

ADVANCED GEOGRAPHIC INFORMATION SYSTEMS – SPRING 2008

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Office Hours: Tu, Th 2-3 pm

PURPOSE --

Geographical data is increasingly important in understanding our society and our environment. This course will focus on teaching students the principles and operation of GIS software through computer-based exercises and projects.

PREREQUISITES --

It is expected that students will have completed their Natural Science/Mathematics and Social Science College Area Requirements and have successfully completed EVSC 362- GIS Methods or equivalent. Additional computing experience, especially with geographical information systems will be desirable.

COURSE REQUIREMENTS AND GRADING --

Grading will be based on:

- Presentation on a GIS Technique (15%)
- Design and creation of specialized map (5%)
- Midterm Exam: 15%
- Individual Interactive Online Web Pages (10%)
- Group (EVSC468)/Individual (EVSC 796) GIS Project (25%)
- Final Exam (20%)
- Participation (%10)

This course is taught at both the undergraduate and graduate levels. The principal grading difference is that exams are different for graduate and undergraduate students, and graduate students will be expected to do an individual project, rather than a group project.

TEXTBOOK

Concepts and Techniques of Geographic Information Systems. 2nd Edition. C.P. Lo and Albert K. Yeung. Pearson Prentice Hall, Upper Saddle River, New Jersey, USA. 2007.

HONOR CODE , PASSWORDS, IN-CLASS COMMUNICATION --

Because much can be learned from each other and group practice, students should seek understanding from any relevant source. Instructors will provide advice on how to proceed with practice and may provide similar advice on project preparation.

The Honor Code will cover the final preparation of each individual or group exercise. Although students may work together to learn the procedures, each student's or student group's project must be substantially different from any other student. All sources used must be documented.

Passwords providing access to servers, software and other components of the University's computing system are for the exclusive use of students in this course. Providing passwords to others and misuse of computing privileges will be grounds for immediate dismissal from this course.

Students should refrain from the use of electronic mail, pagers and cellular phones during class lectures and discussions. Cellular phones and pagers should be turned off to avoid disruptions.

Activities Schedule

Week	Lectures/Activities	Readings
Jan. 17	Introduction - Student & Instructor Goals for Course	
Jan. 22 & 24	Review of Software* /Projections & Datums*	Chap.1: Intro. to GIS Chap. 2.3-2.5: Coordinates and Projections
Jan. 29 & 31	Elements of Map Design* / Work on Map Design Exercise	Chap. 2.1-2.2: Intro. to Mapping Chap. 7.5: Principles of Cartographic Design
Feb. 5 & 7	GIS Data Structures* / Map Design Presentations & Feedback	Chap. 3.1-3.2, 3.4-3.5, 3.7-3.8: GIS Data Structures
Feb. 12 & 14	Spatial analysis using Raster data*/ GIS Modeling *	Chap. 6.4-6.8: Geoprocessing Chap. 10.8-10.10: GIS Modeling
Feb. 19 & 21	Revised Map Designs Presentations / Online GIS using KML /Identify Project	Chap. 12.4: Internet and GIS
Feb. 26 & 28	GIS Programming*/ Mid-Term Exam	
Spring Break		
Mar. 11 & 13	Online GIS using Mapserver*	Mapserver Tutorial (online)
Mar. 18 & 20	Special Topics*	Readings assigned by presenters
Mar. 25 & 27	Special Topics*	Readings assigned by presenters
Apr. 1 & 3	GPS* / Individual On-Line GIS Presentations	
Apr. 8 & 10	Library GEOSTAT resources* Data Modeling*	Appendix A: Internet Resources for GIS Chap. 11.5: Geodatabase Modeling
Apr. 15 & 17	Group/Individual Project Presentations	
Apr. 22 & 24	Group/Individual Project Presentations	
April 29	Wrapup	

Items marked with a * will present material to be included in examinations.