Principles of GIS
Fall 2012
Distance Learning:

Instructors:
Dr. Shrinidhi Ambinakudige (Co- Instructor):
Dr. John Rodgers (Developer):
Athena Owen Nagel (Developer and Co-Instructor):

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 ITS Help Desk at Help@distance.Msstate.edu or call 662-325-0276.
- For general inquiries about MSU, the program or the Geospatial Certificate email Joy Bailey at jbailey@distance.msstate.edu MSU Bookstore (662) 325-1576 or 325-2249
- Geosciences Fax (662) 325-9423
- Textbook = Introduction to GIS, 6th Edition (5th is okay too) by K.T. Chang.
- Software: ArcGIS, Version 10 (ArcGIS 9.3 is okay, but not ideal)
  - If you have trouble getting the software, please let one of the instructors know.

Purpose and Goals of the Course:
This course is designed to introduce the theories and concepts of geographic information systems (GIS) along with providing hands-on experience using GIS software. The course will be divided into two parts, lecture and lab. The combination of these two will provide the student with a solid understanding of GIS and what it can do. After completing the course, students will be able to apply for entry-level GIS positions and will be prepared for more advanced Geospatial courses. This course also serves as the GIS requirement for the Mississippi State University Geospatial Certificate program.

Method of Instruction:
The course will be administered through the MyCourses website (http://mycourses.msstate.edu). The lectures, quizzes, grades, course information, contact with the instructors, etc. are all 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 tool (left menu bar). The streaming requires Quicktime®, which you can download for free at (www.apple.com/**quicktime**/download/). Video may also be accessed at mymedia.msstate.edu, you can log in there if necessary using your net id and password. If there are technical problems watching the videos on-line, please

email the instructors. The PowerPoint presentation for each of the lectures is available in the "Learning Modules" tool as well. To assist with the labs, video files of each lab exercise are available via video streaming from MyCourses. The lab documents (instructions and lab data) are available in the learning modules as zipped files under each respective learning module, titled "Lab #". You will need a software program, such as WinZip or 7-Zip, to extract the files from the 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 (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 Athena Owen Nagel, the main contact for the course at any time Monday through Friday from 9 am to 5 pm 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.

School Holidays this semester are:
- September 3rd ~ Labor Day
- October 4-5th ~ Fall Break
- November 21st to the 25th ~Thanksgiving

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 materials and by reviewing your notes. Each week's lecture will have an accompanying quiz. Quizzes are due by Wednesdays at midnight (11:59 pm) on the dates listed in this syllabus.

Extra Credit: No extra credit will be provided for students.

Communicating with the instructors:

In order for students to be a successful in this class, students must communicate with the instructor at some point. It is expected that the student emails to the instructor will clearly explain any problem or question and will include the name of the sender. The emails should also be somewhat formal, at least with regards to using grammar and spell-checking, and should be written in normal English (no texting format spellings).

Syllabus and Honor Code Quiz:

 Successful completion of a syllabus quiz will **be required** by all students before access will be granted to the rest of the course material; this is to make sure students are familiar with all policies and procedures of the course. The syllabus quiz does not count towards the overall grade. Information about the honor code is provided in a video format, and should be viewed by all students. Questions

about the honor code video will also be included in the syllabus quiz. Successful completion will be a score of 85% or higher. If 85% is not met, then the student may retake the quiz indefinitely until it is passed. Students who do not pass initially **must** contact the instructor to have the quiz reset.

The syllabus quiz is Due Aug. 27th and Software installation is due by Aug. 31st.

Lecture Topics and Readings (Subject to change):

Week	Dates Available	Date Due for Quizzes	Topic	Book Chapters (6th Edition)
1	08/20/2012	09/05/2012	Introduction to GIS	1
2	08/20/2012	09/12/2012	Maps Geodesy, Projections, & Coordinates	2
3	08/29/2012	09/19/2012	Spatial Data & Georelational Vector Models	3, 5 & 7
4	09/05/2012	09/26/2012	Databases and Geodatabases	8
5	09/12/2012	10/03/2012	Data Quality and Cartography	9
6	09/19/2012	10/10/2012	Raster Data	4 &6
7	10/03/2012	10/24/2012	Vector Analysis	11
8	10/10/2012	10/31/2012	Raster Analysis	12
9	10/17/2012	11/07/2012	Terrain Analysis	13
10	10/24/2012	11/14/2012	Watershed Analysis	14
11	10/31/2012	11/28/2012	Spatial Interpolation and Pattern Analysis	11.4 & 15
12	11/07/2012	12/05/2012	Geocoding and GPS	16
13	11/07/2012	12/05/2012	GIS Modeling and Conclusion	18

GIS Laboratory Schedule (Tentative):

