

## **Department of Geography and Geology**

GISC 316: Fundamentals of GIS On-Demand

**Instructor:** Amy Nemon [amy.nemon@wku.edu](mailto:amy.nemon@wku.edu) EST 359 (270)-745-3082

### **Course Description**

GEOG 316 is a requirement for both the Geography Major and the GIS Certificate Program.

Prerequisites include GEOG 110 and GEOG/GEOL 103 or METR 121 or GEOL 111:

### **Course Objectives:**

Students will be involved in a three-part learning process:

**Technical Skills:** Students will be introduced to and become competent with manipulating spatial data on the computer, utilizing ArcGIS. Together these skills should enhance a student's ability to recognize good map design and create well-designed and well-executed maps.

**Cartographic Traditions:** students will learn the principles, philosophies and theories of thematic map design, including projection, scale, accuracy and symbolization strategies. Students will also develop skills of map reading and interpretation.

**The Design Process:** Students will learn the fundamentals of cartographic perception, design methods, and the applications necessary for them to confidently design their own maps.

### **Learning Outcomes:**

This is not just a course in how to use a software program. To ensure accurate results from the software one must understand the theoretical basis and geographic principles of GIS. 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 the relationship between attribute and feature data and know how both are stored on disk. Also, depending on time we will begin to explore these topics: 5-Use GIS analysis tools, including spatial and attribute queries and geographic visualization, to explore a data set and formulate a research question.

### **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 may need to change the browser version or type of browser that you use. In Blackboard, see the tab "Browser Compatibility" for further information or call the IT HelpDesk at 270-745-700

**Material needed:** Mastering ArcGIS 7th edition by Maribeth Price. The text must be the 7th edition.

Disks or thumb drives to back up your homework and lab exercises only. It is not recommended to work on data that is on an external drive as this causes problems with the software.

Students must have reliable access to a recent computer running the Windows operating System (no Macs). I will give you ArcGIS software to use.

A reliable internet source. 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!

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 my computer.

You must use your topper/WKU email or change your preferred email in TopNet. Verify with IT that your preferred email is the one I have access to in blackboard.

I will be emailing you regularly. I ask that you respond within 24 hours to questions I ask you (except over the weekends of course—if I email you on Friday please get back to me by Monday). I will extend the same courteousness to you.

Courteousness: Civility tends to be fading in the classroom. Please be professional and courteous at all times during this course in emails, discussion boards etc., not only with the professor but also with classmates. Treat emails with professionalism and remember that you are not texting. GIS can be very frustrating at times but typically the problem lies with the user. Be patient and I will help you to help yourself but at no time will a lack of courteousness be tolerated.

### **Grades & Course Expectations:**

GIS skills are best learned through repeated application, so this course is structured to provide you with multiple opportunities and exercises to practice and learn GIS skills. Finally, the labs require you to synthesize the skills learned and to apply them to a new situation. The labs require a higher level of thinking and independent decision making. Learning is also a collaborative endeavor.

**Grade determining:** The final grade will be a weighted total:

10% Review questions and chapter tutorials (5 total)

15% Practice activities (17 total)

20% Challenges (9 total)

10% Lab 1

10% Exam 1

10% Lab 2

10% Exam 2

15% Lab 3

### **Other important details:**

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 regarding 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.