

Applied GIS Program
Department of Agricultural & Environmental Sciences

AGSC 2510: Fundamentals of Geospatial Information Systems | Fall 2017

PART 1: COURSE INFORMATION

INSTRUCTOR

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COURSE DESCRIPTION

Class 11:10 am - 12:35 pm TR Lawson Hall 012 Aug 21, 2017 - Dec 8, 2017

This course is designed for students with no prior **Geospatial Information Systems** (GIS) experience. It involves lectures, class discussion and computer lab periods each week where hands-on experience using GIS software allows you to apply knowledge gained during the lectures. Lab exercises are a major part of the course and provide the opportunity for students to acquaint themselves with the many practical issues related to GIS applications.

Lab exercises are completed almost entirely using Windows-based computers. While the course requires no prior GIS experience, you must have a basic understanding of computers and how to use them.

TEXTBOOKS AND COURSE MATERIALS

REQUIRED MATERIAL: *Textbook is available free online as an interactive text:*

Click here to view: [The ArcGIS Book: 10 Big Ideas about Applying the Science of Where](#)

ArcGIS Online Account: You will receive an email or correspondence with your user account information. Please follow these instructions to complete your registration. You will need this software beginning in Week 1 of the term.

Course Websites: <https://elearn.tnstate.edu/>; <http://mytsu.tnstate.edu/>

Other Resources:

Access the ESRI training website: <http://training.esri.com>

ArcGIS Desktop 10x and ArcGIS Pro Help: <http://resources.arcgis.com/en/home/>

Other readings resources, PowerPoint slides, video and links for resources will be made available weekly.

Goals & Objectives

The purpose of this course to introduce students to the fundamentals of Geospatial Information Systems (GIS) theory and technologies through the use of **problem solving** and **spatial thinking** skills. The approach used in this course is problem-based learning applied to spatially explicit problems. These concepts are essential to the use of GIS. You will develop your own analytical skills by addressing real- world decision making problems within the spatial framework of GIS.

This is NOT only a software package tutorial class. We will be using software for both the lab sessions and the weekly lectures. However, your learning will be facilitated through **problem solving**, underlying GIS concepts, and the basics of **spatial thinking** that will allow you to use the knowledge acquired in the class regardless of the software package available.

This course is about you and your place in the map. We will examine how geospatial data are collected and used, how geospatial technologies have transformed the way we think and make decisions, and the important societal issues that result from the proliferation of new technologies. We will discuss the use of online mapping, satellite images, crowd sourcing, and mobile technologies for responding to natural disasters, galvanizing underrepresented communities, and embedding spatial information into our daily activities.

The specific objectives of this course are to:

1. Introduce GIS terminology and concepts;
2. Improve geographic problem solving abilities through the application of GIS knowledge and spatial thinking skills;
3. Teach geospatial skills and provide relevant examples to student's career/academic interests;
4. Sharpen critical thinking skills about geographic information – its reliability, accuracy and precision;
5. Enhance competency in basic knowledge and skills regarding GIS.

Student Learning Outcomes:

1. Communication: Create GIS and cartographic outputs for presentation and dissemination
2. Specialized knowledge and skills: Create mapping applications
3. Applied Knowledge and Skills: Design and implement a GIS Service Learning project
4. Inquiry and Reasoning: Gain a better understanding of GIS technologies

You will be empowered with the necessary skills to: develop a website that investigates some geospatial phenomenon in a US city, learn about disease outbreaks and geospatial analysis and tell a GeoStory about something, somewhere.

Over the next semester, you will have an opportunity to learn different geospatial technologies such as web-based mapping software applications that allow you to create custom maps and work with real-time data to observe, collect, analyze, share and communicate your work with the world, online.

E-LEARN ACCESS

In order to provide easy access to your grades, discussions and other information, I may also use Elearn.

- To access this course on E-learn you will need access to the Internet and a supported Web browser (Internet Explorer, Firefox, and Safari).
- Your eLearn username is the same as your [MyTSU](#) username; however, your eLearn password is not the same as your [MyTSU](#) password.

To ensure that you are using a supported browser and have required plug-ins please run [the Check Browser](#) from your E-learn course. Refer to the E-learn Browser Tune-up page for instructions.

TECHNICAL ASSISTANCE

If you have never logged into a computer on the TSU campus, you may get an error message saying "invalid username/password." If this occurs, please contact the Helpdesk to reset your password. Please remember that you can only have your password changed between the hours of 7:30AM - 5:30PM (see Helpdesk information

- If you need assistance with other eLearn issues, please contact the Helpdesk at 615-963-1239 (7:30 AM - 5:30 PM Monday-Friday) or you can also email your question to helpdesk@tnstate.edu.