Week	Start Date	Due Date	Lab
1	08/24/2012	09/07/2012	Introduction to ArcGIS
2	08/24/2012	09/14/2012	Maps and Projections
3	08/31/2012	09/21/2012	Queries and Spatial Joins
4	09/07/2012	09/28/2012	Heads up digitizing
6	09/14/2012	10/12/2012	Raster Transformations**
7	10/05/2012	10/26/2012	Vector Analysis
8	10/12/2012	11/02/2012	Raster Analysis
9	10/19/2012	11/09/2012	Terrain Analysis
10	10/26/2012	11/16/2012	Hydrologic Processing & Watershed Analysis
11	10/29/2012	11/30/2012	Spatial Analysis & Pattern Analysis
12	11/09/2012	12/05/2012***	Geocoding and GPS
13	11/09/2012	12/05/2012***	Into to GIS Modeling

*All Times and Dates are based on the Central Time Zone

** Note: There is no "Lab 5". Still only 12 labs, but lesson 5 doesn't have a lab.

***Final Lab is due on a Wednesday and Not a Friday to accommodate time for finals.

Grading:

Grades will be based on weekly quizzes, labs, a midterm, and a final exam. Labs will not be accepted late without a documented excuse. Students can not make up missed exams without a legitimate documented emergency excuse. The excuse must be approved by the instructor. You are allowed one drop quiz grade. The grade distribution and grading scale are as follows:

Undergraduate Grade
Quizzes (10 points each X 12) = 120 points
13 total quizzes but the lowest quiz grade is dropped
Midterm Exam = 120 points (Dates = 10/12/12 to 10/17/12)
Final Exam (not comprehensive) = 120 points (12/07/12 to 12/12/12)
Lab Exercises (30 points each X 12) = 360 points
Total Points = 720

Undergraduate Grade Distribution

Points	Grade
648 - 720	A
576 - 647	B
504 – 575	C
432 – 503	D
< 432	F

Graduate Grade
Quizzes (10 points each X 12) = 120 points
13 total quizzes but the lowest quiz grade is dropped
Midterm Exam = 120 points (Dates = 10/12/12 to 10/17/12)
Final Exam (not comprehensive) = 120 points (12/07/12 to 12/12/12)
Lab Exercises (30 points each X 12) = 360 points
Research Project = 100 points
Total Points = 820

Graduate Grade Distribution

Points	Grades
738 - 820	A
656 - 738	B
574 - 655	C
492 – 573	D
< 492	F

Weekly Quizzes:

Weekly quizzes **will not be** timed and will be over the material in the reading and lecture for that week. The quizzes are more like study guides, and they can be open note and open book. Sharing quiz information or answers with other students or receiving answers from another student will be considered as

cheating and disciplinary actions will be taken. **If your computer or internet crash during a quiz**, and you can't get it to re-open, then you need to email the instructor immediately. A decision to allow a retake will be based on a comparison of the time that the quiz was interrupted with the time when the student emailed the instructor. If you have any questions about if your quiz was successfully submitted please email the instructor. Late quizzes will have points deducted at a rate of 10% of the points per day. No late quizzes will be accepted after 2 days past the due date, without emergency documentation.

Exams:
All exams will be a combination of questions 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 repeatedly save your individual answers as you go***. 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 time period unless there is a documented emergency. Please prepare for all exams like you would in a normal class room setting. They are **not** open book and you will not have enough time to look up each item. If there are any problems taking the exam (lose power, internet crashes, etc.), please contact the instructors immediately and indicate what type of problem is occurring. **If your computer or internet crash during a exam**, then you need to email the instructor *immediately*. A 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 happen.
Note: Do not copy and paste on word for word from websites or other sources for study guides or other study material. As memorizing and reproducing this work on an exam is plagiarism and will be considered as an honor code violation. See the honor code section for more information.

Lab Exercises:
General: Each lab is worth 30 points. Instructions and data for the labs are available through the Learning Modules. Lab assignments and quizzes should be turned in by the due date and time. Late lab assignments and quizzes will have points deducted at a rate of 10% of the points per day. No lab assignments or lab quizzes will be accepted after 2 days past the due date, without emergency documentation.

*Please note that Lab video are only available for topics early in the semester as the semester goes it is assumed that students abilities will increase and they will be able to complete labs without the video showing them step by step.

Students must have a copy of ArcGIS 10 (earlier versions may suffice, contact instructor for details). You should be able to download a student evaluation copy of ArcGIS 10 – from mymeda, then request a license code, if you are having trouble doing that contact the instructors immediately. Please note that this

student evaluation copy can only be used for <u>educational purposes</u>. This is extremely important! Do not use the evaluation software for any private or business projects. That would be a violation of the software license agreement. ESRI has been extremely kind to allow us to send free copies of the software to students. If this goodwill gets abused, then we will have to require students to purchase software. That would greatly increase the cost of the program for yourself and other students.

Lab Deliverables: After completing each lab instructions, students will **(a)** submit maps, tables, and/or graphs to an assignment drop box in MyCourses and **(b)** take a lab quiz through the MyCourses Assessment. The lab assignments are worth 18 points and the lab quizzes are worth 12 points. The lab quizzes are based on results from the lab steps or on functionality of the software.

