EES 300 BASICS OF GEOGRAPHIC INFORMATION SYSTEMS

Dr. Roy Wilson **Environmental Earth Science**

Introduction

GIS is a computer system designed to analyze spatial problems. This is a multidisciplinary introductory course in GIS. You will learn how GIS helps researchers analyze problems in areas such as environmental management, business, and history. No prior GIS experience is required although you should be familiar with basic computer operation.

This is a compressed course and is self-directed. It requires the student to be self-motivated and to devote a minimum of fifteen to twenty hours each week to the course. If you cannot do this, you should not attempt it. You cannot wait until the day before assignments are due to begin working. This results in poor quality work and low grades. Set a regular weekly schedule and stick to it! If you find you cannot maintain the workload be sure to drop the course before the Saturday of the first week in order to receive a 100% refund. The drop rules are as follows:

Drop before Saturday of the first week – 100% refund; No record on transcript.
Drop before Saturday of the second week – No refund. Withdraw passing (WP) or withdraw failing (WF) posted to transcript.
Drop after Saturday of the second week – No refund. A-F grade posted to transcript.

You will receive a letter containing instructions on how to access the course on the web. If you have problems you should contact our computer support staff at webctsupport@easternct.edu. You may also call David Oyanadel at 860-465-5082. You should complete the tutorial on getting started with Vista before beginning the course.

This course meets GER Category V.C. Computer Competency and LAC Tier II Applied Information Technology

Objectives

1. Examine how digital resources are collected, stored, analyzed, and displayed.
2. Gain experience in using spatial analysis software.
3. Develop a logical approach to solving multi-disciplinary problems.
4. Compare information technologies in both abstract and concrete terms.
5. Employ specific information technology to manage existing information, solve problems, and communicate or create new ideas.
6. Explain the technical and ethical limits of information technology.

Required Text

ESRI. Getting to Know ArcGIS GIS. 2nd edition. ESRI Press. 2004. ISBN 1-58948-083-X.
Available in the university bookstore and various online sites (e.g. Amazon). Make sure you buy Getting to Know ArcGIS and not Getting to Know ArcView GIS. **Do not buy used copies!** The text includes the ArcView 9.2 software on the CD with a 180 day license. Even if the CD is still with the text the license has probably expired. You must have the software to complete the course.

Optional Text
Davis, Bruce E. GIS: A Visual Approach. Onward Press. 2001. ISBN 0-7668-2764-X.
This text is not required but will help you to understand the lecture topics and to access additional GIS material. I highly recommend that you obtain this text and read the applicable sections as you complete the course. Available in the university bookstore and various online sites (e.g. Amazon).

Course Components – Course component instructions are included in each topic folder on the course contents page. Click on the appropriate folder to access the instructions.

1. Lectures – The lectures cover facts and concepts relevant to each topic. You should listen to the lectures carefully and take notes. Access the lectures by clicking on the appropriate file in each topic folder on the course content page.
2. Study Questions – There is a set of 12-15 study questions for each topic. These are the facts and concepts you should learn from the lectures. The answers should be single-spaced and written in complete sentences. Most answers are from 1-3 sentences. Access the study questions by clicking on the appropriate file in each topic folder on the course content page.

3. Exercise Instructions – The exercises teach you the computer skills needed to use GIS. Access the exercise instructions by clicking on the appropriate file in each topic folder on the course contents page.

4. Assignment Submissions – Submit the assignments to the instructor by Monday midnight of each week. **LATE ASSIGNMENTS WILL NOT BE ACCEPTED. THIS MEANS THAT ANY MATERIAL SUBMITTED AFTER THE DUE DATE WILL RECEIVE A ZERO.** Access the exercise instructions by clicking on the appropriate file in each topic folder on the course contents page.

Discussions
There is a discussion tool on your course toolbar. The discussion is organized around a general section and the six topics and exercise sets we will cover. If you would like to contribute a comment, cite a newspaper article, television program, or personal experience please feel free to add a comment. You are not required to contribute but I have found that students often have interesting material or personal experiences which add to the class. Please check the discussion tool occasionally and see if any comments have been posted.

What You Should Do Each Week

1. Read the appropriate material in the textbooks.
2. Listen to the lecture and take notes.
3. Answer the study questions.
4. Complete the exercises. Print the screen showing the final view, chart, or table. Answer the exercise questions.
5. Submit the assignment before or on the due dates listed.

Questions
The fastest way to get questions answered is by e-mail. Use the e-mail tool to send questions and to attach assignments.

Syllabus – Click on the appropriate folder or file on the course content page to access the assignments
The course begins on Friday 31 August

Week	Topic	Reading Davis (Optional)	Due Date
1	Lecture 1. Introduction to GIS Lecture 1 Slides Lecture 1 Study Questions	Ch.1	Fri 7 August
	Ex 1 – Introducing GIS Ex 2 – Introducing GIS Desktop Ex 3 – Exploring ArcMap		
	Lecture 2. Data Structures I Lecture 2 Slides Lecture 2 Study Questions	Ch.3	
	Ex 4 – Exploring ArcCatalog Ex 5 – Symbolizing Features and Rasters		
2	Lecture 3. Data Structures II Lecture 3 Slides Lecture 3 Study Questions	Ch.4	Fri 14 August
	Ex 6 – Classifying Features and Rasters Ex 7 – Labeling Features	Ch.3	
	Lecture 4. Maps and Map Analysis Lecture 4 Slides Lecture 4 Study Questions	Ch. 11, Ch.5 131-144	
	Ex 8 – Querying Data Ex 9 – Joining and Relating Tables		
3	Lecture 5. GIS Data Lecture 5 Slides Lecture 5 Study Questions	Ch.2,5	Fri 21 August
	Ex 10 – Selecting Features by Location Ex 11 – Preparing Data for Analysis		
	Lecture 6. Data Quality Lecture 6 Slides Lecture 6 Study Questions	Ch.6	
	Ex 12 – Analyzing Spatial Data Ex 13 – Projecting Data in ArcMap	Ch. 7-11	

4	No Lecture	Fri 28 August

Ex 14 – Building Geodatabases
Ex 15 – Creating Features
Ex 16 – Editing Features and Attributes
Ex 18 – Making Maps from Templates
Ex 19 – Maps for Presentation

Grading

Study Questions – 40%
Exercises – 60%
Access the my grade tool to check on your grades. The grades will be posted within 3 days of submission.
Grade Scale (%)
93–100 A
90-92 A-
88-89 B+
83-87 B
80-82 B-
78-79 C+
73-77 C
70-72 C-
68-69 D+
60-67 D
<60 F

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact the Office of Disability Services at 860-465-5573. To avoid any delay in the receipt of accommodations, you should contact the Office of Disability Services as soon as possible. Please understand that the instructor cannot provide accommodations based upon disability until an accommodation letter is received from the Office of Disability Services.

Plagiarism

Students must prepare and submit all written work individually. Claiming other's work as your own is unethical and will result in a failing grade. This includes cut-and-paste operations from previously written reports, retrieval of essays (or portions of essays) from web sites, and improperly citing the work of others. Eastern's policy on plagiarism may be reviewed at http://www.easternct.edu/smithlibrary/library1/plagiarism/plagiarism.htm.