

Geography 4427
GIS Design & Implementation
Spring 2011

Instructor: Dr. Yongmei Lu

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Office Hours:

M & W 11:00 a.m. – 12:00 p.m.

Lab Instructor: Matthew Connolly

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Office Hours:

M & W 1:30pm – 2:30pm

Lecture:

M & W 10:00 p.m. – 10:50 p.m.

Room: ELA 315

Lab Session:

M & W 11:00 a.m. – 12:50 p.m.

Room: ELA 120

Course Description

This course presents students with the opportunity to work as a team on a GIS project. Projects will be designed and conducted by the class. Students will develop and demonstrate competence in using GIS techniques in a substantive application.

Prerequisite: GEO 4426

Learning Outcomes

Knowledge outcomes

- Understand and appreciate the legal issues involved in GIS applications
- Understand the ethical issues concerning GIS projects

Skills outcomes

- Have the experience of working as a team member on an actual GIS project
- Be able to design a GIS project
- Develop and demonstrate competence in using GIS techniques in a substantive application

Required Textbooks

There are no required texts for this course. Readings will be assigned during the semester and will be available in the university library.

The Laboratory: Field work and applied GIS

The laboratory portion of this course is designed to acquaint students with real-time field experience and application of GIS to research problems. The class will be divided into teams, and each team will develop a GIS for a specific project. Projects will involve team work, and will focus on development of a comprehensive proposal, data collection and subsequent GIS analyses. Students will be evaluated based on a proposal and its presentation, the analytical product and final presentation. The project is intended to demonstrate your ability to conduct work in GIS. While guidance will be available, it is important that you develop your own problem solving skills and that you learn to work together as a team. Projects will be presented to the class during the first week of classes.

Evaluation

<u>Task</u>	<u>Percent Value</u>	<u>Points</u>
Project Proposal	15%	150
Proposal Presentation	10%	100
Progress Report	10%	100
Final Deliverables and Completed Project	25%	250
<i>Project Report</i>	<i>15%</i>	<i>150</i>
<i>CD</i>	<i>5%</i>	<i>50</i>
<i>Poster</i>	<i>5%</i>	<i>50</i>
Project Final Presentation	10%	100
Individual Group Participation (journal)	10%	100
Individual Contribution (through peer evaluation)	20%	200
<u>Total Points</u>		1000

The grades will be determined based on the following rules:

A	≥ 90%	900 - 1000
B	≥ 80% & < 90%	800 - 899
C	≥ 70% and < 80%	700 - 799
D	≥ 60% and < 70%	600 - 699
F	< 60%	< 600

Proposals and Presentations

- The proposal is an integral part of a team project and should be imaginatively and convincingly presented. The entire team must be involved in the conception and implementation of the proposal and its description to the class. Every team member must contribute to the physical presentation of the proposal. Each student will be graded individually for the presentation. **A written report of about 10 pages is required in addition to the presentation.**
- The proposal should detail the proposed project, including its scope and objectives; what software will be used; what data will be used and its sources; what processing, programming, and analysis will be done; and what the final deliverables will be. ***It is***

particularly important to ensure that the data required for the project be available in an appropriate form within the time constraints.

Progress Report

- The progress report is necessary for several purposes: to communicate with the client about the progress of the project, to review within the group the progress of the project, and to revise / amend the proposal if necessary. The entire team must be involved in reviewing the progress and compiling the progress report. Teams may delegate members to do the physical presentations **but every team member** is expected to be actively involved in the process of presentation and discussion of the report.
- A written report of 3-5 pages must be turned in following the presentation.
- Individual grade will be given for the progress report presentation and classroom discussion.

Project Report

- The final project report is a **professional** document. It should be both readable and technically comprehensive as well as reflect high graphic design standards. The report should convey the project background, methodology and result in a lucid and concise manner.
- Further detailed information on the project proposal and project report will be provided during the semester.

Journal

- In order for the project to succeed, all team members must work together as a team and must work **diligently** throughout the semester. A journal will be used to record your group participation.
- All students are required to keep a journal detailing **individual contributions** to the team's project. Entries need to be made whenever an individual works and contributes to the project. *Details about the expectation for the numbers of hours contributed to the project will be explained in class.*
- The journal is worth 100 points (or 10%) of your final grade for this course.
- On the last day of class, all journals need to be turned in to your project managers who will read and sign each journal. On **the due date of the final deliverables** all journals must be turned in to the instructor.

Individual Contribution

- This category is graded based on evaluation by team members.

