

Techniques in Geographic Information Systems

GEOG 2232

3 Credits

Fall 2007

H 6 – 8:30 pm

151 Deputy Hall (Super Lab)

<http://faculty.bemidjistate.edu/jueland/>

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Text

Introducing Geographic Information Systems by Michael Kennedy, Wiley Press; (2006)

More information and materials are available at the Courses D2L site and my personal website (see above)

This course introduces students into some of the more advanced theoretical ideas and techniques used in geographic information science. The class utilizes a great deal of hands on activities and discussion to better understand some of the current uses and trends within the field of geographic information science. Students will be evaluated on a series of short lab exercises and a final project. Although much of the material focuses on application of geospatial technology, the aim of this course is to move beyond “button pushing” and to develop a critical understanding of the practice of GIS. Although it takes several years to find your comfort zone in any discipline, it is hoped that by the end of this course you will feel comfortable and confident enough with the terminology and application of GIS so that you might be able to apply this practice to your particular areas interests.

Tentative Schedule

Week	Dates	Material	Readings
1	8/30	Introduction; Computer lab use; GIS basics review; ARCGIS 9 basics	Pg 1-30
2	9/6	Geodatabases and geo-information structures; Digital data (Project 1)	Pg 217-244; HO
3	9/13	Work on project 1	
4	9/20	Data acquisition; Geocoding (Project 2)	Pg 552-560; HO
5	9/27	Work on Project 2	
6	10/4	Network Analysis / Site Selection (Project 3)	Pg 562-577; HO
7	10/11	Work on Project 3	
8	10/18	3-D GIS; TINs; Basic Animation (Project 4)	Pg 530-551; HO
9	10/25	Work on Project 4	
10	11/1	Modeling in GIS (Project 5)	Pg 433-438; HO
11	11/8	Work on Project 5	
12	11/15	Web-based Mapping – (Project 6 in class)	HO
13	11/22	No Class Thanksgiving	
14	11/29	Work on Individual projects	
15	12/6	Final Exam – Individual Presentations (Paper due 12/13)	

HO = Handout; Pg = Reading from Kennedy

Grading Schedule

A: 90%-100%

B:80%-89.9%

C:70%-79.9%

D:60%-69.9%

F:0%-59.9%

Grading

You will complete 6 projects during the semester. Projects will be turned-in in digital format to the D2L site. Each project will consist of a single pdf document that contains the completed material. A final exam will also be given, in which you will be asked to use the skills learned in the course to complete a project during the scheduled final exam period. It is a good practice to save all of your graded and returned assignments until you receive your grade for the course. The weighting for the projects and exam will be as follows:

Project 1: Geodatabases 10%
 Project 2: Geocoding 10%
 Project 3: Network Analysis 15%
 Project 4: 3-D / animation 15%
 Project 5: GIS Modeling 15%
 Project 6: Web-mapping 5%
 Final Project: 30%

Project Due Dates:

Project 1- Geodatabases	9/20
Project 2- Geocoding	10/4
Project 3- Network Analysis	10/18
Project 4- 3-D / animation	11/1
Project 5- GIS Modeling	11/15
Project 6- Web-mapping	11/16
Final Project:	12/13 Paper (12/6 Presentation)

Individual Project:

The individual project will focus on applying GIS to a topic of your choosing. I would highly recommend for graduate students that this be part of your thesis or dissertation project. It will give you a chance to develop some of your data sources and analysis in a classroom environment and get some of the preliminary writing out of the way. For undergraduates, you may want to use this opportunity to supplement a project you are working on in another class by including a GIS component. Even if you are doing a project that is more qualitative in nature, you may be able to use GIS to help build your argument. A handout of the exact format of the project will be made available later in the semester. In either case, the project should focus on the data collection, methods used, and explaining your analysis of the problem.

Individual Project Deadlines and Information:

Item	Deliverable	Due Date	% of Project
Project Idea	1 Page description of what you want to do and why	Oct 4	5
Project Outline & Flow Chart	Standard outline that maps the flow and expectations for your project.	Nov 1	5
Presentation	5 minute presentation of your project and findings	Dec 6	25
Final Report	10 pages text double spaced exclusive of maps	Dec 13	65

Course Homepage and Email Contact

For this course all content, including lectures and handouts can be found on the D2L site created for this course. You can log onto your D2L account and find the course and all the material will be accessible to you. ***You must also use only your BSU email accounts to correspond for this course. It is also your responsibility to check the D2L site frequently as I will post all important class changes and messages at this location.*** All changes to the course schedule made in class are the responsibility of the student.

Delivery of Assignments and Late Assignments

All assignments will be turned in digitally to the D2L site preferably as PDF documents. We will discuss this in greater detail when it is time to turn in the first assignment. Late Assignments will be reduced by 20% of the assignments total grade for 5 days. If the assignment is not turned in by Friday of the week it is due it will become a zero.

Attendance

Since this course relies heavily on in-class demonstrations and project work, attendance is critical. You get one unexcused absence that will not affect grading. Each additional absence decreases your final grade by 3 percentage points. Roll will be taken in class based on a random number generated selection of dates. The following and only the following absences are eligible to be excused and properly documented: religious holidays, as specified in BSU policy; absences due to representing BSU at official functions, verified emergencies and/or illness. While one is not penalized per se for excused absences, s/he is nevertheless responsible for all content missed, including any assignments, knowledge, or skills covered or assigned in the missed class(es). If you do miss class, you should make every effort to contact me before the next class period, so that you can catch up on the missed material. No “extra” credit is available, and **all projects and the final exam must be completed to pass the course**. I will post all grades and additional handouts on D2L so make sure to check the site regularly.

Academic Honesty

Academic dishonesty will not be tolerated. Although it is expected that students will help each other while working on the projects, what you turn in should reflect your knowledge, competence, and acquired skills. *Anyone who turns in someone else's work as his/her own, copies internet materials, or plagiarizes will receive a failing grade for the course, and may be reported to the Director of University Judiciaries for further action.*

Disabilities

If you have a disability and need assistance for some of the work in the course please inform me at the beginning of the semester and we can discuss appropriate accommodations.

Computer Lab Use

Hagg-Sauer 246 is available for your use in the computer based assignments for this course. You can use the lab whenever it is open and there is not a scheduled course going on in the facility. No food or drinks are allowed and you are restricted to using this lab for only GIS and mapping activities. No word processing or paper writing. Additionally, each of the Teaching Assistants will hold office hours in this lab to provide help to students who need it. Their schedules will be posted on the D2L site during the first week of class.