Course Syllabus and Policy Requirement Statement

In order to access your course materials, you must agree to the following, by clicking the "Mark Reviewed" button below.

By checking the "Mark Reviewed" link below, you are indicating the following:

- You have read, understood, and will comply with the policies and procedures listed in the class syllabus, and that you have acquired the required textbook(s).
- You have read, understood, and will comply with class policies and procedures as specified in the online Student Handbook.
- You have read, understood, and will comply with computer and software requirements as specified in the Student Orientation Course.

BOR 6302:
Introduction to GIS

Course Description/Overview

Click this link for a printable version of the syllabus.

This course is about learning the fundamentals of developing maps associated with Homeland Security and Criminal Justice professionals and future managers. To accomplish this, the course materials are taken from a FEMA generated course for Emergency Managers. As noted in the course catalog:

"Geographic information systems (GIS) contain a powerful set of tools for data acquisition, management, query and display. This course provides students with a substantial foundation in the history of cartography and mapmaking. A second major emphasis of this course will merge both theoretical and historical information with hands-on practical training utilizing the basic tools provided with GIS software. Students will become familiar with the importance of metadata, as well as editing and updating metadata and how this is important to the success or failure of the dataset as a whole. (Credit may not be earned for this course and Criminal Justice 6302.)"

Prerequisites

The only prerequisite for this course is admission into one of the Department of Security Studies and Criminal Justice Graduate Programs.

As with all online courses, students must be able to operate a computer and have the necessary technical skills to navigate around a web page. Additional technical skills are not a prerequisite for this course, however, your computer must meet certain minimum requirements to operate the software associated with this class as noted below.

Course Bibliography and Required Readings:

Required Reading:

Essentials of Geographic Information Systems by Shin, Campbell, and Burkhart Version 2.1. Flat World: Boston MA. 2018. ISBN: 9781453390801.

Recommended Reading:

Introduction to Geographical Information Systems with ARCGIS- A Workbook Approach to Learning GIS by Michael Kennedy
Available at: https://ebookcentral.proquest.com/lib/angelo-ebooks/reader.action?docID=875846
:
Radke, S.L. and E. Hanebuth. 2008.
GIS Tutorial for homeland security.
ESRI Press. With software (ArcGIS 9.3) Redlands, CA.

Course Objectives

Objective One: To become conversant in GIS terminology and methodology.

Objective Two: To construct a GIS project related to Homeland Security or Criminal Justice.

Objective Three: To gain hands-on experience with industry leading GIS software.

Learning Outcomes

When you finish this course you should be able to:

1. Learn and participate in data acquisition from government distributors.
2. Explore common GIS software procedures.
3. Perform GIS software procedures independently in a real-world exercise through creation of a final project.
4. Demonstrate the ability to read and use GIS terminology and concepts in essay format.
5. Plan and design a graphical management workflow schema.

The design of this course is to offer a well-rounded introduction to the construction and use of a GIS from the perspective of emergency managers and homeland security professionals. While a GIS manager may not directly acquire and manipulate data, it is expected that management understand GIS methods and terminology to efficiently direct technicians and analysts. To emphasize this, your assignments will focus on your ability to fluently use GIS terminology and be able to organize a workflow and produce a useable product.

Students can expect to spend about 6 hours each week reading and working through the provided materials. There is no real outside reading during exercises unless provided as an interest item by the professor during the duration of the course. The lessons themselves take as long as the student will require to read the materials and watch or listen to media presentations.

Grading Policies

This course employs weekly discussions and a final project to measure student learning. As part of the discussions, students will be required to upload finished work products based on that lesson's exercises.

Assignment	Percent of Grade	Due
Exercises - graded as part of the discussion board grade.	30%	Bi-Weekly (every 2 weeks) beginning with Lesson 2.

Discussion Board	30%	Bi-Weekly (along with exercises).
Final Project	40%	Thursday Week 16

Assignment Description

Each lesson includes specific step-by-step exercises that students will complete and post in addition to their discussion board threads. The exercises are graded as a component of the discussion board and not as a separate item. Ultimately, the final two weeks of class will be used as time to create and submit a formal project dealing with the application of GIS software. The goal of this assessment tool is to develop and document GIS software skills.

The assignments in this course require that the student turn in their practice exercises as part of their discussion topics in the weeks in which the exercises are assigned. Failure to do so fundamentally detracts from that week's discussions. Therefore, late work will not be accepted. It is understood that in every life there comes the unforeseen, and in those instances, the professor will work with the student individually to either catch them up on their work or to complete exercises outside of class.

