**subject to change*

Department of Geography and Geology **GISC 317 Web: Geographic Information Systems**

Instructor: Amy Nemon
Email: amy.nemon@wku.edu
Office hours in EST 332: *email during the summer semester*
Office: EST rm. 332 270-745-3082

Course Description: This four credit hour course is an introduction to the principles and applications of computer based geographic information systems. 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. 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

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

Course Objectives and 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:**

- Understand and explain to others what GIS is, what the major components of the technology are and typical applications of GIS.
- 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.
- Understand the principles of the raster and vector data models and be able to create, modify, analyze and map data in both forms.
- Understand and explain the role of topology in the storage and analysis of geographic data.
- Understand the relationship between attribute and feature data and know how both are stored on disk.
- Identify, download, and manipulate into a useable format existing state and national data sets available over the internet.
- Use GIS analysis tools, including spatial and attribute queries and geographic visualization, to explore a data set and formulate a research question.
- 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.

1- **Exams:** Exams should be taken at the scheduled time (see calendar). Make-ups will be given only for the following special circumstances: 1) a university-sponsored activity; 2) illness with a doctor's written

excuse (no exception). You must notify me in advance unless physical circumstances prevent it. **In the on-line section exams will be taken at a local testing center and information will come to you during the first week of class.** Students must have a 3 by 5 inch cheat sheet with them during the exams. These cards must have only hand written information and will be collected by the proctor or the instructor. Web sections will take exams at a local DL testing center.

2- Auditing of this course is not allowed. Incompletes are allowed only under exceptional circumstances. Failure to complete assignments in a timely manner does not qualify.

3- **Attendance:** Does not apply to the web section.

4- **Material needed :**

- **Text: (Required) Text:** Mastering ArcGIS. Maribeth Price. McGraw Hill. **7th edition**. It must be the 7th edition—no exceptions. Some type of backup drive to back up your homework and lab exercises. Your P: drive will hold small amounts 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.
- You must have reliable access to a recent **computer** running the Windows operating System (no Macs). I will give you ArcGIS 10.3 (or latest version) software to use. 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.
- **A 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.
- 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**. 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 morning). I will extend the same courteousness to you. If you email me hours before an assignment is due there is a chance that I will not respond to you until after the assignment was due—again work a head to eliminate late penalties and this type of problem for yourself. Questions specifically about the assignments should be located on blackboard's **Discussion board.** Send me an email that lets me know that you have posted something and I will respond. Everyone should check these regularly.
- **Courteousness:** Civility tends to be fading in the classroom. Please be professional and courteous at all times during this course in class, via 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. Please 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. There will be times during this semester when your maps or other GIS products will be shared with the entire class for the class to comment on. This peer evaluation serves a dual purpose. It is intended to help the student whose work is critiqued improve their work.

It is also intended to help you develop your critical analysis skills, which you can then apply to your own work on a continuing basis. For students taking the online version of the course, (during a regular semester), you can expect to spend a minimum of eight to twelve hours per week on the course.

Grading Scale: The grading scale is as follows: A (90% - 100%), B (80-90%), C (70-80%), D (60-70%), F (Below 60%). Keep track of your grades on Blackboard. Curving will be done by my discretion. There is no extra credit, please do not ask.

The final course grade is based on:

8 Modules of ESRI on-line courses, 8 Sets of Chapter Review Questions, 8 sets of chapter tutorials, (10% of final grade)

1. Modules of ESRI on-line courses: A self-paced on-line course that provides an initial introduction to procedures with cook book style instructions. Many of you have completed at least 7 of these during 316 . We will be using the information in the Modules for content and you will be tested over this information. I encourage you to read through and take notes. You may wish to retake the test for each one—a couple of times—as you prepare for the midterm and final. I will allow you to submit a module certificate that has been completed within 1 year. Again, don't ignore these because you have them done already. I've already prepared test questions from this info and have even stolen some questions from the exams you take at the end of each one (hint hint).

2. **8 Sets of Chapter Review** Questions Selected review questions from the end of each chapter in our textbook. The selected questions will be answer within BlackBoard. Students should use this activity to prepare for exams. Treat these like a study guide and review your feedback from me as you prepare for the exams. May work on in multiple sessions but may only be submitted once—do not submit until you are ready for me to grade or the due date. Second submissions will be ignored.

3. **8 Sets of Chapter Tutorials:** Selected tasks from the end of each chapter in our textbook. Further instructions in BlackBoard. You must submit the test assessment, in blackboard, that answers the questions and turn in a zipped folder. May work on in multiple sessions but may only be submitted once—do not submit until you are ready for me to grade or the due date. Second submissions will be ignored.

10 Exercises & other activities (20% of final grade)
• Exercises are designed to teach you specific GIS skills and how to put them together for problem solving. They are not meant to be time consuming but will really drive home the tasks we are learning and prepare you for the upcoming Labs. Any 'other' assignment will go into this category.

5 Labs (50% of final grade, 10% each)
•Labs are substantial applications of skills learned in the course and require some original thinking. Labs require "synthesis" -using skills to solve problems without being given cookbook style instructions. This is where you show off what you have learned. I will assist you only to a point. The labs are like exams and you must complete them on your own.
• Labs will be graded based on the correctness of the solution and how well the solution is communicated in a map and lab write-up.

2 Exams: (20% of final grade each, 10% each)
Exams are closed book and internet. If you navigate away from the test or open another window you will receive a 0 for the exam. I will allow a 3 by 5 note card that you may write anything you want on both sides to take in with you. You may not print anything on a printer—has to be all hand written. This will be collected.

Timeliness of all assignments:
No late work will be accepted in the summer sessions. **T**his 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.

Important dates this semester & Daily Schedule and important due dates at a glance: (all subject to change):

Summer Session A Monday 6/13-Friday 7/15:
Lab 1 Due Monday 6/27
Lab 2 Due Monday 7/4
Lab 3 Due Tuesday 7/12
Lab 4 Due Wednesday 7/13
Lab 5 Due Thursday 7/14
Final Comprehensive Exam Friday 7/15

Summer Session B Monday 6/6-Friday 7/29:
Lab 1 Due Monday 6/27
Lab 2 Due Monday 7/11
Lab 3 Due Monday 7/25
Lab 4 Due Tuesday 7/26
Lab 5 Due Wednesday 7/27
Final Comprehensive Exam Friday 7/29