Visit the [Reset your password](#) if you wish to reset/change your password.

PART 2. SCHEDULE

Week	Date	Lecture	Chapter	Topic
Week 1	8/22/2017	Lecture 1	1. Welcome/ Introduction	Course Intro/Syllabus Review
	8/24/2017	Lecture 2		Spatial Literacy, Location, Place
Week 2	8/29/2017	Lecture 3	1. GIS - A Common Visual Language	1.1 Spatial Literacy
	8/31/2017	Lecture 4		1.2 The Science of Where 1.3 Web Maps, Scenes and Apps 1.4 Learn ArcGIS
Week 3	9/5/2017	Lecture 5	2. Mapping Is for Everyone	2.1 Online Mapping
	9/7/2017	Lecture 6		2.2 Map Making 2.3 Map Design 101 2.4 ArcGIS Pro Cartography
Week 4	9/12/2017	Lecture 7	3. Tell Your Story Using a Map	3.1 Story Maps
	9/14/2017	Lecture 8		3.2 Storytelling with Maps 3.3 Creating a story map 3.4 Tell your story project
Week 5	9/19/2017	Lecture 9	4. Great Maps need Great Data	4.1 Living Atlas of the World
	9/21/2017	Lecture 10		4.2 Demographic Analysis 4.3 Imagery, Satellite data 4.4 GIS Data Ecosystem
Week 6 Study Week	9/26/2017	Lecture 11	5. The Power of Where	5.1 Geographic Analysis
	9/28/2017	Lecture 12		5.2 Visualizing Spatial Data 5.3 Modeling 5.4 Spatial Problem Solving
Week 7	10/3-5/17	Review	REVIEW & Midterm	
Week 8 Home- coming	10/10/2017	Lecture 13	6. Mapping in 3D	6.1 Advantages of 3D
	10/12/2017	Lecture 14		6.2 Representing the Wolrld in 3D 6.3 3D Cartography 6.4 Creating a 3D Web App
Week 9	10/17/2017	Lecture 15	7. GIS Apps	7.1 Spatially Intelligent Apps
	10/19/2017	Lecture 16		7.2 Crowdsourcing 7.3 Mobile Apps 7.4 Collecting Field Data
Week 10	10/24/2017	Lecture 17	8. Imagery/ Visual Intelligence	8.1 Global Imagery
	10/26/2017	Lecture 18		8.2 Earth from Space 8.3 Environmental Change 8.4 Mapping the Solar System
Week 11	10/31/2017	Lecture 19	9. Mapping the Internet of Things	9.1 Real Time Data
	11/2/2017 (Withdraw Day)	Lecture 20		9.2 Real Time Mapping 9.3 Collecting Real Time Data 9.4 Data for Crisis Management
Week 12	11/7/2017	Lecture 21	10. GIS Community / Web GIS	10.1 Collaborative Mapping
	11/9/2017 Veterans Day	Lecture 22		10.2 GIS for Public Engagement 10.3 Social Engagement 10.4 Citizen Science
Week 13	11/14/2017	Lecture 23	Final Project Discussions	11.1 GIS Data Gallery
	11/16/2017	Lecture 24		11.2 The Future of Where
Week 14-16	11/20-25, 11/28-30, 12/4-8		Fall break, Study week, Finals	

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check E-learn for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through E-learn email.

PART 3: GRADING POLICY

Attendance is required at all lecture and lab periods.

There will be assigned chapter readings, discussions, and exercises throughout the semester.

A. GRADED COURSE ACTIVITIES:

Testing: Midterm and Final exams will be administered during the times designated in the syllabus.

The readings, participation, **lab exercises and assignments** are an important part of your final grade.

Project: Each student is required to complete a GIS project to be presented at the end of the term.

Grading Procedure: Students will learn the fundamentals of GIS through class participation, discussion and tutorial exercises. Exams will contribute 40% to the final course grade, while discussion and tutorial exercise activities will contribute 45% to the final course grade. A final project will contribute 15%.

Graded Course Activities	%	Points (1000)
Attendance and class participation (100 points)	15%	150
Assigned Chapter Readings and Exercises (100 points)	30%	300
Midterm Exam (100 points)	20%	200
Final Project (200 points)	15%	150
Final Exam (150 points)	20%	200

B. LATE WORK POLICY: Be sure to pay close attention to deadlines—there will be no makeup quizzes, late work is only accepted with a serious and compelling reason and instructor approval.