The final project is your chance to demonstrate the knowledge and skills you have acquired throughout the semester. You will be submitting documentation (maps, screenshots, workflow, etc.) of a fully developed GIS project. The scenario will be given to you in Lesson Eight. The goal of this assessment tool is to (1) demonstrate you have mastered the necessary GIS skills to work independently, (2) show that you can plan and execute a GIS project from a management perspective, and (3) communicate GIS methodology using appropriate terminology. A side benefit is that if you create a truly professional product you can add this project to your work portfolio.

Standards for assignments and papers can be found here: Standards.pdf.

Grades

Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale:

A = 90 – 100 %
B = 80 – 89 %

C = 70 – 79 %
F = 59 % and below.

While I do not enforce a strict policy on grammar, I do reserve the right to stop reading your paper if spelling errors, sentence construction, or grammar is below the minimum for a graduate course. If I stop reading a particular paper you have written, for reasons listed above, the paper will be returned to you with a failing grade.

The University policy on grades of "Incomplete" is that the deficiency in performance must be addressed satisfactorily by the end of the next long (16 week) semester or the grade automatically becomes an "F". Grades of "Incomplete" will only be awarded to students who have demonstrated sufficient progress to earn the opportunity to complete the course outside of the normal course duration. The award of an "Incomplete" will only be made in rare circumstances, with the concurrence of the student and the professor on what specific tasks remain and when they are due for the grade to be changed to a higher grade. The determination of the need to award an "Incomplete" is entirely up to the professor's personal judgment.

Final Exam

This course does not require a final examination, as such, but does require a submitted final project. This project will be due the Thursday of week 16.

Attendance

This is an online course and attendance is not taken. However, failure to participate in the discussion board, to communicate or respond to e-mails from the professor, is an indication something is wrong. We can no longer forcibly drop students from classes for non-attendance or non-participation. Therefore, we have made both a significant component of the course grade as an enticement to keep you engaged in the learning process. Failure to participate or communicate on the part of a student will result in an appropriate reduction of your grade and possibly in your failure of this course.

Add/Drop Information

Click to see ASU Academic Calendar

Students may add this course up to Friday close of business (COB), usually 5:00 PM, of the first week of class.

Students may drop this course up to the 6th day of the class or the last drop date as specified by the University Administration.

Course Organization:

Lesson 1: Introduction to the course, to GIS, and some of the basic uses of GIS through the readings in the required textbook. Students introduce themselves to the class and complete an introductory tutorial. Since this is a 16-week course, each lesson will cover two weeks. Therefore, the DQ for lesson 1 will be due Friday midnight CST of week 2. Responses (to other students, 2 minimum each week) are due Sunday night midnight of week 2.

Lesson 2: Students learn how to query data, how to use layers as components of maps, the summarization and presentation of data geographically, and the use of tables. We also discuss how data is formatted, how GIS software utilizes the dataset, what Vector and Raster data are and how they differ, as well as the development of metadata using ArcCatalog. Students complete several tutorials with ArcGIS & ArcCatalog. The DQ and exercises for Lesson 2 are due on Friday night midnight CST for week 4. Responses (to other students, 2 minimum each week) are due Sunday night midnight of week 4. **Exercises 1 (Parts 1 and 2) due Friday before midnight of Week 4.**

Lesson 3: Students learn about coordinate systems and map projections. We also discuss the value of data creation and manipulation and demonstrate the fundamental editing tools of ArcGIS. Students participate in several tutorials to develop their GIS skills. The DQ for Lesson 3 and exercises are due Friday night for week 6. Responses (to other students, 2 minimum each week) are due Sunday night midnight of week 6. **Exercise 3 due before midnight Friday of Week 6.**

Lesson 4: We begin with learning about mapping facility locations through geocoding. We finish this lesson with development of geoprocessing tools and skills to analyze complex questions using ArcGIS. Students participate in several tutorials to develop their GIS skills. The DQ for Lesson 4 and associated exercises are due Friday night for week 8. Responses (to other students, 2 minimum each week) are due Sunday night midnight of week 8. **Exercises 4 and 5 due before midnight Friday of Week 8**

Lesson 5: Extensions are aftermarket programs that expand on the basic capabilities of ArcGIS software. We open with the exploration of the ArcGIS Spatial Analyst extension and how it applies to the homeland security community. We conclude with an exploration of the techniques used to georeference scanned maps and other non-georeferenced digital files. Students participate in several tutorials to develop their GIS skills. The DQ for Lesson 5 and associated exercises are due Friday night for week 10.**.** (to other students, 2 minimum each week) are due

Sunday night midnight of week 10. **Exercises 6 and 7 due before midnight Friday of Week 10**.

