Course	GISC6382: Applied GIS
Professor	Dr. Bryan Chastain Senior Lecturer, EPPS
Term	Spring, 2013
Meetings	Thursdays 1:00-3:45 pm, GR 3.602

Instructor's Contact Information

Office Phone	972-883-2517
Office Location	GR 3.232
Email Address	chastain@utdallas.edu
Office Hours	Wednesday 2:00 – 3:00 PM or by appointment
Other Information	We will use the new eLearning for this class. Please contact me through eLearning for all class related issues.
Teaching Assistant	Amir Najian, axn112630@utdallas.edu, GR3.414 Office Hours: Tuesdays 4:00-5:00pm; Thursdays 11:00-noon

General Course Information

Pre-requisites, Co-requisites, & other restrictions	GISC 6381: GIS Fundamentals or equivalent knowledge. Students will be expected to have competence in computer use, familiarity with ArcGIS 10, Operating system (e.g., file management in Windows 7), Word processing, spreadsheets, and Internet usage.
Course Description	This course further develops hands-on skills with industry-standard GIS software beyond the level acquired in **GISC 6381 GIS Fundamentals,** which is a pre-requisite for this course, for application in a wide variety of areas including urban infrastructure management, marketing and location analysis, environmental management, geologic and geophysical analysis and the social sciences. In particular, it aims to **make the transition from GIS as a descriptive, data management tool to GIS as an analytical research tool for drawing policy-relevant conclusions** from vector data. To a degree, it is a companion course to *GISC 6384 Spatial Analysis* which focuses on raster data.
Learning Outcomes	Upon completing this class, students will be able to: • Understand more advanced topics in applied GIS such as spatial files formats, topology, georeferencing, network modeling, surface interpolation • Perform vector-based operations and analysis on all major types of geographic features: points, lines and networks, polygons, and surfaces. • Implement GIS applications in a wide variety of areas including urban infrastructure management, marketing and location analysis, environmental management, geologic and geophysical analysis and the social sciences

Required Texts & Materials

- O'Sullivan, D. and Unwin, D. J., 2010, *Geographic Information Analysis, Second Edition*, John Wiley & Sons, Inc., ISBN: 9780470288573 **[OU]**
- Zeiler, M. 2010, *Modeling Our World: The ESRI Guide to Geodatabase Concepts*, 2nd edition, ESRIPress, ISBN: 9781589482784 **[Z]**

Assignments & Academic Calendar

[Topics, Reading Assignments, Due Dates, Exam Dates]

Students are expected to have read the assigned chapters prior to coming to class.

Week	Date	Day	Topic	Reading
1	17-Jan	Th	GIS Data Types and Structures using ArcCatalog Lab 1: Using ArcCatalog	[OU] pp.1-17 [Z] Ch. 1
2	24-Jan	Th	Data Processing using ArcToolbox and Modelbuilder Lab 2: Intro to ArcToolbox & ModelBuilder	[Z] Ch. 3 & 4
3	31-Jan	Th	Spatial Analysis using ArcMap Project Lab 1: Toxic Site Analysis	[OU] pp.17-45 [Z] Ch. 2 & 11
4	7-Feb	Th	Analyzing Tables using ArcMap Project Lab 1: Toxic Site Analysis (cont'd)	
5	14-Feb	Th	Georeferencing Lab 3: Georeferencing **Project 1 due**	[OU] Ch. 10
6	21-Feb	Th	CAD Conversion Lab 4: CAD Conversion	[Z] Ch. 5-7
7	28-Feb	Th	Creating & Editing Geodata: Geodatabases, Topology Project Lab 2: City Data Layer Creation	
8	7-Mar	Th	Networks and Network Modeling Lab 5: Networks	[OU] Ch. 6 [Z] Ch. 8
9	*14-Mar*	*Th*	*No Class – Spring Break*	
10	21-Mar	Th	Polygon Processing and Analysis Project Lab 3: Census Data Analysis **Project 2 due**	[OU] Ch. 3
11	**28-Mar**	**Th**	**Hands-on Exam**	
12	4-Apr	Th	Surfaces and Surface Generation Lab 6: Surfaces **Begin final project !!**	[OU] Ch. 8-9 [Z] Ch. 10
13	11-Apr	Th	Customizing ArcGIS Lab 7: Customization **Project 3 due**	

14	18-Apr	Th	Point Pattern Analysis and Spatial Statistics I Lab 8: Spatial statistics	[OU] Ch. 4-5,7
15	25-Apr	Th	Point Pattern Analysis and Spatial Statistics II	
16	2-May	Th	Topic TBD Students work on their final projects	
17	**9-May**	**Th**	**Final Project Due** **Make-up Exam**	

Course Policies

Grading (credit) Criteria	• Evaluation will be based upon:
	  o **Three** assigned **projects** (one each broadly associated with *Mapping*, *Editing*, and *Analysis*, for a total of 30%),
	  o Final (a fourth) student-selected **research project** (25%),
	  o Hands-on computer based "mid-term" **exam** (45%).
	• Additionally, there will be **eight** smaller **exercises** which must be completed but will not be "handed-in" or graded.
	• <u>Important note</u>:
	  o In all cases, students are expected to hand in work they have accomplished themselves. Because of the great variability possible with ArcGIS, no two student products should be identical or almost identical.
	  o You should be aware that assignments may require a substantial amount of work outside of class time.
	  o Some work will require use of the ArcGIS software level which is **not** available for use at home so this work must be conducted in the GIS lab on campus.
	  o Students who fail the hands-on exam will be given an opportunity to re-take the exam. If they fail a second time, they will receive no better than a "C" in the course.
	
	93-100 points = A; 90-92 points = A-
	87-89 points = B+; 83-86 points = B; 80-82 points = B-
	77-79 points = C+; 73-76 points = C; 70-72 points = C-
	69 and below = F

Make-up Exams	No Make-up project will be given without a legitimate excuse accompanied by proper formal documentation (e.g., a doctor's excuse).
Extra Credit	TBD
Late Work	Late submission for assignments will be penalized 10% per day late

Special Assignments	TBD
Class Attendance	Class attendance is required. Students are expected to actively participate in class discussion.
Classroom Citizenship	Please make sure you turn off your cell-phone before coming to the classroom. Viewing anything that is not related to class and communicating with others using instant messenger are prohibited during the class.
Academic Dishonesty	All suspected cases of academic dishonesty (cheating, plagiarism, collusion, etc.) will be immediately forwarded to the Office of Judicial Affairs. Students have a right to due process through Judicial Affairs, but if the accused student is found guilty of misconduct, Judicial Affairs has sole authority for determining punishment.
UT Dallas Syllabus Policies	http://coursebook.utdallas.edu/syllabus-policies/

These descriptions and timelines are subject to change at the discretion of the Instructor.