- Each team member is going to be evaluated by all other team members in the same group towards the end of the semester. The evaluation is about individual's contribution to the success of the project; it will be based on assessment from aspects such as "overall contribution to the group project", "completion of assigned tasks", and "team collaboration".

Classroom Policies

- Attendance is required for **both** lecture and lab. There will be a **10 points penalty** for each absence and **5 points penalty** for each late class.
- No food is allowed in classroom or lab.
- Reading newspaper, magazines, or any other materials that are not recommended as class reading materials is not allowed.
- Late work will not be accepted unless prior arrangements have been made. A **10% penalty** will be granted for each day the work being late.
- All work must be proofread for spelling and good grammar. All work must be original. **Plagiarizing or cheating in any form will be reported and a failing mark will be assigned.**

Important Dates

Wed., 19 Jan.	Introduction of the course (No Lab)
Mon., 24 Jan	Introduction of the projects; Receiving RFP; Formation of teams
Wed. 26 Jan.	Discussion with client on RFP (<i>1st client visit</i>) (<i>continue into lab time</i>) Designation on Team Managers
Mon., 21 Feb.	Proposal due, and proposal presentation rehearsal
Wed. 23 Feb.	Proposal presentations to clients (<i>2nd client visit</i>) (<i>continue into lab time</i>)
Wed., 30 Mar.	Progress report due and presentation (<i>3rd client visit</i>) (<i>continue into lab time</i>)
Mon., 2 May	Final presentation rehearsal (last day of class)
Wed. 4 May	All Final Deliverables, personal journals, and peer evaluation are due to the instructor by 4:00pm
Fri., 6 May	FINAL EXAM PERIOD 11:00am-1:30pm. Project presentations (<i>4th client visit</i>)

(<http://www.registrar.txstate.edu/persistent-links/final-exam-schedule>)

Brief Course Outline

- Introduction to Class and Projects

- GIS project Design
- Needs Assessment
- Literature Review
- Project Budget
- Cost-benefit Analysis
- Ethical concerns
- The Law and GIS
- Data Integration and Analysis
- Primary Data and Secondary Data
- Metadata
- Accuracy and Precision of GIS Data
- Techniques of Presentation
- Proposal and Proposal Writing
- Progress Report and Writing
- Final Report and Writing

******IMPORTANT CLASS POLICIES******

- **CLASS WILL BEGIN PROMPTLY AT THE SCHEDULED TIME AND STUDENTS ARE EXPECTED TO BE ON TIME.** If unavoidable circumstances make it necessary for you to come to class late please enter the classroom quietly and avoid disturbing others.
- **ATTENDANCE POLICY** Attendance is required at all lectures and labs. Failure to attend will severely affect your ability to successfully complete the course requirements. Therefore, each unexcused absence will result in 10 points loss of the final grade. Students are responsible for all material (including announcements and field work assignments) presented in class.
- **DURING CLASS PRESENTATIONS STUDENTS ARE EXPECTED TO BE ATTENTIVE.** Talking to other people in the class or on the phone, passing notes, reading newspapers and magazines, listening to music, sleeping, working on other projects, or any other activities that disturb either the instructor or other students will not be permitted. Cell phones and beepers are to be turned off during class.
- **STUDENTS HAVING SPECIAL NEEDS/DISABILITIES:** Students with special needs (as documented by the Office of Disability Services) that will require compensatory arrangements must contact the instructor no later than the fourth class period to discuss specific arrangements and logistics. Students who have not already done so will be required to contact the Office of Student Disability Services located at LBJ5-5.1 (245.3451). ***Texas State University- San Marcos is dedicated to providing these students with necessary academic adjustments and auxiliary aids to facilitate their participation and performance in the classroom.*** (<http://www.txstate.edu/effective/upps/upps-07-11-01.html>)
- **TEXAS STATE UNIVERSITY HONOR CODE** Learning and teaching take place best in an atmosphere of intellectual fair-minded openness. All members of the academic community are responsible for supporting freedom and openness through rigorous personal standards of honesty and fairness. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific sanctions for academic dishonest are outlined in ***Texas State University- San Marcos honor code.*** (<http://www.txstate.edu/effective/upps/upps-07-10-01.html>)
- **LEARNING OUTCOMES:** The Department of Geography's Student Learning Outcomes for all departmental programs may be reviewed at <http://gato-docs.its.txstate.edu/departement-of-geography/Geography-Learning-Outcomes/Geography%20Learning%20Outcomes.pdf>