Lesson 6: In this lesson, we introduce the free FEMA Hazus-MH extension and how it can be used to model several different types of disasters. The requirements for the final project are introduced. Students participate in several tutorials to develop their GIS skills. The DQ for Lesson 6 and associated exercises are due Friday night for week 12. Responses (to other students, 2 minimum each week) are due Sunday night midnight of week 12. **Exercise 8 due before midnight Friday of Week 12.**

Lesson 7: A review of the textbooks associated with the course is conducted along with selection of several of the tutorials for continuing practice with GIS software. The DQ for Lesson 7 and associated exercises are due Friday night for week 14. Responses (to other students, 2 minimum each week) are due Sunday night before midnight of week 14. **Exercise 10 due before midnight Friday of Week 14.** (There is no exercise 9 for us to do.)

Lesson 8: Students complete and turn in their final GIS projects. Students conduct an evaluation of the course and share their thoughts on improvements. **The final project is due before midnight Thursday of week 16.**

Minimum Computer Capability

As with all online courses, students must be able to operate a computer and have the necessary technical skills to navigate around a web page. Additional technical skills are not a prerequisite for this course, however, your computer must meet certain minimum requirements to operate the software associated with this class as noted below.

The software provided in this course requires that you have access to a computer with certain minimal capabilities. Any desktop or laptop manufactured in the past couple of years should be adequate; however, you should ensure that your computer meets at least the following standards. It is also recommended that if you use an Apple or iMac computer, you should be aware that the software used in this course will not run on your computer unless you split your hard drive and run at least part of your computer using a Microsoft OS. Even then it won't run well. If you use an iMac or MacBook computer, I recommend you invest in a cheap PC that meets the following minimum requirements or better. Your life over this 16-week course will be much simpler.

Hardware Requirements

CPU Speed   2.2 GHz minimum; Hyper-threading (HHT) or Multi-core

	recommended
Processor	Intel Pentium 4, Intel Core Duo, or Xeon Processors; SSE2 minimum Run this Microsoft utility from your Windows command prompt to check your processor. See Dual or dual-core support policy.
Memory/RAM	2 GB minimum
Display Properties	24-bit color depth
Swap Space	Determined by the operating system; 500 MB minimum.
Disk Space	2.4 GB In addition, up to 50 MB of disk space may be needed in the Windows System directory (typically, C:\Windows\System32). You can view the disk space requirement for each of the 10.1 components in the Setup program. If using ArcGlobe, additional disk space may be required. ArcGlobe will create cache files when used.
Video/Graphics Adapter	Check your computer's ability to run ArcGIS 64 MB RAM minimum, 256 MB RAM or higher recommended. NVIDIA, ATI, and Intel chipsets supported. 24-bit capable graphics accelerator OpenGL version 2.0 runtime minimum is required, and Shader Model 3.0 or higher is recommended. Be sure to use the latest available driver.
Networking Hardware	Simple TCP/IP, Network Card, or Microsoft Loopback Adapter is required for the License Manager.

Software Requirements

- .NET Framework 3.5 SP1 must be installed prior to installing ArcGIS for Desktop.

- Internet Explorer requirement:
  ArcGIS for Desktop requires a minimum installation of Microsoft Internet Explorer Version 7.0 or 8.0. If you do not have an installation of Microsoft Internet Explorer Version 7.0/8.0, you must obtain and install it prior to installing ArcGIS for Desktop.
- Python requirement for Geoprocessing:
  ArcGIS for Desktop geoprocessing tools require that Python 2.7.x and Numerical Python 1.6.x are installed. If the ArcGIS for Desktop setup does not find either Python 2.7.x or Numerical Python (NumPy) 1.6.x installed on the target computer, Python 2.7.2 and Numerical Python 1.6.1 will be installed during a complete installation. You can choose a Custom installation to unselect the Python feature and avoid installing it. Additionally, if the Python setup is executed during the ArcGIS for Desktop installation, you will be provided with the opportunity to choose its installation location. The Python installation location should not include spaces.

University Policies

Academic Integrity
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding and complying with the university Academic Honor Code and the ASU Student Handbook.

Accommodations for Disability
ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by emailing studentservices@angelo.edu, or by contacting:

Office of Student Affairs
University Center, Suite 112
325-942-2047 Office
325-942-2211 FAX

Student absence for religious holidays
A student who intends to observe a religious holy day should make that intention known in

writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

Title IX

Title IX at Angelo State University:

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Miller, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.miller@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form**.**

If you are wishing to speak to someone about an incident in confidence you may contact the *University Health Clinic and Counseling Center at 325-942-2173* or the *ASU Crisis Helpline at 325-486-6345.*

For more information about Title IX in general you may visit www.angelo.edu/title-ix.