

The University Of Toledo

Existing Graduate Course Modification Form

* denotes required fields

Contact Person*: Daniel J. Hammel Phone: 530-4128 (xxx - xxxx) Email:
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Present

Supply all information asked for in this column.
(Supply core, research intensive and transfer module info if applicable)

College*: College Lang, Lit, and Soc Sci

Dept/Academic Unit*:

Geography and Planning

Course Alpha/Numeric*: GEPL
5110

Course Title:

Geographic Information Systems

Credit hours: Fixed: 04 or Variable: to

CrossListings:

GEPL 4110

Insert

To add a course, type in course ID and click the Insert button.

To remove a course, select the course on left and click the Remove button.

Remove

Prerequisite(s)(if longer than 50 characters, please place it in Catalog Description):

Corequisite(s)(if longer than 50 characters, please place it in Catalog Description):

Proposed

Fill in appropriate blanks only where entry differs from first column.

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Catalog Description (only if changed) 75 words max:

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Has course content changed?

Yes

No

If course content is changed, give a brief topical outline of the revised course below(less than 200 words)

There is no change to content

Proposed effective term*: (e.g. 201140 for 2011 Fall)

File Type	View File
Syllabus	View

List any course or courses to be deleted.

Effective Date: 

Effective Date: 

Comments/Notes:

Rationale:

Several years ago GEPL changed its technology based courses from 3 to 4 hours to include a short laboratory component. Currently, four hour courses make it difficult for our graduate students to register for the required 9 hours. Four hour courses also make it difficult for MA students to finish their degree without going over the required 36 hours. We have decided to eliminate the lab component and reduce the class to 3 hours, but keep the content the same. Students will have to do more of assignments and projects independently, but we do not anticipate problems. Instructors and teaching assistants in the course are generally available and our computer laboratory is staffed by a graduate student monitor during most business hours with experience in GIS.

Approval:

Department Curriculum Authority:	<input type="text" value="Beth Schlemper"/>	Date	<input type="text" value="2017/01/07"/>
Department Chairperson:	<input type="text" value="Daniel Hammel"/>	Date	<input type="text" value="2017/01/07"/>
College Curriculum Authority or Chair:	<input type="text" value="David Black"/>	Date	<input type="text" value="2017/01/27"/>
College Dean:	<input type="text" value="Barbara Schneider"/>	Date	<input type="text" value="2017/03/30"/>
Graduate Council:	<input type="text" value="Constance Schall, GC mtg 4/18/17"/>	Date	<input type="text" value="2017/04/19"/>
Dean of Graduate Studies:	<input type="text" value="Amanda C. Bryant-Friedrich"/>	Date	<input type="text" value="2017/05/01"/>
Office of the Provost :	<input type="text"/>	Date	<input type="text"/>

Administrative Use Only

Effective Date:	<input type="text"/>		(YYYY/MM/DD)
CIP Code:	<input type="text"/>		
Subsidy Taxonomy:	<input type="text"/>		
Program Code:	<input type="text"/>		
Instructional Level:	<input type="text"/>		

Registrar's Office Use Only

Processed in Banner on:	<input type="text"/>	
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Processed in Banner by:

Banner Subject Code:

Banner Course Number:

Banner Term Code:

Banner Course Title:

GEPL 5110 (3 credit hours)
Geographic Information Systems

Department of Geography and Planning
The University of Toledo
Fall 2018

Instructor: Dr. Yanqing Xu
E-mail: yanqing.xu@utoledo.edu
Office Hours: TR 3:00-5:30 pm and by appointment

Office: SM 3035
Phone: (419)530-4196

Teaching Assistant: Samuel Owusu-Agyemang
E-mail: Samuel.Owusu-Agyemang@rockets.utoledo.edu
Office: SM 3009
Office Hour: By appointment only

COURSE DESCRIPTION

Geographic Information Systems (3 credit hours) this course is a comprehensive introduction to the principles, techniques, and applications of Geographic Information Systems (GIS) for the capture, display, storage, management, analysis, and modeling of geographic information. It combines lectures with a substantial practical component. The lectures cover the nature of geo-spatial data, spatial data models, technical issues in GIS data acquisition, data storage and retrieval, georeferencing and geocoding, spatial query, GIS analytical functions, and various visualization methods. The practical component, involving 8~10 lab assignments, will give students hands-on experience in using proprietary GIS software packages to handle geo-spatial information. Students will carry out an independent project that will take them through a condensed, yet complete research experience of identifying a science problem/question, designing a research protocol, carrying out meaningful analysis and effectively addressing the question at hand.

COURSE OBJECTIVES

This fundamental objective of this course is to provide an understanding of the basic concepts and uses of GIS technology so that spatial analysis can be incorporated as an additional aspect of students' research and studies. Upon successful completion of this course, the students will be able to:

- (1) Explain basic concepts and principles of GIS;
- (2) Understand the importance of scale, projection, and coordinate systems in GIS;
- (3) Be aware of data sources, supporting software and functions, and the integration of GIS techniques to solve real-world problems;
- (4) Manage spatial data in ArcGIS;
- (5) Update and edit GIS data;

- (6) Analyze spatial data for spatial decision making
- (7) Gain hands-on experience using basic GIS tools and know what functions are available in GIS software

PREREQUISITES

This course is designed for those who are new to GIS and ArcGIS. No prior knowledge of GIS is required to take this course. However, there is a lot of material to cover and this will be a fast-moving and fairly technologically advanced course. It is expected that students will have a general knowledge and familiarity with personal computers, computer terminology, files and directories, and the Windows XP operating system.

MATERIALS

Text: *Mastering ArcGIS*, by Maribeth Price, Seventh Edition, 2014, McGraw-Hill Higher Education, New York, NY.

Course Management System:

Blackboard

<https://blackboard.utdl.edu>

Software requirement: ArcGIS 10.1 or above; Microsoft Office

Workspace: Students will have some limited storage space for their documents, which is provided by the lab. But it is recommended that each student prepare their own workspace with plug-and-play USB drives.

Computer usage and software: Lab room SM2170 is restricted to teaching and has limited open hours for the students. The instructor will provide students with single-user license software during the class.

In-class activities: The instructor will lead the class through some hand-on tutorials of specific operations in ArcGIS. The results will be counted as in-class activities.

EVALUTION

The only way to learn GIS is to practice, practice and practice. The course is projects-oriented. Concepts, methods and skills are built into each project. Grades will be assigned as follows:

≥94 = A	73-76 = C
90-93 = A-	70-72 = C-
87-89 = B+	67-69 = D+
83-86 = B	63-66 = D
80-82 = B-	60-62 = D-
77-79 = C+	<60 = F

Tentative Schedule – Subject to change		
<i>Week #</i>	<i>Class Dates</i>	<i>Topic</i>
Week 1	Aug 23	Course Overview
	Aug 25	Introduction to GIS
Week 2	Aug 30	Lecture 1a: GIS Data
	Sep 1	Lecture 1b: Managing GIS Data
Week 3	Sep 6	Lab 1
	Sep 8	Lab 1
Week 4	Sep 13	Lecture 2: Coordinate Systems
	Sep 15	Lab 2
Week 5	Sep 20	Lecture 3a: Mapping GIS Data
	Sep 22	Lab 3
Week 6	Sep 27	Lecture 3b: Presenting GIS Data
	Sep 29	Lab 3
Week 7	Oct 4 (No class)	Fall Break
	Oct 6	Lecture 4a: Attribute data
Week 8	Oct 11	Lecture 4b: Queries
	Oct 13	Lab 4
Week 9	Oct 18	Lecture 5: Spatial Joins
	Oct 20	Lab 5
Week 10	Oct 25	In-class practice
	Oct 27	Midterm
Week 11	Nov 1	Lecture 6: Network Analysis
	Nov 3	Lab 6
Week 12	Nov 8	Lecture 7: Map Overlay and Geoprocessing
	Nov 10	Lab 7
Week 13	Nov 15	Lecture 8: Raster Analysis
	Nov 17	Lab 8
Week 14	Nov 22	Lecture 9: Census Data
	Nov 24 (No class)	Thanksgiving
Week 15	Nov 29	Guest Speech
	Dec 1	Work on Final Project
Week 16	Dec 6	Work on Final Project
	Dec 8	Work on Final Project
Week 17	Dec 14 (Wednesday)	Final exam 2:45 – 4:45pm

The description and value of each part is as follows:

Activity	Description	Weight	Due Data	
Class Participation	In-class Assignment/Participation in Discussion	5%		
Lab Assignments	8 labs, 5% each (TA grade)	40%	Post on Blackboard	
Mid-Term Examination	In class, 1.5 hr., open book (TA grade)	20%	Oct 27 (Thurs) 1:00-3:40pm	
Final Project (35%)	In class oral presentation 10%	Instructor grade	5%	Dec 14 (Wed)
		TA grade	5%	2:45-4:45 pm
	Final projects report (instructor grade)		25%	Dec 16 (Fri) 10:00 pm
Total		100%		

Note: Graduate students must complete an additional project equivalent to the final project in scope. There is no oral presentation for this project, but a final report must be completed. The two projects constitute 25% of the grade.

POLICIES

Class attendance

Students are expected to attend regularly all classes in which they are enrolled. It is the responsibility of the student to notify the instructor ahead of time of an absence. Your participation in the learning activities provided during class is important to your learning success in this course and is assessed for grading purposes. All students are expected to come to class prepared and on time, and remain for the full class period.

Make-up & late work policy

Make-up exam will only be arranged with an official doctor's "note" or some other official documentation. All lab assignments are due at the due date posted on Blackboard. This course has step-by-step lab assignments. The practical lab exercises provide a way to acquire skills in displaying, processing, and analyzing geospatial data. ArcGIS software will be used as the major software for lab exercises. Assignments submitted after the deadline are considered late and will be penalized. Late work is accepted up to five days after the due date, with a 10% penalty for each day late.

Email and class messages

The best way to reach me is by e-mail as I check it often. The University is using only the official "utoledo" email addresses for all email correspondence to students. Please send any questions and other correspondence to me with your University of Toledo e-mail address. It also helps to put the course name in the subject line, such as "GIS".

Office Hours

Please stop by my office hours to discuss any concerns or questions you have about the course and its contents. If these times are inconvenient for you, I am happy to schedule an appointment with you. If you have an appointment with me and conflict arises, please let me know as soon as possible.

Scholastic Dishonesty

Academic work submitted by students shall be the result of their thought, research, or self-expression. Academic work is defined as, but not limited to tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations, and homework. I will not tolerate academic dishonesty. It is your responsibility to know what constitutes academic dishonesty. If you are unsure, you should consult the University policy in the Student Handbook and the University Catalog.

Accommodations and Accessibility

Any student needing to arrange a reasonable accommodation for a documented disability should contact the Office of Accessibility at Rocket Hall Room 1820, 530-4981 (voice), 530-2612 (TTY).