

Advanced GIS GR 4313/6313 Distance Learning Spring 2013

Instructors:

Dr. William H. Cooke
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Information

- Please email the instructors through MyCourses. Please refrain from making phone calls, this method is a last resort, and will only be used at the instructor's request.
- For all technical issues email Help@distance.msstate.edu or call 662-325-0276
- MSU Bookstore phone: (662) 325-1576 or (662) 325-2249
- Geosciences fax: (662) 325-9423
- Textbook: *GIS and Multicriteria Decision Analysis, 1999*, Jacek Malczewski, John Wiley and Sons, Inc. ISBN 0-471-32944-4
- Software: ArcGIS Version 10, Microsoft Excel, Real Player

Course Description

This course and the accompanying laboratory stress data modeling and analysis in the raster domain. It is imperative that each student has a basic working knowledge of computers and file management skills in order to use the software that is available for the course. Students should be familiar with GIS software including ArcGIS, and ArcMAP 'Spatial Analyst'. Experience with Simple Linear Regression is helpful, but not mandatory.

Course Objectives

- Expand understanding of 'spatial' data via examination of opportunities and advantages of the data;
- Review concepts of vector-based GIS;
- Examine aspects of spatial dependency and its effects on focal, zonal, and interpolation functions;
- Expand concepts of GIS multicriteria modeling.

Method of Instruction

The course will be administered through the **MyCourses** website which can be accessed at <http://mycourses.msstate.edu>. The lectures, quizzes, grades, course information, contact with the instructors, etc. will be conducted through MyCourses. Please, check the MyCourses course page daily for updates. The **lectures** will be available through web-streaming (Quicktime format) and these video files can be accessed through the "Learning Modules" course tools (left menu bar). The streaming requires Quicktime®, which you can download for free at www.apple.com/quicktime/download/. If there are technical problems watching the videos on-line, please email the instructors. The PowerPoint presentations of each lecture are also available on MyCourses in the "Learning Modules" link. To assist with the labs, there are a few video files to get you started. These are also available via video streaming from MyCourses. The lab documents (instructions and lab data) are available on the course home page in a folder

titled Labs. You will need a software program, such as WinZip or 7-Zip, to extract the files from a zipped folder. It is likely that your computer already has such a program. If not, you can download 7-zip for free from the internet at <http://www.7-zip.org/>. Please contact the instructors immediately if you have questions or need assistance downloading the lab files.

Office Hours

You may contact **Kate Grala**, the main contact for the course, at any time Monday through Friday from 9 am to 4 pm (Central Time Zone) via the MyCourses mail tool. A timely response will be given during this timeframe. Questions are always welcome at any time, but may take a little longer to answer outside of office hours and during school holidays.

Student Responsibilities

Preparation: Students should feel free to ask questions during the course of each lecture and lab, as this is the best time to clarify anything that is confusing. Please prepare for each lecture by reading assigned material and by reviewing your notes.

Lecture Videos and Readings (tentative schedule)

Week #	Lecture Video	Book Reading
1	1	Chapter 1
2	2	Ch. 2 pg. 15-36
3	3	Ch. 2 pg. 36-57
4	4	Ch. 2 pg. 57-77
5	5	Chapter 3
6	6	Chapter 4
7	7	Chapter 5
8	8	Chapter 6
9	9	Ch. 7 pg. 197-226
10	10	Ch. 7 pg. 226-254
11	11	Ch. 8
12	12	Ch. 9

GIS Laboratory Exercises (tentative schedule)

Lab #	Week	Lab topic
1	2	Map Making/layout & GIS Function Review
2	3	Spatial Analyst
3	4	Selection and Scoring
4	5	Ranking, Weights, and Slope
5	6	Interpolation Methods
6	7	Density Analysis for Assessing Patterns
7	8	White Oak Suitability Modeling
8	9	Linear Regression
9	10	Cost Distance
Project	11-12	Final Project

Important Dates

Spring Break: 3/09/2013 to 3/17/2013

School Holidays: 1/21/2013 and 3/29/2013

Timed Midterm Exam available from: 2/22/2013 to 2/28/2013

Final Project available from: 4/01/2013 to 4/19/2013

Timed Comprehensive Final Exam available from 4/19/2013 to 4/29/2013

Grading

Undergraduate student grades will be based on a timed midterm exam and a comprehensive final exam which is also timed (50%) and labs and a project (40%) and quizzes from the video lectures (10%).

Graduate student grades will be based on the timed midterm exam; the comprehensive timed final exam (50%), labs and a project (35%), quizzes (10%), and 1 extra assignment (5%).

Lab deliverables are digital products and need to be submitted within MyCourses, under the assignment tool as PDF document by the due date. Labs submitted one day late are counted 10% off. After 2 days late labs can only be made up with a documented excuse. Please contact the instructor prior the due date. Late labs will not be graded (unless an extension is granted by the instructor). Late quizzes will not be accepted and can't be submitted after due date. The lowest quiz grade will be dropped at the end of semester. Students can not make up missed exams without emergency medical documentation or a letter from a dean.

