PROFESSOR INFORMATION

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COURSE DESCRIPTION AND PURPOSE

In this course, students will study and analyze the various concepts of GIS: Data input, data analysis and management, and spatial project design. Students will also study the applications of GIS through lectures, tutorials, outside reading, discussions, homework, practical exercises and a final project.

COURSE OBJECTIVES

The primary objective of the course is to give students an understanding of the concepts of GIS. By the end of the semester, students should:

- Understand the concepts of data input, mapping, and output related to GIS;

- Understand the selection, querying and spatial joins of GIS data

- Understand spatial data analysis and interpretation of this data;

- Understand spatial data models including vector and rasters;

- Understand coordinate systems, georeferecing and projections

- Understand the nature of spatial databases, including data management;

- Understand the various applications of GIS in data creation and editing.

- Select a GIS data input method based on available sources and user requirements;

- Design GIS project and learn about the application of the spatial tools to environmental problems

IMPORTANT INFORMATION

Or   or

| 6th | 7th | 8th |
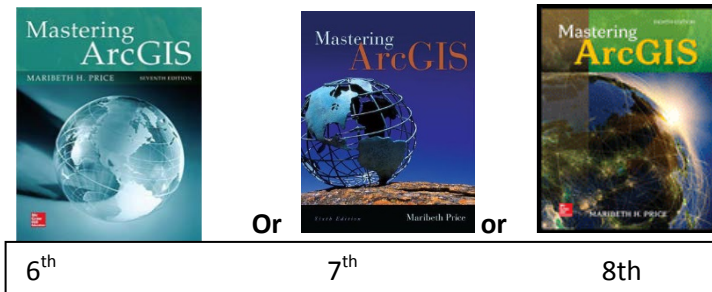
TEXTBOOK
Mastering ArcGIS with Video Clips DVD-ROM
by Price, Maribeth
Edition: 6th or 7th or 8th

8th edition
ISBN13: 9781259929656
ISBN10: 1259929655

7th edition
ISBN-13: 978-0078095146
ISBN-10: 007809514X

6th Edition
ISBN-10: 0077826264
ISBN-13: 9780077826260

Format: Spiral Bound
Publisher(s) McGraw-Hill

You may purchase your textbook online at the FIU Bookstore.
The text book comes with exercises and data to do the exercises. It also contains video clips.
The DVD distributed with the book contains two types of videos. The Tutorial Videos demonstrate each step of the tutorial. They are numbered in the text for easy reference. The Skills Reference Videos show how to perform generic tasks, such as deleting a file or changing symbols on a map.
The videos are intended as a supplement and as an alternate learning strategy for those who find following a series of written steps cumbersome. It would be extremely tedious to watch all of them. Instead, try using them in the following situations:

- When you don't completely understand the written instructions.

- If you have trouble finding the correct menu or button.

- When a step doesn't seem to work properly.

- When a reminder is needed to do a previously learned skill in order to complete a step.

- Whenever you find that watching the videos enhances learning.

Other Readings:

For your reference you may want to read material from the following books: Star & Estes, Geographic Information Systems-An Introduction, Clarke, Getting Started with Geographic Information Systems (3rd edition), DeMers, Fundamentals of Geographic Information Systems, Huxhold, An Introduction to Urban Geographic Information Systems, Hutchinson & Daniel, Inside ArcView GIS, Theobald, GIS Concepts and ArcView Methods, Wright & Bartlett, Marine and Coastal Geographic Information Systems, Star & Estes & McGwire, Integration of Geographic Information Systems and Remote Sensing. They are in the library or available on loan. If you cannot find them contact the professor.

Web Resources:

The ESRI site (www.esri.com) is full of information on GIS and ESRI products such as ArcView we will be using in this class.

TEACHING METHODOLOGY

This is a hands-on course where students will learn the different GIS tools through various exercises, and assignments. To equip the students with the concepts and principles of GIS, students will be exposed to the methods and spatial analysis techniques behind each exercise and assignment.

Students are encouraged to interact with each other. It is very helpful to work together in this course.

This course utilizes the following tools:

**ArcGIS 10.4 software.

***A one year license ArcGIS 10.4 software will be provided. Please read below on downloading and installation of the ArcGIS 10.4. This software is essential to do the exercises and assignments.

Version 10.2 or higher- ArcGIS for Desktop Student Trial software Instructions

A. Before you install ArcGIS for Desktop

1. Check our system requirements to make sure your computer has the hardware and software required for the trial.

B. Activate your authorization code

2. Visit **www.esri.com/StudentEdition** to begin the process of activating and downloading your ArcGIS for Desktop Student Trial software.

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3. Log in using your Existing Esri Global Account, or Sign-up for a new Esri Global account, if necessary.

4. Enter the authorization code and click Activate ArcGIS.

If you need to download ArcGIS for Desktop, proceed to step 5.

If you received the ArcGIS for Desktop software from your instructor or license administrator, or will be installing from a network server, proceed to step 10.

5. Click ArcGIS 10.4 for Desktop.

C. Download and install ArcGIS for Desktop Student Trial

6. If necessary, download the ArcGIS Uninstall Utility and uninstall previous versions of ArcGIS Desktop or Server. The software cannot be installed on a computer that has a previous version of ArcGIS for Desktop or ArcGIS for Server installed. It's OK if the computer has ArcGIS Explorer installed.