C. LETTER GRADE ASSIGNMENT: Final grades assigned for this course will be based on the percentage of total points earned and are assigned as follows:

Grade	%	Points (1000)
A	90%	900-1000
B	80%	800-899
C	70%	700-799
D	60%	600-699
F	<60%	<600

PART 4: COURSE POLICIES

A. CLASSROOM ATTENDANCE: Students are expected to attend classes regularly and arrive to class on time. It is assumed that each student understands the need for class attendance, and accepts full responsibility for his/her decisions regarding attendance. It is in your best interest to attend every class, since some material covered in class will not be in the textbook. Attendance helps to ensure success in all learning activities. Participation in class discussions is also encouraged. Students who come to class having read the assignment for the day, who ask questions, who answer questions, and who bring up points of interest are more successful than those who do not engage in these learning activities. Class attendance will be recorded. It is your responsibility to obtain any material that was missed.

B. ACADEMIC INTEGRITY: You are responsible for what you achieve in this class; therefore, neither cheating nor plagiarism will be tolerated. Any material taken from other sources (another individual's idea and/or theory) must be documented in accordance with the APA Publication Manual (6th ed., 2009). In no case should one represent another's work as one's own. This includes information received from others during examinations or submitting another's assignments, papers, etc. as one's own. To avoid questions of plagiarism, students involved in collaborative research should exercise extreme caution. If in doubt, students should check with the instructor. In

addition to the other disciplinary sanctions which may be imposed through the regular institutional procedures, as a result of academic misconduct, the instructor has the authority to assign an “F” (or a zero) for the assignment or examination, and/or to assign an “F” for the course.

- C. ACADEMIC & STUDENT SUPPORT SERVICES:** It will be the student’s responsibility to take advantage of the Library and the Student Success Center full complement of services including individual and group help from staff in locating and presenting information.
- D. CLASSROOM CONDUCT:** The instructor has the primary responsibility for control over classroom behavior and maintenance of academic integrity. The instructor can order the temporary or permanent removal from the classroom, any student engaged in disruptive conduct or conduct in violation of the general rules and regulations of the institution (Tennessee State University Undergraduate Catalog, 2011-2013, p.45).
- E. PROVISIONS FOR LATE AND MISSED ASSIGNMENTS** will be made only in the instances of unusual circumstances beyond the student’s control. Excessive unexcused absences and/or tardiness will affect your final grade.
- F. PUNCTUALITY:** Students are expected to submit assignments on or before the due dates and times. Late assignments **will not be accepted** and a grade of 0% will be given unless prior arrangements have been made with the instructor. Those arrangements are generally based on verifiable illness or professional schedule conflicts.
- G. CLASS PARTICIPATION:** The classroom is a shared learning environment. While the instructor introduces information, structure, and experiences designed to facilitate learning, students will benefit most from the learning activities in this course when they actively participate in discussions, by raising relevant questions, and by incorporating relevant information from the texts, readings, and references into discussions. Class participation includes attendance and course evaluation at the end of the semester. A portion of the final grade is based on attendance and participation. *LEARNING IS NOT A SPECTATOR SPORT.*
- H. STUDENT ATHLETES/UNIVERSITY-SPONSORED ACTIVITIES**
Student athletes should provide the instructor with official documentation of any team-related travel that may interfere with class attendance by the end of the second week of class. You are expected to turn in any assignments PRIOR to traveling.
- I. INCLEMENT WEATHER:** Call (615) 963-5090 or (615) 963-5171 to verify university closings.
- J. INFORM YOUR INSTRUCTOR OF ANY ACCOMMODATIONS NEEDED:** If you have a documented disability and verification from the [Office of Disability Services](#), and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student’s responsibility to provide documentation of disability to Office of Disability Services and meet with Office of Disability Services counselor to request special accommodation before classes start. Office of Disability Services is located in Floyd Payne Campus Center Room 117 Tennessee State University and can be contacted by phone at (615) 963-7400 (voice); (615) 963-7440(TDD only); (615) 963-7872 Disabilities Lab or email pscudder@tnstate.edu or visit: <http://www.tnstate.edu/disabilityservices/contact.aspx>
- K. DISABILITY ACCOMMODATION STATEMENT:** TSU is committed to creating inclusive learning environments and providing all students with opportunities to learn and excel in their course of study. Any student with a disability or condition which might interfere with his/her class performance or attendance may arrange for reasonable accommodations by visiting the Office of Disability Services (ODS). ODS is located in Kean Hall, room 131 and can be reached at 963-7400 or www.tnstate.edu/disabilityservices . You will be required to speak with ODS staff and provide documentation of the need for an accommodation. If you qualify for an accommodation you will be provided with a document stating what type of classroom accommodations are to be made by the instructor. It is your responsibility to give a copy of this document to the instructor **as soon as you receive it**. Accommodations will only be provided **AFTER** the instructor receives the accommodation instructions from ODS; accommodations are not retroactive. You must follow this process for each semester that you require accommodations.
- L. SEXUAL MISCONDUCT, DOMESTIC/DATING VIOLENCE, STALKING:** TSU recognizes the importance of providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or is experiencing any of these incidents, there are resources to assist you in the areas of accessing health and counseling services, providing academic and housing accommodations, and making referrals for assistance with legal protective orders and more.

