

Syllabus – Fall 2017

Course and Instructor Information

Course Title: Fundamentals of GIS [GEOG 5500]

Credits: 3 credits

Format: online

Prerequisites: none

Instructor: Dr. Amy C Burnicki

Email: amy.burnicki@uconn.edu

Office Hours / Location: 326 Castleman Building; by email appointment

Course Materials

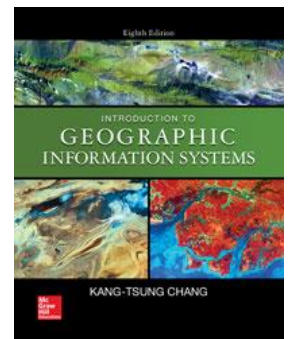
Required course materials should be obtained before the first day of class

The text book is available through a local (e.g., [UConn Bookstore](#)) or online bookstore. For more information, see Textbooks and Materials in the [Enrolled Students](#) page on the UConn eCampus website.

Required text: Introduction to Geographic Information Systems, 8th Ed.
Author: Kang-tsung Chang
Publisher: McGraw-Hill

This course was developed by Dr. Chuanrong Zhang, Professor in the Geography Department.

All videos, images, charts, graphs not created by the instructor are used with the permission of the publisher or are in the public domain and cited under Fair Use practices.



Course Description

Fundamentals of GIS 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 focuses on teaching students the principles and operation of GIS software through computer-based exercises and a semester project. Exercises train students in solving spatial problem utilizing GIS mapping and statistical methods. The project will give students hands-on experience using computerized technologies for geographic analysis. As such, 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 understanding GIS concepts, independent of the software that is used to address them.

Course 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
- Proficiently utilize GIS software
- Understand GIS concepts

Course Outline

Your course will be conducted online in a series of sessions. It is assumed that it may take up to one week to complete the session by submitting the assignment in the end. Every session will include an open discussion of material covered, assignments or questions about the course.

Course Evaluation and Grading

Your grade will be based on your performance on nine exercise assignments, three exams, five quizzes, three discussions and a course project.

Exercise assignments: All assignments are due at the specified time. Late assignments will be accepted with penalty; see Due Dates and Late Policy. (40%)

Exams: The exam format may include multiple choice, true / false and short answer questions. Exams cover materials presented in the lectures, assigned readings, 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; see Due Dates and Late Policy. (40%)

Quizzes: There will be five quizzes, which follow a short answer format. Each quiz is graded on a 10 point scale; i.e., one short answer question worth 10 points total. (5%)

Discussions: There are three discussions covering basic concepts presented throughout the semester. All discussions require essay format answers. (5%)

Course project: Students will propose and create a GIS application in their area of interest. It will offer an opportunity to refine and apply skills learned throughout the course. Students must consult with their instructor prior to executing the project. (10%)

Grade breakdown:

Grade Item	Total Points	Grade Percentage
Course project	200 points	15%
Exercises (9)	400 points	40%
Quizzes (5)	50 points	10%
Discussions (3)	30 points	5%
Exam 1	100 points	10%
Exam 2	100 points	10%
Exam 3	100 points	10%

Individual exercise point totals:

Exercise 1	50pts
Exercise 2	50pts
Exercise 3	50pts
Exercise 4	25pts
Exercise 5	40pts

Exercise 6	30pts
Exercise 7	60pts
Exercise 8	45pts
Exercise 9	50pts

Grading Scale:

<i>Graduate</i>			<i>Undergraduate</i>		
Grade	Letter Grade	GPA	Grade	Letter Grade	GPA
97-100	A+	4.3			
93-96	A	4.0	93-100	A	4.0
90-92	A-	3.7	90-92	A-	3.7
87-89	B+	3.3	87-89	B+	3.3
83-86	B	3.0	83-86	B	3.0
80-82	B-	2.7	80-82	B-	2.7
77-79	C+	2.3	77-79	C+	2.3
73-76	C	2.0	73-76	C	2.0
70-72	C-	1.7	70-72	C-	1.7
67-69	D+	1.3	67-69	D+	1.3
63-66	D	1.0	63-66	D	1.0
60-62	D-	0.7	60-62	D-	0.7
<60	F	0.0	<60	F	0.0

Due dates and Late policy:

All course due dates are identified in the Course Schedule. Deadlines are based on Eastern Standard Time; if you are in a different time zone, please adjust your submittal times accordingly.

Assignments handed in late will be penalized by a 10% deduction per day up to three days past the due date, unless you have contacted the instructor and made special arrangements. No assignments will be accepted for credit after three days past the due date. Exceptions to this rule require instructor approval and must be made prior to the assignment's due date.

Make-up exams are only scheduled only in the event of personal illness or extraordinary circumstances. If you know you will miss an exam due to a scheduled conflict (e.g., conference, University event), you must contact the instructor no later than two weeks prior to the scheduled exam date to schedule a make-up exam.

Feedback and Grades:

I will make every effort to provide feedback and grades in a timely manner. All assignments will be graded within one week of their due date. Exams will be graded within 3-4 days of completion. Use the MyGrades tool in HuskyCT to keep track of your performance in the course.

