

Geographic Information Systems – Geogrpahic Information Systems

GIS 317 – 4 credit hours

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Office hours via email: 5-8pm Mon-Sat.

Prerequisite: Geog 316 - Fundamentals of GIS –In good standing (C or better).

Course Description:

This course is the second in a series of introduction to the principles and applications of computer based geographic information systems. Geog 317 is the second of four courses in the 14-credit hour GIS certificate. For more information on the GIS certificate, please see www.wku.edu/gis

Spatial information sources, data encoding, storage, management, analysis, and display are highlighted through the application of GIS techniques to problems in a variety of fields, including land use and natural resource management, transportation, and urban and regional planning. Students will become acquainted with both raster and vector models using ArcGIS.

Course Objectives and Outcomes: The objective of this course is to understand the theoretical basis and geographic principles of GIS. Thus it is far more than just learning a software package though we do use ArcGIS for classwork.

After completing this course, a student should be able to:

1. Understand and explain to others what GIS is, what the major components of the technology are and typical applications of GIS.
2. Demonstrate an understanding of the geographic basis of GIS through correct use of Map projections, coordinate systems, scale, and cartographic generalization for different data sets.
3. Understand the principles of the raster and vector data models and be able to create, modify, analyze and map data in both forms.
4. Understand and explain the role of topology in the storage and analysis of geographic data.
5. Understand the relationship between attribute and feature data and know how both are stored.
6. Identify, download, and manipulate into a useable format existing state and national data sets available over the internet.
7. Use GIS analysis tools, including spatial and attribute queries and geographic visualization, to explore a data set and formulate a research question.
8. Use basic vector analysis techniques, including buffering, overlay, and distance measurement, to solve a geographic problem.

Class Format and Policies:

This course is administered with WKU's Blackboard software, which is accessible at <http://blackboard.wku.edu/> . The Blackboard web site will be your entry point for all course materials not contained in the textbook. All assignments must be uploaded to Blackboard. Assignments emailed to the professor will not be accepted.

Special Note on Blackboard & Web Browsers:

Some web browsers interact with Blackboard better than others. Firefox is the preferred browser for use with WKU's Blackboard. If you receive an error message about an invalid file type when attempting to upload an assignment file, then you need to change the browser version or type of browser that you use. In Blackboard, see the tab "Browser Compatibility" for further information.

Course materials:

Text: (Required): Mastering ArcGIS. Maribeth Price. McGraw Hill. **7th edition**. It must be the 7th edition—no exceptions.

External drive backup:

If you don't already have one, considering getting an external backup drive. See the following link for various types and price ranges.

<https://www.google.com/search?q=passport+drive&oq=passport+drive&aqs=chrome..69i57j0l5.2624j0j8&sourceid=chrome&ie=UTF-8#q=passport+drive&tbm=shop>

Your Campus P: drive will hold small amounts of data but not the entire space needed for this course. If you are working from home and your computer has sufficient storage space then that is all you will need.

Internet Access:

You must have reliable access to a recent **computer** running the Windows operating System (no Macs as ArcGIS does not support Mac). The instructor will give you ArcGIS 10.3 (or latest version) software to use if you don't already have one.. If your computer is not reliable you will need to find another solution. Solutions may include using the WKU computer labs for all work or finding access to a newer, non-Mac computer. Get any computer issues sorted early on. Computer issues are not an excuse for late work.

Reliable internet source.

Recommended to load large files on campus. Some students will have difficulty uploading the large files because of your connection at home. I recommend boosting your home internet during this course or heading out to McDonalds with your laptop if you want to upload from home. Again, internet issues are not an excuse for late work so you are responsible for having an alternative in place. If you have a poor internet connection then I recommend turning in all your work early and then you will have time to take it to a lab to submit before the due date.

Zip compression:

To submit assignments and labs, you will need a program that does zip compression. The one that comes with Windows will work just fine. If you do use another zip package it must be compatible with the instructor's computer

Topper/WKU email:

Be sure to check your wku email regularly since the instructor will communicate via that method.

Grading Scale:

The grading scale is as follows:

A (90% - 100%),

B (80-90%),

C (70-80%)

D (60-70%)

F (Below 60%)

Timeliness of all assignments: No late work will be accepted in the summer sessions. This policy is designed to encourage responsibility, accountability, and assist me in providing you with timely feedback. The assignments build on one another. It is important to start early for time to ask questions. Pay close attention to these dates. Plan to be finished before the due date.

Other important info:

Students with disabilities: In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Office for Student Disability Services in Downing University Center, A-200. The phone number is 270 745 5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services.

Academic Honesty: Each student should be aware of the student code of conduct found in WKU's student handbook. Examples of academic dishonesty include cheating on an exam, allowing another student to copy your work, either inside or outside of class; using work from previous semesters; and plagiarism. Caught cheating in this course will result in failing the course and possible removal from the University.

Schedule Change Policy: The Department of Geography and Geology strictly adheres to University policies, procedures and deadlines regarding student schedule changes. It is the sole responsibility of the students to meet all deadlines in regard to adding, dropping, or changing the status of a course. Only in exceptional cases will a deadline be waived. The student schedule exception appeal form shall be used to initiate all waivers. This form requires a written attachment of appropriate documentation. Poor academic performance, general malaise, or undocumented general stress factors are not considered as legitimate circumstances.