Instructor: Dr. Andrew Milson
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Office Hours: M 3:30-5 (UH340) & W 3:30-5 (SH323C) and by appointment

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Catalog Description

A practical introduction to GIS and methods of creating, maintaining and displaying spatial data using the ArcGIS software. Prerequisite: junior standing.

Description of Course Content

Geographic Information Systems (GIS) are computerized systems designed for the storage, retrieval, and analysis of geographically referenced data. GIS uses advanced analytical tools to explore spatial relationships, patterns, and processes of a wide variety of phenomena – particularly in the social, biological, and physical sciences.

This course covers underlying geographic concepts (world coordinate system and projections, vector map topology, tiled and layered maps, etc.), map design and outputs, geodatabases, importing spatial and attribute data, digitizing, geocoding, spatial data processing, and an introduction to advanced spatial analysis. Other topics such as raster integration, Internet-enabled GIS, network, and 3D analysis are also addressed. The technical focus of the course includes computer lab tutorials using the leading desktop GIS software, ArcGIS from Esri.

Application areas covered in this course include city and regional planning, community planning, economic development, education, election and environmental studies, housing and property evaluation, transit and transportation issues, land use, historic studies, crime analysis and policing, emergency management, public works utilities, census population and demographic studies, health, and business applications, including marketing, advertising, and site selection.

Upon completion of this course, students will be able to identify spatial characteristics of diverse application areas, enabling them to integrate spatial thinking and GIS analysis into their academic research and careers.

Required Course Materials

1. Map Use: Reading and Analysis (6th Edition) by Kimmerling, et al, (ISBN: 978-1-58948-283-8)
2. GIS Tutorial 1: Basic Workbook for ArcGIS 10 by Gorr & Kurland (ISBN: 978-1-58948-259-3)

Major Assignments

Your course grade will be determined by your performance on the following assignments. See the course calendar for due dates.

1. Lab Assignments (40%)
2. Unannounced Quizzes (20%)
3. Midterm Exam (20%)
4. Final Exam (20%)

Grading Policy

Refer to the course calendar for specific due dates for assignments. Lab assignments are to be submitted to Blackboard. Lab assignments will not be accepted after the due date. Problems with technology will not be accepted as an excuse for failure to post assignments by the due date. Plan ahead!! **No make-up work or extra assignments will be accepted**

in order to improve your grade. Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog.

Grading Scale: A = 90–100%; B = 80–89%; C = 70–79%; D= 60–69%; F = below 60%

Attendance Policy
You are expected to attend all class meetings for the entire scheduled class time. Unannounced quizzes will be given during the scheduled class time. There are no make-ups for missed quizzes. Frequent absences will be detrimental to your understanding of the content and your performance on exams.

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://wweb.uta.edu/ses/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
At UT Arlington, academic dishonesty is completely unacceptable and will not be tolerated in any form, including (but not limited to) "cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts" (UT System Regents' Rule 50101, §2.2). Suspected violations of academic integrity standards 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.

Discussion and teamwork among your classmates on lab assignments is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions, but you are expected to submit your own work for grading.

Student Support Services Available
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 contact the Maverick Resource Hotline by calling 817-272-6107, sending a message to resources@uta.edu, or visiting www.uta.edu/resources.

Electronic Communication Policy

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 will be asked to complete an online Student Feedback Survey (SFS) about the course and how it was taught. Instructions on how to access the SFS system will be sent directly to students through MavMail approximately 10 days before the end of the term. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback data is required by state law; student participation in the SFS program is voluntary.

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.

Date	What we will do in class on this date	What must be completed BEFORE class on this date ***Lab assignments must be posted to Blackboard no later than 5:30pm on due date***
8.29.11	Introduction to the course	
9.5.11	Labor Day - No class meeting	
9.12.11	Lecture: The earth and earth coordinates Lab: Using & making maps (Tutorial 1.1-1.8)	Read: Kimerling - Introduction & Chapter 1
9.19.11	Lecture: Map scale Lab: Map design (Tutorial 2.1-2.8)	Read: Kimerling - Chapter 2 Turn in: Assignment 1-1 (Gorr pp 43-44)
9.26.11	Lecture: Map projections Lab: GIS outputs (Tutorial 3.1-3.8)	Read: Kimerling - Chapter 3 Turn in: Assignment 2-1 (Gorr pp 82-83)
10.3.11	Lecture: Grid coordinate systems Lab: File geodatabases (Tutorial 4.1-4.6)	Read: Kimerling - Chapter 4 Turn in: Assignment 3-1 (Gorr pp 119)
10.10.11	Lecture: Land partitioning Lab: Spatial data (Tutorial 5.1-5.6)	Read: Kimerling - Chapter 5 Turn in: Assignment 4-1 (Gorr pp 146-148)
10.17.11	Lecture: Relief portrayal Lab: Digitizing (Tutorial 6.1-6.5)	Read: Kimerling - Chapter 6 Turn in: Assignment 5-1 (Gorr pp 188-189)
10.24.11	**Midterm Exam**	Review Kimerling chapters 1-6, lecture notes, and labs
10.31.11	Lecture: Qualitative thematic maps Lab: Geocoding (Tutorial 7.1-7.5)	Read: Kimerling - Chapter 7 Turn in: Assignment 6-1 (Gorr pp 226-227)
11.7.11	Lecture: Quantitative thematic maps Lab: Geoprocessing (Tutorial 8.1-8.7)	Read: Kimerling - Chapter 8 Turn in: Assignment 7-1 (Gorr pp 253-254)
11.14.11	Lecture: Image maps Lab: Spatial Analysis (Tutorial 9.1-9.3)	Read: Kimerling - Chapter 9 Turn in: Assignment 8-1 (Gorr pp 287-288)
11.21.11	Lecture: Map accuracy and uncertainty Lab: ArcGIS 3D Analyst (Tutorial 10.1-10.9)	Read: Kimerling - Chapter 10 Turn in: Assignment 9-1 (Gorr pp 317-319)
11.28.11	Lecture: Spatial pattern analysis Lab: ArcGIS Spatial Analyst (Tutorial 11.1-11.6)	Read: Kimerling - Chapter 17 Turn in: Assignment 10-1 (Gorr pp 355-356)
12.5.11	Lecture: Spatial association analysis	Read: Kimerling - Chapter 18 Turn in: Assignment 11-1 (Gorr pp 387-388)
12.12.11	**Final Exam**	Review Kimerling chapters 7-10, 17-18, lecture notes, & labs