

# Syllabus

## GEOG 5510 – Application Issues of GIS – Fall 2013

### Course Information and Requirements

**Course Title:** GEOG 5510 – Application Issues of GIS

**Credits:** 3

**Prerequisites:** Basic computer literacy and basic theoretical understanding of GIS (vector and raster).

**Course Designer:** Richard Mrozinski

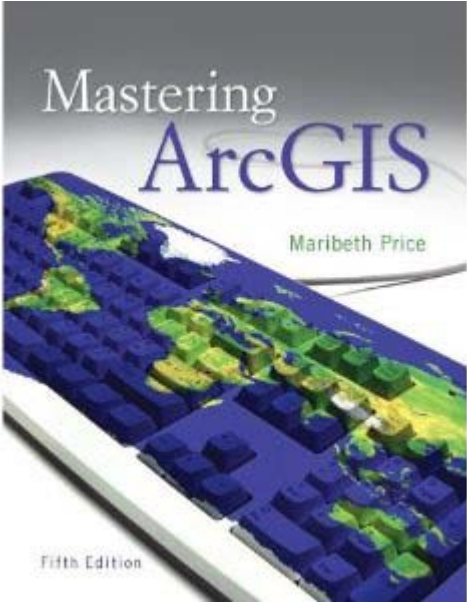
**Instructor:** Natalia Vorotyntseva

**E-mail:** [Natalia.Vorotyntseva@uconn.edu](mailto:Natalia.Vorotyntseva@uconn.edu) (After the first day of classes, students registered in the course should use HuskyCT's Messages tool to send correspondence to the instructor.)

**Office:** 423 B, Philip E. Austin Building (formerly CLAS)

**Office Hours:** By appointment via [Skype](#), natalia.vorotyntseva1.

### Required Text:

	<p><b><i>Mastering ArcGIS</i></b> <b><i>5<sup>th</sup> Edition</i></b> <b>by Maribeth Price</b> <b>Publisher: Mcraw-Hill</b> <b>Higher Education</b> <b>ISBN: 0077293320</b></p> <p>This text is written to be used with ArcGIS10.0, therefore it is very important to use the 5<sup>th</sup> edition of <i>Mastering ArcGIS</i>. There are updates and changes to the material, especially exercises, in the text to correspond with the latest version of the software.</p>
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**Additional Requirements:** none

The developer of this course is Richard Mrozinski, Instructor, Geography Department at the University of Connecticut.

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

## Course Description

Geography 5510 is a course covering the application of geographic information systems (GIS). Emphasis will be placed on understanding GIS through actual use of software, mainly ArcGIS. Students will study principal functional components of ArcGIS including: general GIS design and management theory, spatial and attribute data automation, database design, database management, spatial analysis, cartographic production, and application design and implementation. The course includes a final project component, where students investigate a GIS application in depth.

**Prerequisites:** Students are expected to come to class with basic computer literacy along with a basic theoretical understand of GIS (vector and raster). There are many textbooks covering introductory GIS topics, and a brief review can never hurt if you do not feel comfortable with this requirement.

## Course Goals and Objectives

Upon successful completion of this course, you will be able to:

- Define GIS.
- Illustrate GIS concepts:
  - Representation of the world as a map
  - Usage of the coordinate systems.
  - Modeling feature behaviors.
  - Map scale.
  - Analyzing data quality issues.
- Demonstrate the use of ArcGIS:
  - Store data in ArcGIS.
  - Use ArcCatalog.
  - Use ArcMap.
  - Create layers and layer properties.

You will study the principle functional components of GIS including:

- General GIS design and management theory.
- Spatial and attribute data creation.
- Database design.
- Database management.
- Spatial analysis.
- Cartographic production.
- Application design and implementation.

## Course Requirements: Activities, Grading and Exams

### Activities

Each assignment will be introducing new concepts and commands, building on the GIS principles covered in previous exercises. Therefore, it is important to finish the exercises in the order they are assigned. It is also a good idea to read the lab in advance, and review/note new procedures or activities.

**Assignments are due at 11:59 pm** of the specified due day. Late labs are penalized 10% per day, and labs will not be accepted if they are more than one week late. If you know you will be having a conflict for a significant event or emergency (wedding, childbirth, car accident), please let me know beforehand (if possible) and we can usually arrange something.

All submissions are via HuskyCT. NO email submissions. All work should be completed by the due date and work should be combined into ONE PDF document. Incorrect homework submissions will be returned.

### Project Assignment

The course includes a final project component where students investigate a GIS application in depth. The project is intended to provide a deeper understanding of a GIS application through experience. The project should investigate a particular research problem and use ArcGIS.. The project should contain spatial data creation (digitize, geocode, etc) and it must involve some type of spatial analysis.