7. If necessary, install the Microsoft .NET Framework (version 3.5 Service Pack 1 or higher).

8. Determine the location for the ArcGIS for Desktop software you wish to install and click the Download button. You can also download the Tutorial Data, if desired.

9. Double-click on the *.exe file to extract the installation files. [download the 10.4 version]

10. Locate and run Setup.exe to install ArcGIS for Desktop. The "Complete" installation is recommended.

11. After the files are installed, the Authorization Wizard will open and prompt you to choose a product to authorize; select "ArcGIS Desktop Advanced (Single Use)" and click continue.

12. The Authorization Wizard will prompt you for an authorization code; enter your activated code. Follow the prompts and the software will authorize and be ready for use. **Note:** leave the default option for the software extensions selected; they will be authorized automatically.

Support for the ArcGIS Desktop Student Trial is available at esri.com/trialhelp.

(Software code available upon request from course instructor.)

Grading

Letter	Range	Letter	Range
A	90 - 100	C	70 - 77
B+	88 - 89	D+	68 - 69
B	80 - 87	D	55 - 67
C+	78 - 79	F	<55

Course Requirements	Max Points	Weight
10 End of chapter exercises	100	10%
3 Home works	150	15%
Project Proposal	100	10%
Final Power point presentation	300	30%
Final Exam-(Home take)	250	25%
5 Discussions	100	10%
Total	1000	100%

Exercises: work on assigned exercises in class and save the map document to show me.

Homework: There are three home works. Submit the printed answers of the homework

Discussions: Five discussions will be assigned. Watch the videos and write your own view and impression about the role of GIS as presented in the respective videos. Use at least 8 sentences and submit the hard copy.

Project: The GIS final project accounts 40% of your final grade. You will identify a topic for which you will use GIS and solve a problem you identified. The use of GIS will be clearly demonstrated in which you will add value to the raw GIS data through spatial analysis techniques you will be learning in this course. We have a project directory in the course folder that contains sample proposals, sample presentations, instructions and template on power point presentations.

Home take Exam: You will be given a home take exam to work on and return the hard copy on the last day of class

An Incomplete grade will only be given out in accordance with FIU grading guidelines.

Cheating on exams and plagiarism in written assignments are very serious forms of academic misconduct and will not be tolerated. University policies for academic misconduct are very strict, and the results of cheating and/or plagiarism can be a failing grade or ultimately expulsion from the University.

WEEKLY SCHEDULE

Date	Tasks	Exercise/Activity
Week 1 Jan. 08-13	Review the How to Get Started information located in the Course Content Review GIS and spatial Data (Ch 1 in 7th ed)	• Work on end of Chapter tutorial
Week 2 Jan. 15-20	Mapping GIS Data (Ch 4 in 7th ed)	• Work on end of Chapter tutorial • Exercise 1
Week 3 Jan. 22-27	Presenting GIS Data (Ch 5 in 7th ed)	• Work on end of chapter tutorial • Exercise 2 • Discussion 1
Week 4 Jan. 29-Feb. 03	Attribute Data (Ch 6 in 7th ed)	• Work on end of Chapter tutorial • Exercise 3
Week 5 Feb. 05-10	Queries in GIS (Ch 8 in 7th ed)	• Work on end of Chapter tutorial • Exercise 4

Date	Tasks	Exercise/Activity
		• Discussion 2
Week 6 Feb. 12-17	Spatial Joins (Ch 9 in 7th ed)	• Work on end of Chapter tutorial • Exercise 5 • Discussion 3 • Homework 1
Week 7 Feb. 19-24	Map Overlay and Geoprocessing (Ch 10 in 7th ed)	• Work on end of chapter tutorial • Exercise 6
Week 8 Feb. 26- Mar. 03	Raster Analysis (Ch 11 in 7th ed)	• Work on end of chapter tutorial. • Exercise 7 • Discussion 4
Week 9 Mar. 05-10	Coordinate Systems (Ch 3 in 7th ed)	• Exercise 8 • Discussion 5 • Homework 2
Spring Break March 12-17, 2018		
Week 10 Mar. 19-24	Basic Editing (Ch 7 in 7th ed) Project overview presentation by students (5 minutes) Use provided template power point slides in the project folder of	• Work on end of Chapter tutorial • Exercise 9 • Submit 1-2 pages project proposal

Date	Tasks	Exercise/Activity
	the course	
Week 11 Mar. 26-31	Editing and Topology (Ch 12 in 7th ed)	• Work on end of Chapter tutorial
Week 12 Apr. 02-07	Geodatabases (Ch 13 in 7th ed)	• Exercise 10 • Homework 3
Week 13 Apr. 09-14	Project completion and presentation preparation	• Work on the project individually
Week 14 Apr. 16-21	Presentation of the final project Home take Exam	• Submit home take Exam in class

7th and 8th edition	6th edition
Chapter 1: GIS Data	Ch 1
Chapter 2: Managing GIS Data	
Chapter 3: Coordinate Systems	Ch 11
Chapter 4: Mapping GIS Data	Ch 2
Chapter 5: Presenting GIS Data	Ch 3
Chapter 6: Attribute Data	Ch 4
Chapter 7: Basic Editing	Ch 12
Chapter 8: Queries	Ch 5

Chapter 9: Spatial Joins	Ch 6
Chapter 10: Map Overlay and Geoprocessing	Ch 7
Chapter 11: Raster Analysis	Ch 8
Chapter 12: Editing and Topology	Ch 13
Chapter 13: Geodatabases	Ch 14
Chapter 14: Metadata	Ch 15