

MATC Summer Syllabus # 1: NatSci 142-251:
Intro. to Geographic Information Systems 3 credits

MW: 5:30-8:50 P.M. Room C478 Main Campus

Start: 6-11, End: 7-25: 7 weeks. Instructor: Dr. Wayne Schlipp

Office hours: 4:30- 5:30 PM MW, or by appt.

Main Campus Office: C472

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Required Textbook:

Getting To Know ArcGIS Desktop: Basics of ArcView, ArcEditor, and ArcInfo.

2nd Ed. By Ormsby, Napoleon, Burke, Groessl, and Feaster

ESRI Press ISBN

This Syllabus is tentative and subject to change as we progress in our study.

Week Date Subject

GETTING STARTED WITH MAPS AND DATA

- 1 Introduction: Class Policies. What is the significance of GIS?
 Introduction to *ArcView 9.x* and *ArcDesktop*.
 Chapter 3: **Exploring ArcMap**: Displaying map data, Navigating a map,
 Looking at feature attributes.
 Chapter 4: **Exploring ArcCatalog**: Browsing map data, Searching for
 map data, Adding data to ArcMap. **Exam 1**

DISPLAYING DATA

- Chapter 5: **Symbolizing Features and Rasters**, Changing
 symbology, Symbolizing features by categorical attributes, Using Styles
 and creating layer files, Symbolizing rasters.
 2 Chapter 6: **Classifying Features and Rasters**: Classifying features by
 standard methods, Classifying features manually, Mapping density, Using
 graduated and chart symbols.
 Chapter 7: **Labeling Features**: Using dynamic labels, Setting rules for
 placing labels, Using interactive labels and creating annotation. **Exam 2**

GETTING INFORMATION ABOUT FEATURES

- Chapter 8: **Querying Data**: Identifying, selecting, finding, and
 hyperlinking features, Selecting features by attribute, Creating reports.
 3 Chapter 9: **Joining and Relating Tables**: Joining tables, Relating tables

ANALYZING FEATURE RELATIONSHIPS

- Chapter 10: **Selecting Features By Location**: Using location queries,
 Combining attribute and location queries.
 Chapter 11: **Preparing Data For Analysis**: Dissolving features, Creating
 graphs, Clipping layers, Exporting data,
 4 Chapter 12: **Analyzing Spatial Data** : Buffering features, Overlaying
 data, Calculating attribute values.
 Chapter 13: **Projecting Data In ArcMap**: Projecting data for display,
 Defining a projection.

CREATING AND EDITING DATA

- Chapter 14: **Building Geodatabases**: Creating a personal geodatabase,

- 5 Creating feature classes, Adding fields and domains.
 Chapter 15: **Creating Features**: Drawing features, Using feature construction tools
 Chapter 16: **Editing Features and Attributes**: Deleting and modifying features, Splitting and merging features, Editing feature attribute values

PRESENTING DATA

- 6 Chapter 17: **Geocoding**
 Chapter 18: **Making Maps Quickly**: Opening a map template, Adding x,y data to a map, Drawing graphics, on a map, Using the geography network with ArcMap
 7 Chapter 19: **Making Maps For Presentation**: Laying out a page, Adding a title, Adding a north arrow, a scale bar, and a legend, Adding final touches and setting print options. **Final Exam**
 Chapter 20: Modelbuilder

Reading Assignments: Reading assignments on specific topics are made one week in advance of lecture. I am going to assume that you will have read them prior to class time.

Handouts: Supplementary study material will be handed out as necessary.

Assignments: There will be several weekly map assignments/exercises related to our GIS activities (18 in all) Each assignment will have a due date, and because each lesson builds on the previous lesson, *tardy assignments will be discounted 20 % per week*. As the semester progresses, you will use the internet to acquire data, then use Arcview 9.x to analyze the data and print the finished map.

Exams: There will be 3 exams total. Dates will be announced.

Exam 1- Chapters 1-2

Exam 2- Chapters 1-7

Exam 3- Chapters 8-20

All exams will be true-false, multiple-choice, short-answer, and fill-in-the-blanks format. The tests will cover about 30% lecture and 70 % from the textbook. So, take good notes during lectures and stay ahead of the readings. **There will be No make-up Exams**. If you miss an exam you take a zero for that exam.

Grading Policies: Each test will be worth 100 points (300 points total)
 Homework/Map assignments are worth 200 points total

Total points used to figure your final grade will be on a 500 point scale.

Course Format: The course format has two parts: A brief lecture on GIS activities, followed by exercise lessons on ArcGIS 9.x software. We spend 7 weeks of class time familiarizing ourselves with GIS activities and ArcGIS 9.x software.

Course Objectives: At the end of this course, the student should have a working knowledge of introductory GIS software (ArcGIS 9.x) and be able to use various spatial data to address specific geographic questions related to location and scale. In addition, the student should have a working knowledge of physical geographic processes, including landforms, weather, climate, geologic processes, and how humans interact and affect specific environments and ecosystems.

Attendance is mandatory. Don't be tardy. I cannot instruct you if you are not here.

Remember that 90 % of success is showing-up!

Core Abilities:

- Apply appropriate reading, writing, speaking and listening skills to express information, ideas, and opinions.
- Maintain positive, productive relations with others through problem solving, conflict resolution and information sharing.
- Show respect for others diversity of values, cultural differences, and the environment.
- Possess and apply effective work habits and attitudes within an organizational setting
- Apply techniques of analytical thinking and effective decision-making skills
- Use appropriate technology to access information and perform tasks effectively and productively.
- Demonstrate mathematical and scientific competence

Expectations

Come to class on time and ready to work

Come prepared for all assessments

Participate in class projects and discussions

Help create a good learning environment

Standards for Academic Success

The department of Education requires colleges to develop and implement standards to evaluate a student's academic progress. MATC has fulfilled this obligation by the provision of a framework for students experiencing academic difficulty. Beginning this academic year, 2001-2002, new Standards for Academic Success will be applied to all students enrolled in certificate, diploma, apprentice, and degree programs. If students have failed to meet the Standards for Academic Success, students will receive written notification at the end of the semester. Determination of Academic Status is based on credits earned at MATC and has the following minimum standards:

- GPA of 2.0
- Course completion rate of 67% of credits attempted each term with grades of A, B, C, or D (W, U, and I are unacceptable).

Student Computer Use

All MATC facilities with computers and other technologies are intended for academic purposes only. The professional personnel in these locations have the right to inform students of inappropriate use of the technology. Continued inappropriate use will result in removal from the area and disciplinary action.

ADA Statement:

If you have a disability that impacts your classroom performance and wish to request an accommodation, contact the Center for Special Needs at (414) 297-6838. They may require documentation regarding your disability to enable them to comply with your request. Admission of a disability is voluntary and will be handled in a confidential manner. MATC does not discriminate against individuals with disabilities and fully complies with the Americans with Disabilities Act.

To ensure your academic success in this program, you are strongly encouraged to provide your instructor with a copy of the Instructor Notification Form from the Center for Special Needs.