Please note the following dates:

**March 31<sup>st</sup>** • Submit project proposal. Review and use proposal format in text

**May 5<sup>th</sup>** • Submit your final paper

### Final Exam

There will be a final exam in this course. It will consist of essay questions that will be based on the concepts reviewed during the semester and the material presented in the textbook.

## Course Grading

The exercises will be graded in a one-week period. The exam is worth 100 points. Course grading is on a straight scale. The grading breakdown and grading scale are as follows:

Grade Breakdown		
<b>Lab Assignments</b>	125 points	33.30%
<b>Class Project</b>	110 points	33.30%
<b>Final Exam</b>	100 points	33.30%

Activity	Total points
Assignment 1	10
Assignment 2	10
Assignment 3	10
Assignment 4	10
Assignment 5	10
Assignment 6	10
Assignment 7	10
Assignment 8	10
Assignment 9	10
Assignment 10	10
Assignment 11	10
Assignment 12	15
Project Proposal	10
Final Project	100
Final Exam	100

Grade Scale	
A	93 - 100
A-	90 - 92.99
B+	87 - 89.99
B	83 - 86.99
B-	80 - 82.99
C+	77 - 79.99
C	73 - 76.99
C-	70 - 72.99
D+	67 - 69.99
D	63 - 66.99
D-	60 - 62.99

## Course Outline

<b>Dates</b>	<b>Topic</b>	<b>Chapter</b>	<b>Activity</b>	<b>Due Date</b>	<b>Due Time</b>
<b>Session 1</b> (Aug 26 – Sep 1)	Introduction GIS Data	Introduction Chapter 1	Assignment 1	Sep 1	11.59 am
<b>Session 2</b> (Sep 2 – Sep 8)	Mapping GIS Data	Chapter 2	Assignment 2	Sep 8	11.59 am
<b>Session 3</b> (Sep 9 – Sep 15)	Presenting GIS Data	Chapter 3	Assignment 3	Sep 15	11.59 am
<b>Session 4</b> (Sep 16 – Sep 22)	Attribute Data	Chapter 4	Assignment 4	Sep 22	11.59 am
<b>Session 5</b> (Sep 23 – Sep 29)	Queries	Chapter 5	Assignment 5	Sep 29	11.59 am
<b>Session 6</b> (Sep 30 – Oct 6)	Spatial Joins	Chapter 6	Assignment 6	Oct 6	11.59 am
<b>Session 7</b> (Oct 7 – Oct 13)	Map Overlay and Geoprocessing	Chapter 7	Assignment 7	Oct 13	11.59 am
<b>Session 8</b> (Oct 14 – Oct 20)	Raster Analysis	Chapter 8	Assignment 8	Oct 20	11.59 am
<b>Session 9</b> (Oct 21 – Oct 27)	Network Analysis	Chapter 9	Assignment 9 Project Proposal	Oct 27 Oct 27	11.59 am 11.59 am
<b>Session 10</b> (Oct 28 – Nov 3)	Coordinate Systems	Chapter 10	Assignment 10	Nov 3	11.59 am
<b>Session 11</b> (Nov 4 – Nov 10)	Geocoding	Chapter 11	Assignment 11	Nov 10	11.59 am
<b>Session 12</b> (Nov 11 – Nov 24)	Creating and editing data	Chapter 12 & 13	Assignment 12	Nov 24	11.59 am
<b>Project</b> (Dec 2 – Dec 8)	Final Project		Final Project	Dec 8	11.59 am
<b>Exam</b> (Dec 9 – Dec 15)	Final Exam		Final Exam	Dec 15	11.59 am

## Required Software

- ArcGIS 10.0 (This software is free to enrolled students. Instructor will email instructions on downloading software prior to the start of class.)
- Flash Player
- Acrobat Reader

## 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 to important standards, policies and resources.

### Student Code

You are responsible for acting in accordance with the [University of Connecticut's Student Code](http://www.community.uconn.edu/student_code.html), available at [http://www.community.uconn.edu/student\\_code.html](http://www.community.uconn.edu/student_code.html). 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, use the following resources:

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

### 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 proof read 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 [Peoplesoft](#).
- Non-degree students should refer to the Registrar's office [Non-Degree page](#) for more information.

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**

The University's [Academic Calendar](#) contains important semester dates.

## **Students with Disabilities**

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.) [csd@uconn.edu](mailto:csd@uconn.edu) (CSD). You may contact CSD by calling (860) 486-2020 or by emailing [Center for Students with Disabilities](#) Students needing special accommodations should work with the University's

## **Course Evaluation**

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](#).