COURSE SYLLABUS
GIS 3043 Introduction to Geographic Information Systems

Instructor:	Prof. Assefa M Melesse	Phone:	(305) 348-6518
Office:	AHC 5-390 (MMC)	Fax:	(305) 348-3877
Office Hours:	By Appointment	E-mail	Please use Blackboard course messages
Website:	www.fiu.edu~/melessea		

COURSE DESCRIPTION

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 and practical exercises.

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

MAJOR & CURRICULUM OBJECTIVES TARGETED

At this time, the professor has not requested the insertion of any information into this section. Please contact the professor directly if you have any questions.

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.

POLICIES

Please review the policies page as it contains essential information regarding guidelines relevant to all courses at FIU and additional information on the standards for acceptable netiquette important for online courses.

TECHNICAL REQUIREMENTS/SKILLS

One of the greatest barriers to taking an online course is a lack of basic computer literacy. By computer literacy we mean being able to manage and organize computer files efficiently, and learning to use your computer's operating system and software quickly and easily. Keep in mind that this is not a computer literacy course; but students enrolled in online courses are expected to have moderate proficiency using a computer. Please go to the "What's Required" page to find out more information on this subject.

CLASS LOCATION

The instruction for this class is fully online. Therefore the lectures, interactive group work, discussions, and other activities will be fully online inside the FIU Online virtual environment.

This course utilizes the following tools:

1. ArcGIS 10.3 software.

This course utilizes the following tools:

**ArcGIS 10.3 software.
***A one year license ArcGIS 10.3 software will be provided. Please read below on downloading and installation of the ArcGIS 10.3 tool. This software is essential to do the exercises and assignments.

**If you have an Apple computer you should be aware that the ArcGIS software required for this class does not work on a Mac unless you have a windows operating system installed on your Mac. You could alternatively use the GIS lab on campus to complete your assignments for this class. Contact the instructor for more information. If a resolution cannot be found within the first week if class, I recommend taking this class in person instead.

Please visit our technical requirements page for additional information.

Version 10.3 - 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.

---

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 10.3 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 the corresponding .exe file to extract the installation files.

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.)

2. Blackboard

3. AdobeConnect.

For detailed information about the technical requirements, please **click here**.

ACCESSIBILITY AND ACCOMODATION

For detailed information about the specific limitations with the technologies used in this course, please click here.

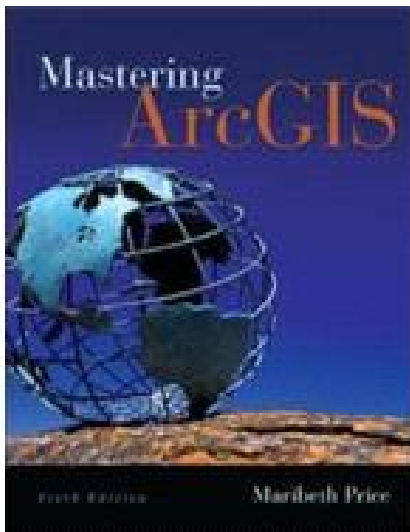For more information about Blackboard's Accessibility Commitment, click here.

For additional assistance please contact our Disability Resource Center.

COURSE PREREQUISITES

COURSE PREREQUISITES

For information about prerequisites, **click here**.

IMPORTANT INFORMATION

TEXTBOOK

Mastering ArcGIS with Video Clips DVD-ROM

by Price, Maribeth

Edition: 6th

ISBN13: 9780077826260

ISBN10: 0077826264

Format: Spiral Bound

Pub. Date: 3/21/2013

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.

EXPECTATIONS OF THIS COURSE

This is an online course, meaning that most of the course work will be conducted online. Expectations for performance in an online course are the same as for a traditional course; in fact, online courses require a degree of self-motivation, self-discipline, and technology skills that can make them more demanding for some students.

Students are expected to:
- Review the how to get started information located in the course content
- Introduce yourself to the class during the first week by posting a self introduction in the appropriate discussion forum
- Participate in the discussion
- Take the practice quiz to ensure that your computer is compatible with Blackboard
- Interact online with instructor/s and peers
- Review and follow the course calendar
- Log in to the course 3-4 times per week
- Respond to messages within 1 day
- Submit assignments by the corresponding deadline
- At the end of each chapter are tutorials. Students are REQUIRED to do the tutorials, which are key to do your exercises and assignments.

