
Geography 582
GIS: Urban Economic Applications
Winter, 2009
Department of Geography
University of Cincinnati

Class Time & Place: T, H 9:30 - 10:45 a.m. at 201 (Lecture) Braunstein Hall
at 415, 406 (Lab) Braunstein Hall

Instructor: Changjoo Kim, Ph. D.

- Office: 400B Braunstein Hall
- Phone: 513-556-3424 (office)
- e-mail: changjoo.kim@uc.edu
- Office Hours: 2:00 - 4:00 p.m. on Monday, 11:00 a.m. - 12:00 p.m. on Tuesday, 10:00 a.m. - 12:00 p.m. on Wednesday, and 2:00 - 4:00 p.m. on Thursday or by appointment

TA: Ninghua Wang

- Office: 416 Braunstein Hall
- Phone: 513-5563433 (office)
- e-mail: wangnu@email.uc.edu
- Office Hours: 8:30 a.m. - 9:30 a.m., 10:45 a.m. - 12:00 p.m. on Tuesday, Thursday or by appointment

Geography Department:

- Main Office & Mail Room: 401 Braunstein Hall
- Phone: 513-556-3421

Course Prerequisites:

Geog580 or permission.

Course Description & Goal:

Geography 582 is a 4-credit class that applies GIS theories and techniques to real-world problems. It is designed to provide a background in GIS-based spatial analysis and network analysis approaches and develop an understanding of the operational basis of modern GIS technology. This class is also based upon the pre-requisite class Geography 580 where main concepts and basic principles of geographic information systems and their use in spatial analysis and information management are introduced. The course includes a computer laboratory portion focusing on learning GIS software. Students will use GIS to learn the skills of spatial analysis through weekly lab exercises

and projects that address "real-world" urban-economic GIS application problems. The course is designed to give students an understanding of geographic information systems, their capabilities, uses, and limitations. Relevant applications for different discipline areas are demonstrated in the class. At the end of the class, you should achieve goals of the course as follows: [1] understand urban-economic issues in GIS, [2] manipulate urban-economic data with GIS software, and [3] implement GIS skills in real-world urban-economic application problems.

Class web page: Blackboard, [09W_15GEOG582001: \(09W\) GIS URBAN ECON APPL \(001\)](#)

- The class information is available at <http://blackboard.uc.edu>. If you have never used Blackboard before, you will need to activate your account to receive your username and password.
- Blackboard class link: [09W_15GEOG582001](#).

Textbook:

1. Maantay and Ziegler, 2006, GIS for the Urban Environment, ESRI Press, ISBN (1-58948-082-1) - Required
2. Ormsby et al., 2004, GETTING TO KNOW ArcGIS desktop (2nd Edition), ESRI Press, ISBN (1-58948-083-X) - Optional
3. Church and Murray, 2008, Business Site Selection, Location Analysis and GIS, Wiley, ISBN(9780470191064) – Optional
4. Greene and Pick, 2006, Exploring the urban community, Pearson Prentice Hall, ISBN (0-13-017576-5) - Optional

Course Requirements (Grading):

- Quizzes, Homework (5 at 2): 10% - There are **5** quizzes and homework throughout the semester. Each one will be based on the book reading and class lecture. If quizzes and homework are done less than the allocated, each will be proportionally allocated to the total point.
- Labs (5 at 8): 40% - There are **5** lab assignments. Lab assignment due is before the next class or specified date on lab sheets. There is 10% deduction penalty per day.
- Project Proposal (1 at 10): 10% - The individual project proposal is based on previous labs and lectures and should be applied to real world situation. The project evaluation includes oral presentation and paper.
 - The oral presentation must be prepared with MS PowerPoint.
 - The paper must include followings with 12 sized Tahoma font in double space.
 - 1) Introduction
 - a) Background
 - b) Problem statement
 - c) Goal
 - 2) Data & Study Area

- 3) Methodology
- 4) Expected Results
- 5) References
- Midterm Exam (1 at 20): 20% - The midterm exam is objective question formats, such as multiple choice, true/false, matching, fill-in-the-blank and short answer.
- Final Exam (1 at 20): 20% - The final exam is a comprehensive test which covers previous midterm exams. Format is much the same as the midterm exam.

