Fundamentals of GIS (GEOG 316, section 700) – Spring 2011

Class Information

Instructor: Pat Kambesis
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Office hours: by appointment

Fundamentals of file management, basic GIS data management and cartographic design. Topics include file management, data organization, map projections, scale, and accuracy, understanding different map types, making maps with ArcMap.

Prerequisites: GEOG 100 or GEOG 101 or GEOL 111 or Permission of Instructor

Textbooks: There are two required textbooks. You can probably find in used condition online.

Mastering ArcGIS by Maribeth Price, 4th edition (ISBN 978-0-07-352284-5*) It is important to get the correct edition and to insure that it contains the class CD as many of the class exercises will be directly from that book as will the data required to do them.*

Cartography: Thematic Map Design, 6th edition by Dent, Torguson, Hodler
ISBN: 978-0-07-294382-5. *The background information for all aspects of this course will be covered in this textbook.*

Other Requirements:

You must have access to a PC or lap top that runs windows. The software that we use is not Mac compatible. However, if all you have is a Mac, in the more current models you can partition your hard drive to run Windows and can install the software there. I have never done this personally and do not own a Mac, but I'm told it can be done.

- External drives (like a WD passport drive) or thumb drives to backup your homework and lab exercises. You may use CD-RW also. It is critical that you back up all of your work.
- **You must have reliable access to a recent computer running the Windows operating system and** either reliable access to ESRI ArcGIS 9.3 software or the ability to load software I will give you on your computer. The WKU student computer labs (on all three campuses) provide all software needed for this course, so if you are able to use those labs, you have met this requirement.
- **You must have access to a computer with a reliable internet connection**. Again, the WKU student labs meet this requirement.
- To submit assignments and labs, you will need a program that does zip compression, such as WinZip or PKzip. This program is available in WKU student labs. Shareware versions maybe found on www.tucows.com.

Very important: the software that you use to zip your files must be compatible with my computer. If I am unable to open your files I cannot grade them. You should do a practice zip and send it to me prior to your first assignment. In other words if your zip program is not compatible with mine and you send your first assignment and I cannot open it: it will be too late so please look into this and work out the kinks sooner than later.

Course format: This course is entirely administered online. If student require a face-to-face meeting we can set something up on Skype. This course is administered with WKU's Blackboard software, which is accessible at http://ecourses.wku.edu/. The Blackboard web site will be your entry point for all course materials. Students who take the conventional form of the class benefit from having an instructor present to answer their questions immediately as they work through assignments. **Students taking the online version of the class must be prepared to take greater responsibility for their own learning. They must be disciplined and set aside time regularly each week to work on the class.**

There will be due dates for all assignment which will be posted with the assignment directions. Due dates for work in this online class will be enforced just as in a traditional class. Class work should not be left till the end of the semester and you will be penalized for late submissions.

Students in the online class must recognize when they don't understand something and email for help. The instructor will make every effort to work the student through problems and students can also make an appointment on campus for more hands-on help should they require it. However, it is best for the entire class that your questions come through our discussion board in blackboard. This way the entire class benefits from the question and response and may even offer help to you as well. Because this is an online class, we won't be having traditional lectures, but PowerPoint presentations will be available via Blackboard to accompany the reading. If something isn't clear – please ask about it!

Each week there will be at least one PowerPoint presentation (available from Blackboard) on the topics of the week. There will be online tutorials from ESRI and readings from the Dent book and readings and hands-on lab exercises from the Price book. They may also be tutorials and exercises from other sources – the instructor will send you links or files when necessary. Students will have all week to work on the assignments – dues dates for each assignment will be noted on Blackboard.

Exams and Projects: There will be 2 "exams" for this class but they will have take the form of short projects and you will have a 24-hour period to complete the exams. Rather than a formal final exam, there will be a final project due at the end of the semester. In addition to the exams there will also be quizzes associated with online tutorials that you will be doing.

Study hints: Information necessary to complete project exams will come from the two textbooks, from the PowerPoint presentations, or from on-line links and tutorials and will also cover the skills that you learned during the course. In order to do well in this course, students should expect to spend 8-12 hours of time working on class readings, assignments and projects.

Timeliness:

Students should **start early** on **lab** assignments to allow time for overcoming unanticipated problems.

Late labs will be penalized 10% for each day after the due date that they are late. Labs may be turned in up to three days late, but will not be accepted after the third day. All other assignments are subject to the same policy. These policies are designed to encourage responsibility, accountability, and assist me in providing you with timely feedback.

Students in the online version of the class who are full-time working professionals (i.e. not full time Western students) and who are required to travel for their job should contact me to work out individual exceptions to the schedule. Verification from a supervisor will be required.

Course Objectives: You will learn the following skills:

- **File management**. Using folders effectively, maintaining a logical folder and file structure for your working files and keeping all files for one project in one place. Be cognizant of the drive on which your files are located (hard drive, thumb drive, cd, laptop etc.) and avoid creating projects that use files from multiple drives.
- **Project file structure**. Be able to deliver complete GIS assignments i.e. deliver not only the project file (.mxd), but also all data files that the project uses.
- **Data file structure**. Deliver complete data files for your assignments. Recognize that most GIS data formats uses multiple files on disk to present a logical view of a single data file, e.g. a "shapefile" consists of 3-7 real disk files with file extensions .shp, .dbx, .idx, .prj, and so on, and all of these files must be present for the "shapefile" to function.
- **Zip files**. Package all the files needed for an assignment into a single compressed (.zip) file for delivery of the assignment to the instructor.
- **Projections and Coordinate Systems**. Recognize that the projection and/or coordinate system used by a GIS project affects the accuracy of the project. Be able to identify the coordinate system for a project or set one for a new project.
- **Map scales**. Set the projection and/or coordinate system, map units, and geographic units to create an accurate scale for a map.
- **Cartographic Design** – Apply the principles of cartographic design with respect to map type (selecting a suitable type for a given data set), symbolization, color, data classification (e.g. the classes that are shown in the legend), typography, and level of generalization to produce maps that are clear and effective in communicating to map readers.
- **Map types** – Learn about different map types and which one are appropriate for the data and information that you are trying to convey.
- **Technical Skills** - Students will be introduced to and become competent with ArcGIS 9.3
- **Class credit:**

Late assignments and projects have a one week grace period after which they will not be accepted. The final project must be submitted by the due date and will not be accepted late.

Lab exercises and homework: 40% of your grade

Project Exams:	20% each (40% total)
Final Projec:t	20%

GRADING SCALE: 90% - 100% = A, 80% - 89% = B, 70% - 79% = C, 60% - 69% = D Less than 60% = F.

Other important info

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 an other student to copy your work under any circumstances; using work from previous semesters; and plagiarism. Thought 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.