The instructor will:
- Log in to the course 2-3 times per week
- Respond to discussion boards within 1 day
- Respond to messages within 1 day
- Grade assignments within 5 days of the assignment deadline

1. This is a fast paced course. To do well students need to log in to the course each week and finish the exercises/homework/tasks on time. The material builds upon itself in complexity so if you miss a week of class, it will be a challenge to catch up.
2. Students are encouraged to interact with each other. It is very helpful to work together in this course except quizzes and exams.
3. An Incomplete grade will only be given out in accordance with FIU grading guidelines.
4. 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.

COURSE COMMUNICATION

Communication in this course will take place via Messages.

Messages are a private and secure text-based communication that occurs within a Course and among Course members. Users must log on to Blackboard to send/receive/read messages. The Messages tool is located on the left side Course Menu (Blackboard user interface). It is recommended that students check their messages routinely to ensure up-to-date communication.

QUIZZES

In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your responsibility to make sure your computer meets the minimum hardware requirements.

- The course will have 6 quizzes (graded) prepared from the chapter power points of the text book.
- They are 10 multiple choice questions
- One quiz with lowest grade will b dropped
- Quizzes' are available from Tuesday 12:00AM-Wednesday 11:59pm the week they are assigned
- Quiz duration (20 minutes) and can be taken twice
- Students can see the results of each quiz after the availability period has ended

EXCERCISES

- There will be 10 exercises assigned from the end of the chapter exercises
- They are due on Sunday 11:59PM the week they are assigned
- They need to be submitted in word document in the assignment dropbox
- Data needed to do the homework is provided from the text book.

EXAMS

- There will be 2 exams based on the chapter lectures we covered
- Work on the review questions of the chapters to prepare for the exam
- The exams are multiple choices and timed for 60 minutes
- They will be opened for 24 hours

DISCUSSIONS

- There will be 5 discussions in this course
- They will be assigned and you are required to respond and participate. Your responses will be at least 10 sentences.
- Response will be opinions and what you have understood from the GIS related video and study that will be available for the discussion
- They will be closed on Sunday 11:59PM the week they are assigned

ADOBE CONNECT PRO MEETING

The Adobe Connect Pro Meeting is an online meeting room in which you can interact with your Professor and fellow students by sharing your computer, screens or files, chat, broadcast live audio and take part in other interactive online activities. We will be utilizing this tool to conduct discussions with the instructor about Office hours, exam reviews, exercises, assignments, etc.

Meetings dates will be posted as needed.

Requirements for using Adobe Connect Pro Meeting:

1. Disable any window pop-up blocker.

2. Adobe Flash Player is required to successfully run your Connect Pro meeting. You can test your computer to make sure that you are set up with all of the tools you will need to participate in the meeting.
3. Use of a combination headset and microphone with USB connection is recommended to ensure quality sound and reduce technical difficulties.

   Please click here for additional information on Adobe Connect (Tutorials & Help).

GRADING

COURSE REQUIREMENTS	Max points	WEIGHT
6 Quizzes (one quiz with the lowest grade will be dropped)	100	20
10 End of chapter exercises	100	20
Exam 1 Exam 1 (Chapters 1-6)	100	20
Exam 2 (Chapters 7, 8, 11, 12 and 14)	100	20
Practice quiz (Bonus 1)	5	Bonus
Introduce yourself (Bonus 2)	5	Bonus
5 Discussions	100	20
Total	**500**	**100%**

Letter Grade

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

COURSE CALENDAR

Part 1: GIS Data and Maps (May 08-June 04)

> **GIS Data**
>
> **Mapping GIS Data**
>
> **Presenting GIS Data**
>
> **Attribute Data**

Part 2: GIS Analysis (Jun 05-Jul 02)

> **Queries**
>
> **Spatial Joins**
>
> **Map Overlays and Geoprocessing**
>
> **Raster Analysis**

Part 3: Data Management (Jul 03-July 30)