Grading Scale[#]: http://www.uc.edu/registrar/grading_scale.html

- A = 93-100%: Excellent - Achievement that is outstanding relative to the level necessary to meet course requirements.
- A- = 90-92.99%
- B+ = 87-89.99%
- B = 83-86.99%: Good - Achievement that is significantly above the level necessary to meet course requirements.
- B- = 80-82.99%
- C+ = 77-79.99%
- C = 73-76.99%: Satisfactory - Achievement that is in keeping with the course requirements in every respect.
- C- = 70-72.99%
- D+ = 67-69.99%
- D = 63-66.99%: Poor - Achievement that is worthy of credit even though it fails to meet fully the course requirements.
- D- = 60-62.99%
- F = 0-59.99% or Failure for non-attendance: Fail - Working that was either completed but not worthy of credit, or incomplete.

[#] Undergraduate students will be graded differently using a different curve.

Graduating Senior: Graduating seniors should notify the instructor no later than the third week of class.

Make-up: No make-ups will be allowed without emergency reasons with written proof.

Final Exam: At the same classroom, 8:00-10:0 a.m., Tuesday, March 17th, 2009.

Comments:

- Cheating on exams, quizzes, or lab exercises will result in a zero.
- Students are expected to attend each class, and are responsible for their own notes.
- If you are having trouble in class, please come and see me.
- I truly believe that this course is two-way interactive class where we can ask and discuss each other.

Disability Statement:

Any student who feels he or she may need an accommodation based on the impact of a disability should contact me privately to discuss his or her specific needs. Every attempt will be made to accommodate students with documented disabilities. If you are a student with documented disability, please see me as early in the semester as possible to discuss necessary accommodations. Please also contact the Office of Disabilities Services (See also www.uc.edu/equalopp 556-5503).

Geography 582 Class Schedule[#]: Winter, 2009**Week 1**

Lecture1 T (1/6/09):	GIS Overview (Chapter 1, 2 Maantay and Ziegler)
HW1 T (1/6/09):	ArcGIS Structure
Lab1 H (1/8/09):	Suitability Analysis

Week 2

Lecture2 T (1/13/09):	US Census Data (Chapter 6 Maantay and Ziegler)
HW2 T (1/13/09):	Census Definitions
Lab1C H (1/15/09):	Lab Clinic

Week 3

Lecture3 T (1/20/09):	Spatial Data Analysis (Chapter 9 Maantay and Ziegler)
HW3 T (1/20/09):	Choropleth map
Lab2 H (1/22/09):	Data Mining: Census 2000

Week 4

Lecture T (1/27/09):	No Class due to Snow
Lab2C H (1/29/09):	Lab Clinic

Week 5

Lecture4 T (2/3/09):	Site Selection, & SDSS (Chapter 4, 5 Church and Murray)
Final Project T (2/3/09):	Final Project Proposal 1 st Round Due
Handout T (2/3/09):	Midterm Exam Study Guide Handout
Lab3 H (2/5/09):	Trade Area Analysis & Location-Allocation

Week 6

Exam T (2/10/09):	<u>Midterm Exam</u>
Final Project T (2/10/09):	Final Project Proposal 1 st Round Feedback
Lab3C H (2/12/09):	Lab Clinic

Week 7Lecture5 **T** (2/10/09):HW4 **T** (2/10/09):Lab4 **H** (2/19/09):

Location & Allocation (Chapter 11 Church and Murray)

Geodatabase

Population Change Visualization

Week 8Lecture6 **T** (2/24/09):HW5 **T** (2/17/09):Final Project **T** (2/24/09):Lab4C **H** (2/26/09):

3-D Visualization and Analysis (Chapter 5 Maantay and Ziegler)

3-D Visualization

Final Project Proposal 2nd Round Due

Lab Clinic

Week 9Lecture7 **T** (3/3/09):Final Project **T** (3/3/09):Lab5 **H** (3/5/09):

GIS for Marketing & Health Care

Final Project Proposal 2nd Round Feedback

GIS for Marketing & Health Care

Week 10Lecture8 **T** (3/10/09):Handout **T** (3/10/09):Lab5C **H** (3/12/09):

Final Project Proposal Presentation

Final Exam Study Guide Handout

Lab Clinic & Final Project Proposal Presentation

Week 11Final* **T** (3/17/09):Final Project **T** (3/17/09):**Final Exam**

Final Project Proposal Due

Class contents can be changed according to the instructor during the semester.

* All assignments are due.