

PLAN 5357: INTERMEDIATE GIS

Instructor: Dr. Jianling Li
Monday, 7:00 pm ~ 9:50 pm
Room: ARCH319

CONTACT INFORMATION

Office: ARCH420
Tel. (817) 272-3367
Fax. (817) 272-5008
Email: jjli@uta.edu
Faculty Profile: <https://www.uta.edu/mentis/profile/?1139>
Office hours: Monday 4:30 PM – 6:30 PM, and by appointment

COURSE DESCRIPTION AND OBJECTIVES

This course is the second of the three sequential Geographic Information Systems (GIS) courses offered by the College of Architecture, Planning and Public Affairs. The course reviews GIS concepts and techniques covered in the introduction to GIS class, and introduces students to more advanced spatial modeling concepts and GIS functionalities provided by ArcGIS. Through illustrations of GIS applications to urban and regional studies using more advanced and specialized GIS software, students will learn additional terminologies, model concepts, and GIS applications. Students will have the opportunity to apply GIS techniques to a real world project. The course consists of lectures and labs.

The major objectives of this course are to help students:

- understand spatial modeling concepts;
- work with different GIS databases;
- recognize advanced GIS functionalities and associated theoretical bases;
- appropriately apply and perform advanced GIS operations; and
- acquire the procedures and techniques for carrying out a GIS project.

PREREQUISITES

Completion of CIRP5356 or consent of the instructor

MEASURABLE STUDENT LEARNING OUTCOMES

After completing this class, students will be able to:

- consolidate spatial data;
- perform advanced spatial data analyses;
- perform web GIS tasks, and
- complete a GIS project using appropriate functions

TEXTBOOKS

GIS Fundamentals: A First Text on Geographic Information Systems, 5rd edition, by Paul Bolstad, Eider Press, White Bear Lake, MN, 2016

Modeling Our World, second edition, by Michael Zeiler, ESRI Press, 2010.

Handout materials from the instructor

COURSE REQUIREMENTS

There are seven requirements for the class: (1) reading assignments, (2) lab exercises, (3) writing assignments, (4) a term project, (5) project presentation, (6) final exam, and (7) class attendance.

Readings: Reading is essential for learning. It is the basic material for topics covered in lectures. Reading assignments are included in the course schedule section. Students are expected to complete the reading assignments prior to each class session. Students are encouraged to read additional readings related to GIS.

Lab exercises: Besides lectures, there will be lab exercises throughout the sessions. Students are expected to complete lab exercises in class. The lab exercises cover the essential techniques of spatial data management and analyses, and provide opportunities for students to gain hands-on experience with GIS functionalities.

Writing assignments: A number of writing assignments will be given throughout the semester. Students are expected to complete the assignments on time.

Term project: In addition to lab exercises, students are expected to work individually or as a group to complete a GIS term project using the knowledge and techniques learned through lectures and lab exercises in class. The term project topics will be provided. The final product of the term project includes a complete project report, a poster presentation, and a GIS database developed for the project. The project report should be of professional quality and document all the tasks performed and results of the analysis. All maps and tables included in the report should be properly labeled and referenced in the text. All references should be appropriately cited in the text and listed in your report. The final report should be typewritten and completed by the due date (see class schedule for the due date). The project turned in past the due date will be penalized 2% for each day late for each team member. No project will be accepted after May 10, 2019 unless special arrangement has been made with the instructor.

Presentation: Each student is expected to create a poster and present the analysis results of his/her project to the class at the end of the semester. The poster is part of the project and should be included in the final project package.

Final exam: There will be a final exam. The exam will include questions drawn from topics covered in readings, lectures, and in-class exercises. The purpose of the exam is to help students get familiar with the basic terminologies and topics covered in the class.

Class Attendance & Participation: Regular class attendance is required. In addition, students are expected to actively engage in class discussion and learning. Lectures and lab exercises are sequential. They are built on skills gained in previous sessions. Students are required to attend all the lecture and lab sessions. Unless there is a legitimate reason, no excused absence will be granted. A written note from an authority (e.g. doctor, employer, *etc.*) will be required for any legitimate absence. Each unauthorized absence will result in a 3% deduction from your total weighted score. Please refer to university drop policy if students wish to drop out from the class.

GRADING POLICY

The course grading will be based on the following components:

1. Assignments:	40%
2. Term project:	20%
3. Final exam:	20%
4. Project presentation:	10%
5. Class attendance & participation:	10%

Total:	100%
--------	------

CLASS SCHEDULE

Date	Topics	Readings	Assignments
1/14	Course overview		
1/21	MLK holiday (no class)		
1/28	Real world GIS applications	Handout	
2/4	Review of GIS fundamentals	Handout	
2/11	Surface Pattern Modeling	Bolstad, Chapters 10 Zeiler, Chapter 9 Handout	Assignment #1
2/18	Spatial Statistical Modeling	Bolstad, Chapters 12, Handout	Assignment #2
2/25	Surface Modeling and Visualizing in 3Ds	Zeiler, Chapter 2, 10 Handout	Assignment #3
3/4	GIS for public service management	Handout	Assignment #4
3/11	Spring break (no class)		
3/18	Web GIS fundamentals	Handout	
3/25	Mobile GIS	Handout	Assignment #5
4/1	Analyzing data online	Handout	Assignment #6
4/8	Sharing project online	Handout	Assignment #7
4/15	Project preparation		
4/22	Project presentation		Term project
4/29	Review & reflection		Assignment #8
5/6	Final exam		

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.

ADDENDUM TO COURSE SYLLABUS

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled.

In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.