Geography 725 — Advanced Geographic Information Science: Geographic Modeling

Spring 2008

Class Place & Time: (R 2:00 pm-4:40 pm) at Bolton Hall (BOL) 487

Credit hours: 3

Instructor: Changshan Wu

- Office: BOL 482
- Phone: 229-4860 (office)
- e-mail: cswu@uwm.edu
- Office Hours: 11:00 am -12:00 pm on Tuesday, Thursday or by appointment

Geography Department:

- Main Office & Mail Room: BOL 410
- Phone: 229-4866

Course Description and Objectives

This course examines advanced geographical information models and their applications in geographical research such as urban studies, transportation planning, and natural resource management. In particular, this course focuses on several topics, including accessibility measurement and applications, spatial interaction models, location models, cellular automata models, and econometric models. A major purpose of this course is to teach students geographical models that can be integrated with their future research and real-world applications.

This course requires students to read assigned materials prior to class and fully participate in class discussion. Students are also encouraged to bring related journal articles or book chapters for class discussion. Two critical reviews and a final project are expected from each student. A presentation for each critical review is required. Moreover, a report and summary presentation for the final project is required. Grades will be based on participation, discussion, critical review presentations, and the final project report and summary presentation.

Textbook

There is no textbook for this course. Required readings can be downloaded through accessing the course site in Desire2Learn (D2L) at UWM.

Course website

Course contents can be accessed through Desire2Learn (D2L) at UWM.

Grading formula

1) Class activities: 30% (class attendance and discussion)

2) Two review papers and presentations: 40% (20% each)

3) Final project and presentation: 30%

In the final project, each student is required to apply geographic models in a specific area. Any GIS and modeling package or programming language is acceptable for project implementation. Geographic information can be acquired from the AGS library or from the instructor. A report and summary presentation describing project implementation is required. Students are welcome to discuss project topics with the instructor.

Grading Scale

- A = 90-100%, A- = 87-89.99%
- B+ = 83-86.99%, B = 80-82.99%, B- = 77-79.99%
- C+ = 73-76.99%, C = 70-72.99%, C- = 67-69.99%
- D+ = 63-66.99%, D = 60-62.99%
- F = 0-59.99%

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

Notices:

- Grades, once given, are final except in cases of clerical error
- Cheating on exams, map quizzes, or exercises will not be tolerated. Additional information about the policies and procedures can be found at http://www.uwm.edu/Dept/Acad_Aff/policy/uniformsyllabus.html and are posted in the Geography Department main office, BOL 410.
- Attendance is not required but strongly recommended.
- Students are expected to attend each class, and are responsible for their own notes.

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.

Geography 725 Tentative[#] Schedule Spring 2008

Week	Date	Content
1	Jan 24	Introduction
2	Jan 31	Accessibility measurement: Concept
3	Feb 7	Accessibility measurement: Applications
4	Feb 14	Spatial interaction models: Concept
5	Feb 21	Spatial interaction models: applications
6	Feb 28	Critical review presentation I
7	March 6	Location models: set covering problem
8	March 13	Location models: maximal covering and p-median problems
9		Spring Recess (no class)
10	March 27	Location models: anti covering and covering salesman problem
11	April 3	Cellular automata models
12	April 10	Critical review presentation II
13	April 17	Final project preparation (no class)
14	April 24	Spatial econometric models
15	May 1	Agent based models
16	May 8	Final project presentation (report due)

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