> **Coordinate Systems**
>
> **Basic Editing**
>
> **Geodatabases**

WEEKLY SCHEDULE DATE	TASKS	Exercise/Quiz/Exam
Week 1 May 08-May 14	Review the How to Get Started information located in the Course Content Review Introduce yourself to the course Complete practice quiz Chapter 1 GIS and spatial Data Chapter 1 Power point	Work on end of Chapter 1 tutorial
Week 2 May 15-May 21	Chapter 2. Mapping GIS Data Chapter 2 Power point	Work on end of Chapter 2 tutorial Quiz 1 on Chapter 1 Exercise 1 on Chapter 1
Week 3 May 22-May 28	Chapter 3. Presenting GIS Data Chapter 3 Power point	Work on end of chapter 3 tutorial Quiz 2 on Chapter 3 Exercise 2 on Chapter 2 Discussion 1
Week 4 May 29 June 04	Chapter 4. Attribute Data Chapter 4 Power point	Work on end of Chapter 4 tutorial Quiz 3 on chapter 4 Exercise 3 on Chapter 3
Week 5 June 05-11	Chapter 5. Queries in GIS Chapter 5 Power point	Work on end of Chapter 5 tutorial Exercise 4 on Chapter 4 Discussion 2
Week 6 Jun 12-18	Chapter 6. Spatial Joins Chapter 6 Power point	Work on end of Chapter 6 tutorial Quiz 4 on Chapter 6 Exercise 5 on Chapter 5 Discussion 3
Week 7 June 19-25	Chapter 7. Map Overlay and Geoprocessing Chapter 7 Power	Work on end of chapter 7 tutorial Exam 1 (Chapters 1-6) Exercise 6 on Chapter 6

Week 8 June 26-July 02	Chapter 8. Raster Analysis Chapter 8 Power point	Work on end of chapter 8 tutorial Exercise 7 on Chapter 7 Discussion 4
Week 9 Jul 03-09	Chapter 11. Coordinate Systems Chapter 11 Power point	Quiz 5 on Chapter 8 Exercise 8 on Chapter 8 Discussion 5
Week 10 Jul 10-16	Chapter 12. Basic Editing Chapter 12 Power point	Work on end of Chapter 11 tutorial Quiz 6 on Chapter 11 Exercise 9 on Chapter 11
Week 11 Jul 17-23	Chapter 14. Geodatabases Chapter 14 Power point	Work on end of Chapter 12 tutorial Exercise 10 on Chapter 12
Week 12 July 24-28	Exam 2 (Chapters 7, 8, 11, 12 and 14)	

Academic Misconduct

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

Weekly Learning objectives

Week 1

In this week you will be able to cover and know the GIS concepts and GIS data input to GIS analysis

You will also use the ArcGIS tools and interface

Week 2

This week you will examine and learn

- how to map GIS data
- displaying and classifying data

Week 3

This week, you will

- identify GIS data presentation methods
- review basic elements of map design, choosing symbols and coordinate systems
- use ArcGIS interface for map making

Week 4

This week students must demonstrate that they can

- create and analyze attribute data
- use tables, queries, database management systems
- differentiate among Joining, relating and summarizing tables

Week 5

Students will be expected to

- know the concepts of querying data
- distinguish the different types of queries and selections
- Manage results of queries

Week 6

The specific learning objectives of week 6 will help students to

- examine and understand the concept of spatial joins
- identify cardinality and types of spatial joins
- examine and understand feature geometry, coordinate systems and distance joins

Week 7

In week 7, students are expected to

- identify the different types of map overlays
- Use the different geoprocessing tools
- Evaluate and use Arc Toolbox

Week 8

In week 8, students are expected to

- Identify and examine raster data and raster analysis
- understand and use the spatial Analyst tool
- analyze raster data and create new outputs

Week 9

In week 9, student should be able to

- distinguish the different types of coordinate systems
- Distinguish between map projections, project, datum and coordinate system types
- Distinguish between geographic and projected coordinate systems
- Know about the data and projection information transformations

Week 10

   The learning objectives for week 10 are to
- Identify and know the procedures of data creation
- Understand and practice the data editing concepts

Week 11

In week 11, the specific objectives are to

- Examine and learn about the structure of geodatabase
- Design and create geodatabase
- Create feature datasets

Week 12

Final exam