Quizzes

Weekly quizzes **will be timed** (10 minutes) and will cover the material in the **reading and lecture** for that Module.

Exams

All exams will be a combination of question types, but the majority of questions will be objective-based. **Exams will be timed.** You will not be able to answer questions once time has expired. **Make sure that during an exam you save your each individual answer as you proceed.** Also, when you sit down to take an exam; please make sure that you are in a position free from distractions. Remember that once you start the test, it has to be finished in the specified time period unless there is a documented emergency. Please, prepare for all exams like you would in a regular classroom setting. Exams are **closed-book** and you will not have enough time to look up each item. If there are any problems taking the exam (loose power, internet crashes, etc.), please contact the instructors immediately and indicate what type of problem is occurring. The decision to allow a retake will be based on a comparison of the time that the exam was interrupted with the time when the student emailed the instructor and verification of what happened.

Lab Exercises

General: Each lab is worth 10 points. Labs should be turned in by the due date.

Lab Reports: After completing each lab, students will submit a lab report. The lab reports should be uploaded to the assignment drop box in the myCourses website, as a **PDF file attachment.** The drop box is available in each learning module as well as under the assignment tool on the left hand course menu. Many free PDF file converters are available for download from the internet. It is the student's responsibility to make sure the file opens on the instructor's computer. In other words, once you have converted your document to PDF format, it is a good idea to open the file and ensure that everything is displayed how you want it. The total length of the written part of the lab report should be about a page or two. If students would like to have additional information, such as screen captures, or other data they would like to keep for their personal use later, they should be kept in a separate document and should not be submitted it with your lab report. Lab reports should not exceed 5 pages, and should not include large amounts of extra material. The **format** for the lab report should include:

1) Purpose/Goal: In your own words explain the purpose of completing the lab. Why are these tasks important to know? This section should be **one paragraph** in length.

2) Methods and Results Synopsis: This section should, **in your own words**, explain methods and results. Explanations may include responses to the following questions: What does the map show? What are the salient features or results? What does this table describe/show, and why is it important? This section should be **one paragraph** in length.

3) Figures: May include maps, screen captures, tables and graphs. Make sure that these figures have good resolution and are large enough to clearly show the lab objectives. If not, they will not be graded.

4) Questions: Include both the question and the answer that are required in a specific lab. To make answering the questions easier make sure you read all the questions first

before starting the lab. Most labs have the questions imbedded within the body of the lab text at the correct place, but some may not.

Lab Bulletin Post: If you have a comment/problem/solution to a problem for a particular lab, please post it on the **Discussion Board** under the topic "Lab x". Other students who might have a similar problem can read this post, and that may help them resolve it. Also, if you have a problem with a lab and the instructor is not available (say it's 2 am), perhaps a classmate will be reading the post and might be able to provide some assistance at that immediate time.

Do not wait until the last minute to do labs or projects. There will be no sympathy due to computer or network failures that are beyond your control. Many times problems you have with your software may take an email exchange between the student and instructor to get corrected, and this takes time. If you wait till the last minute, there might not be enough time to resolve it. When asking instructor questions, it may be helpful to include basic information about the operating system you are using, version of the software, and a screen capture of the error message or problem you are having.

Civility Policy

All class members deserve to be treated with dignity and respect. Instructors reserve the right to remove inflammatory or prejudicial comments without prior notification, and take disciplinary action as needed.

Student Support Services

If you have a disability that requires special accommodation, please contact the instructors as well as the Office of Student Support Services within the first two weeks of class online at <http://www.sss.msstate.edu> or via phone at (662) 325-3335.

Student Honor Code

Mississippi State University has an approved Honor Code that applies to all students. The Honor code covers plagiarism, or the using of material, ideas, information, languages or writings from other sources without proper acknowledgement of the original source, this includes copying a source even if the source is cited, or copying of someone else's work and submitting it as the students own work, on papers, exams, or any other assignment. Cheating will not be tolerated and punitive measures will be enforced according to MSU policy. Author citations must be included for all written reports and assignments and plagiarism is considered to be cheating and will result in failure of the course, cheating on an exam will also result in failure of the course.

The Honor code is as follows:

"As a Mississippi State University student I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do."

Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code. For additional information please visit: <http://www.msstate.edu/dept/audit/1207A.html>

Basic rules for online communication:

1. Remember that you're exchanging ideas not with a computer but with other people.
2. Do not shout (type in all caps). It is usually not received well.
3. Do not flame (send angry or confrontational emails). Discussions and debates should remain calm and respectful. Do not say anything that you would not say to someone's face.
4. Respect others' privacy. Do not forward a personal messages sent to you. Remember that you do not have the benefit of facial expressions or gestures etc.
5. Read through your posts as if you were the recipient.
6. Be sure that humor or sarcasm is obvious
7. Be considerate of others' time.
8. Be forgiving of others' mistakes. Some individuals may be less experienced than you are.
9. No personal postings (i.e. My band is playing at Rick's Friday night. Hope you'll come).
10. No internet acronyms. Everything should be communicated in Standard English.