Course Calendar

	Dates	Topic	Reading	Activity	Due Date and Time
Session 1	Aug 28 – Sept 3	Introduction Coordinate systems	Chapters 1 & 2		
Session 2	Sept 5 – Sept 10	Vector data models Raster data models	Chapters 3 & 4	Assignment 1 Discussion 1 Quiz 1	Sept 10, noon
Session 3	Sept 11 – Sept 17	GIS data acquisition Geometric transformation	Chapters 5 & 6	Assignment 2	Sept 17, noon
Session 4	Sept 18 – Sept 24	Spatial data accuracy and quality Attribute data management	Chapters 7 & 8	Assignment 3 Quiz 2	Sept 24, noon
Exam 1	Sept 25 – Oct 1	Sessions 1 – 4		Online (HuskyCT)	Oct 1, noon
Session 5	Oct 2 – Oct 8	Data display and cartography	Chapter 9	Assignment 4	Oct 8, noon
Session 6	Oct 9 – Oct 15	Data exploration Vector data analysis	Chapters 10 & 11	Assignment 5 Quiz 3	Oct 15, noon
Session 7	Oct 16 – Oct 22	Raster data analysis	Chapter 12	Assignment 6	Oct 22, noon
Session 8	Oct 23 – Oct 29	Terrain mapping Viewshed and watershed analysis	Chapters 13 & 14	Assignment 7 Quiz 4	Oct 29, noon
Exam 2	Oct 30 – Nov 5	Sessions 5 – 8		Online (HuskyCT)	Nov 5, noon
Session 9	Nov 6 – Nov 12	Spatial interpolation	Chapter 15	Discussion 3	Nov 12, noon
Session 10	Nov 13 – Nov 19	Geocoding Path analysis	Chapters 16 & 17	Assignment 8 Quiz 5	Nov 19, noon
Session 11	Nov 27 – Dec 3	GIS models and modeling	Chapter 18	Assignment 9	Dec 3, noon
Project	Dec 4 – Dec 10				Dec 10, noon
Exam 3	Dec 11 – Dec 17	Sessions 9 – 11		Online (HuskyCT)	Dec 17, noon

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. This section provides a brief overview of these important standards, policies and resources.

Student Code:

You are responsible for acting in accordance with the [University of Connecticut's Student Code](#). Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on Academic Integrity:

- [Academic Integrity in Undergraduate Education and Research](#)
- [Academic Integrity in Graduate Education and Research](#)

Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- [Plagiarism: How to Recognize it and How to Avoid It](#)
- [University of Connecticut Libraries' Student Instruction](#) (includes research, citing and writing resources)

Copyright:

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

Netiquette and Communication:

At all times, course communication with fellow students and the instructor are to be professional and courteous. It is expected that you proofread all your written communication, including discussion posts, assignment submissions, and mail messages. If you are new to online learning or need a netiquette refresher, please look at this guide titled, [The Core Rules of Netiquette](#).

Adding or Dropping a Course:

If you should decide to add or drop a course, there are official procedures to follow:

- Matriculated students should add or drop a course through the [Student Administration System](#).
- Non-degree students should refer to [Non-Degree Add/Drop Information](#) located on the registrar's website.

You must officially drop a course to avoid receiving an "F" on your permanent transcript. Simply discontinuing class or informing the instructor you want to drop does not constitute an official drop of the course. For more information, refer to the:

- [Undergraduate Catalog](#)
- [Graduate Catalog](#)

Academic Calendar:

There are important dates and deadlines for each semester and session classes are offered:

- [Fall and Spring Semester](#)
- [Summer Session](#)
- [Winter Session](#)

Academic Support Resources:

[Technology and Academic Help](#) provides a guide to technical and academic assistance.

Students with Disabilities:

Students needing special accommodations should work with the [University's Center for Students with Disabilities](#) (CSD). You may contact CSD by calling (860) 486-2020 or by emailing csd@uconn.edu. If your request for accommodation is approved, CSD will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each semester.)

Blackboard measures and evaluates accessibility using two sets of standards: WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (retrieved March 24, 2013 from Blackboard's website)

Policy against Discrimination, Harassment and Inappropriate Romantic Relationships:

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate romantic relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate romantic relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Refer to the [Policy against Discrimination, Harassment and Inappropriate Romantic Relationships](#) for more information.

Sexual Assault Reporting Policy:

To protect the campus community, all non-confidential University employees (including faculty) are required to report assaults they witness or are told about to the [Office of Diversity & Equity](#) under the [Sexual Assault Response Policy](#). The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help. Refer to the [Sexual Assault Reporting Policy](#) for more information.

Software Requirements and Technical Help

The technical requirements for this course include:

- ArcGIS
- Flash Player
- word processing software
- [Adobe Acrobat Reader](#)
- internet access

This course is completely facilitated online using the learning management platform [HuskyCT](#). If you have difficulty accessing HuskyCT, students have access to the in person/live person

support options available during regular business hours through the [Help Center](#). Students also have [24x7 Course Support](#) including access to live chat, phone, and support documents.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments
- Save files in commonly used word processing program formats
- Copy and paste text, graphics or hyperlinks
- Use presentation software to create and share information
- Work within two or more browser windows simultaneously
- Open and access PDF files

University students are expected to demonstrate competency in Computer Technology. Explore the [Computer Technology Competencies](#) page for more information.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the [Office of Institutional Research and Effectiveness](#) (OIRE). Additional informal formative surveys may also be administered within the course as an optional evaluation tool.