Please be aware that most TSU employees, including faculty and instructors, are “responsible employees”, meaning that they are required to report incidents of sexual violence, domestic/dating violence or stalking. **This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I must report the information to the Title IX Coordinator.** Although I have to report the situation, you will still have options about how your situation will be handled, including whether or not you wish to

pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

You are encouraged to contact TSU's Title IX Coordinator to report any incidents of sexual harassment, sexual violence, domestic/dating violence or stalking. The Title IX coordinator is located in the Office of Equity and Inclusion, McWherter Administration Building, Ste. 260 and can be reached at 963-7494 or 963-7438. For more information about Title IX and TSU's SART or policies and procedures regarding sexual, domestic/dating violence and stalking please visit: www.tnstate.edu/equity.

If you wish to speak to someone confidentially, who is not required to report, you can contact the TSU Counseling Center, located in the basement of Wilson Hall, at 963-5611 or TSU Student Health Services, located in the Floyd Payne Campus Center room 304, at 963-5084. You may also contact the following off campus resources: Sexual Assault Center of Nashville at 1-800-879-1999 or www.sacenter.org or the Tennessee Coalition to End Domestic & Sexual Violence at 615-386-9406 or www.tncoalition.org.

M. HARASSMENT & DISCRIMINATION

Tennessee State University is firmly committed to compliance with all federal, state and local laws that prohibit harassment and discrimination based on race, color, national origin, gender, age, disability, religion, retaliation, veteran status and other protected categories. TSU will not subject any student to discrimination or harassment and no student shall be excluded from participation in nor denied the benefits of any educational program based on their protected class. If a student believes they have been discriminated against or harassed because of a protected class, they are encouraged to contact the Office of Equity and Inclusion at McWherter Administration Building, Ste. 260, 615-963-7494 or 963-7438, www.tnstate.edu/equity.

N. COMMIT TO INTEGRITY

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

- **SAC STATE'S ACADEMIC HONESTY POLICY & PROCEDURES**

“There are three areas in which graduate students should be particularly cautious: (1) proper citation of works by others, (2) the use of copyrighted material, and (3) adherence to research ethics.”

Read more about Tennessee State University graduate school's [Academic Integrity Statement](#)

- **DEFINITIONS**

At Tennessee Board of Regents (TBR), “cheating is the Cheating. Using or attempting to use unauthorized materials, information, or aids in any academic exercise or test/examination. The term academic exercise includes all forms of work submitted for credit or hours.”

“Plagiarism is a form of Academic Misconduct. At TBR, “plagiarism is the adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper attribution.”

Important Note: Any form of academic dishonesty, including cheating and plagiarism, may be reported to the office of Academic affairs. Course policies are subject to change. It is the student's responsibility to check E-learn and other resources for corrections or updates to the syllabus. Any changes will be posted in the announcements.

O. GUIDELINES FOR COMMUNICATIONS:

EMAIL:

- Always include the course name “AGSC 2510” on the subject line.
- Remember, without facial expressions some comments may be taken the wrong way. Be careful in wording your emails, and use standard fonts.
- With the exception of assigned exercise, do not send large attachments without permission. Special formatting, such as centering, audio messages, tables, html, etc., should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members.

WEB RESOURCES USE:

1. Columbia Guide to Online Style by Janice R. Walker and Todd Taylor
 2. Research and Documentation in the Electronic Age, Fifth Edition, by Diana Hacker and Barbara Fister.
- <http://bcs.bedfordstmartins.com/resdocse/>

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is the student's responsibility to check E-learn for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through E-learn email.

LIBRARY:

Links to library materials (such as electronic journals, databases, interlibrary loans, digital reserves, dictionaries, encyclopedias, maps, and librarian support) and Internet resources needed by learners to complete online assignments and as background reading will be included in this course.

COURSE EVALUATION

You are encouraged to complete the course evaluations form and submit the evaluation online towards end of the course approximately from 11/24 – 12/3. Actual dates will be communicated by the instructor to remind you complete and submit your course evaluation. Please visit the course evaluation website (MyTSU Portal or click on <https://mytsu.tnstate.edu/cp/home/displaylogin>) when form is available. