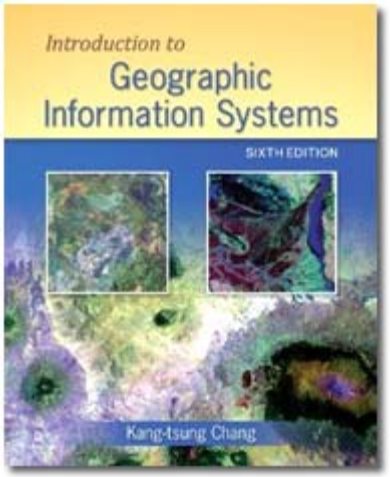
Syllabus
GEOG 5500 Fundamentals of GIS

Course Information and Requirements

Course Title: GEOG5500 Fundamentals of GIS
Credits: 3
Prerequisites: None
Course Designer: Dr. Chuanrong Zhang
Instructor: Natalia Vorotyntseva

E-mail: Natalia.Vorotyntseva@uconn.edu (After the first day of classes, students registered in the course should send all messages to the instructor via HuskyCT *Messages* tool.)
Office: 423 B Austin Building (formerly CLAS)
Office Hours: By email appointment, students may contact the instructor through Skype (account name is: natalia.vorotyntseva).

Required Text:



Introduction to Geographic Information System 6th Edition
By Kang-tsung Chang
McGraw-Hill Publisher May 1, 2011
ISBN-10: 0071086161
ISBN-13: 978-0071086165

Additional Requirements:

The developer of this course is Dr. Chuanrong Zhang, Professor of Geography at the University of Connecticut.

All images, charts, graphs were created by the instructor unless otherwise cited.

Course Description

"Fundamentals of GIScience" course introduces the basic principles of GIScience and spatial analysis using GIS software. This course is designed to be an introductory graduate class. It emphasizes the understanding of GIS theory, technology, and applications. It will focus on teaching students the principles and operation of GIS software through computer-based exercises and project. Exercises train students in solving spatial problem utilizing GIS mapping and statistical methods. The project will give students hands-on experience in using computerized technologies for geographic analysis. It intends to help students understand GIS technical issues and become proficient with GIS software. While exploring ESRI software such as ArcGIS as tools, this course also focuses on learning about GIS concepts, independent of the software that is used to address them.

Course Goals and Objectives

At the completion of this course, you will be able to:

- Understand the principles and operation of GIS software

- Solve spatial problems utilizing GIS mapping and statistical methods
- Understand GIS technical issues
- Proficient with GIS software
- Understand GIS concepts

Course Grading

Tests and assignments:

Course project: Students will create or propose a specific GIS application. It will offer an opportunity to refine and apply skills learned. It is expected that students will consult with the instructor about the project. (10%)

Nine exercise assignments: All assignments are due at the specific time assigned. No late assignments will be accepted except in extraordinary circumstances. (40%)

Three Exams: The exam format may include multiple choices, true or false and short answer. The exams cover the lectures, assigned reading, and assigned exercises. A make-up exam will be scheduled only in the event of personal illness or extraordinary circumstances. Anyone who will miss an exam must notify the instructor in advance of the exam date. (40%)

Five quizzes: There will be five very easy quizzes in the format as short answer. Each quiz is graded on a 10 point scale (1 short answer question). (5%)

Grading:

Students final course grade will be based on course project, 9 exercise assignments, five quizzes, and three exams:

Grade Breakdown		
Course Project	150 points	10%
9 Exercises	410 points	40%
5 Quizzes	50 points	5%
3 Discussions	30 points	5%
First Exam	100 points	10%
Second Exam	100 points	10%
Final Exam	200 points	20%

Grade Scale	
A	93 - 100 %
A-	90 - 92 %
B+	87 - 8 %
B	83 - 86 %
B-	80 - 82 %
C+	77 - 79 %
C	73 - 76 %
C-	70 - 72 %
D+	67 - 69 %
D	63 - 66 %

Assignment Number	Total points
1	50
2	50
3	50

4	25	D-	60 - 62 %
5	50	F	Below 60 %
6	30		
7	60		
8	45		
9	50		

As your instructor I, and the university, have a responsibility to promote academic honesty and integrity. You, as a student, are (1) responsible for the honest completion and representation of your work, (2) expected to respect the academic endeavours of others.

Academic Honesty and Student Code

All exercises, quizzes, and examinations are open-book and open-notes. However, except for the exercises, you cannot communicate with any other person or persons in any fashion whatsoever while in the process of taking the quizzes or examinations. I expect everyone to follow this code of conduct. In the unfortunate event where someone is found in violation of this policy, it will be handled according to the Student Code of the University (see below), which may be found on the website of the Division of Student Affairs. Pay special attention to Appendix A: Academic Integrity in Undergraduate Education and Research. If you have any questions, please check with me.

Academic dishonesty of any type will not be tolerated in this class. Students should refer to the Student Code (see section on Academic Integrity - http://www.dos.uconn.edu/student_code.html) for specific guidelines.

Accessibility Issues

Students with disabilities who believe they may need accommodations in this class are encouraged to contact the **Center for Students with Disabilities** (486-2020) as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

Course Outline

Date	Topic	Chapter	Lab Exercises	Due Date
Session 1	Introduction	Chapter 1 & 2	Assignment 0	January 27, 12 PM
Session 2	Vector Data Model/Raster Data Model	Chapter 3 & 4	Assignment 1 Discussion Quiz 1	February 3, 12 PM February 1, 12 PM February 1, 12 PM
Session 3	GIS Data Acquisition/Geometric Transformation	Chapter 5 & 6	Assignment 2	February 10, 12 PM
Session 4	Spatial Data Editing/Attribute Data Management	Chapter 7 & 8	Assignment 3 Quiz 2	February 17, 12 PM February 17, 12

				PM
First Exam	Sessions 1-4			February 24, 12 PM
Session 5	Data Display and Cartography	Chapter 9	Assignment 4	March 3, 12 PM
Session 6	Data Exploration/Vector Data Analysis	Chapter 10 & 11	Assignment 5 Quiz 3	March 10, 12 PM March 10, 12 PM
Session 7	Raster Data Analysis	Chapter 12	Assignment 6	March 17, 12 PM
Session 8	Terrain Mapping and Analysis/Viewsheds and Watersheds	Chapter 13 & 14	Assignment 7 Quiz 4	March 31, 12 PM March 31, 12 PM
Second Exam	Sessions 5 -8			April 7, 12 PM
Session 9	Spatial Interpolation	Chapter 15	Discussion	April 11, 12 PM
Session 10	Geocoding and Dynamic Segmentation/Path Analysis and Network Applications	Chapter 16 & 17	Assignment 8 Quiz 5	April 21, 12 PM April 21, 12 PM
Session 11	GIS Models and Modeling	Chapter 18	Assignment 9	April 28, 12 PM
Final Project	Final Project		Final Project	May 5, 12 PM
Final Exam	Third Exam		Final Exam	May 11, 12 PM

Required Software

Please be sure you have installed the following software and browser plug-ins:

ArcGIS 10.0

Flash Player 10.0+

Acrobat Reader

If you encounter technical problems, please contact the UConn Digital Resource Center (DRC), 860-486-1187.

Updated: 01/17/2013