- The lab assignments must be uploaded as a **PDF** file attachment. For the assignments, export the final maps from ArcGIS as a JPEG and import them as a figure in a word-processing program (e.g. "MS WORD"). Add the necessary text (see individual lab instructions for what is required). Then save the file as PDF. MS Office 2007 and 2010 have the capability to convert to PDF by going to File\Save As and changing the file type to "PDF". Older versions of Word may require a PDF-converter, such as "Cute PDF" that are free to download from the web.   For instructions on uploading the assignments, see the introductory video. *It is the student's responsibility* to make sure the file opens on the instructor's computer – PDF's are the most stable file format for universally opening and viewing. ***Points will be deducted for not submitting PDF.*** Do not submit "Open Office" files, as these seldom work via MyCourses. If you want to take an assessment The assignments will be open for 2 business days past the deadline, but late submissions will have 10 % of the points deducted per day including weekends and holidays.

- Lab Quizzes: Quizzes are located in the MyCourses Assessment tab. Lab quizzes will be can be taken late for 2 business days after the deadline, but points will be deducted for lab quizzes submitted after the deadline including weekends and holidays. If you wish to do an assessment late you must email the instructor and have the quiz reopened to you. The duration of the lab quiz is set to unlimited, so the quizzes can be started and stopped multiple times. If there are any problems with the quizzes (computer crash, internet stops working, quiz was accidentally submitted), please contact the instructor as soon as possible. ***Important:*** most of the labs have questions imbedded within the body of the lab at the correct place. You will likely need to read the questions before beginning the lab procedures. Also it is a good idea to answer the questions as they appear in the instructions instead of waiting until the end. If you wait to the end, you may likely have already completed a step that was being

questioned, which means that you may have to go back and repeat that step.

Lab Discussion 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 be stuck can read this post, and that may help them figure something out. Also if you are stuck and the instructor is not available (say it's 2 am), perhaps a classmate will be reading the post (since we know students don't sleep) and might be able to provide some assistance at that immediate time.

Do not wait until the last minute to do the labs. The labs may take several hours, depending on your computer and skill level, to complete. No sympathy will be given for lab projects that are started on the due date, regardless if the internet crashes. Many times problems that you have with your software may take an exchange of several emails between the student and instructor to get corrected. If you wait till the last minute there isn't time for this. When asking questions to the instructor it may be helpful to include what operating system you are using, which version of the software you are using, and a screen capture of the error or problem you are having.

Graduate Research Paper: Detailed instructions of the graduate research paper will be emailed to the graduate students on the second week of class. Please email the instructor if there are questions.

Civility Policy
At Mississippi State University civility between faculty and students is required during all communications. Similarly, all class members deserve to be treated with dignity and respect. Instructors reserve the right to remove inflammatory or prejudicial comments on bulletin posts or emails without prior notification, and take disciplinary action as needed. Slanderous emails to the instructor or other students may be referred to the Dean of Students for possible academic dismissal. It is highly recommended that you wait at least an hour before hitting the "send" button on an email that is highly emotional or is full of anger.

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. http://www.sss.msstate.edu/ or (662) 325-3335

Student Honor Code:
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

Mississippi State University has approved this Honor Code and it 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 sited, or copying of someone else's work and submitting it as the students own work, on papers, exams, or any other assignment. This included but is not limited to copying material to a study guide or other study materials and then reproducing that exact material on an exam from memory, or otherwise. 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 results in failure of the course. Any of the following are also examples of cheating that will not be tolerated. This list is examples and is not to be considered exhaustive. Copying and pasting from one's own study guide to a closed note/book exam, obtaining and/or possessing a copy of an exam, a quiz, an assignment, a lab, or other course material from a previous course offering. Taking exams, quizzes or other graded assignments while in or having been in communication with other students, this includes but is not limited to in mycourses, on skype, google+, facebook or other chats, on the telephone, or in person. In the event that cheating is believed to have occurred students may be asked to turn in hard copies or rough drafts of any and all work done in the course. As per the honor code it is also the obligation of the student to report any violation of the honor code that comes to their knowledge, to the course instructor or other authority. Please view the honor code video for more information.

Here are some basic rules for online communication:

1. Remember that you're not exchanging ideas with a computer but with other people.
2. Don't shout (type in all caps). It is not received well.
3. Don't flame (send angry or confrontational email). Discussions and debates should remain calm. Don't say anything that you wouldn't say to someone's face.
4. Respect others' privacy. Don't forward a personal message sent to you. Remember that you don't have the benefit of facial expressions or gestures etc.
5. Read through your own posts/emails as if you were the recipient.
6. Be sure that humor or sarcasm is obvious

7. Be considerate of others' time. Five to ten page single spaced emails may not be the most efficient use of time.
8. Be forgiving of others' mistakes. Some individuals may be less experienced than you are. Sometimes mistakes happen, if it is an error that might affect your grade, then the issue can be resolved without incident.
9. No personal postings (i.e. My band is playing at Rick's Friday night. Hope you'll come).
10. No internet acronyms (LOL). Everything should be communicated in Standard English.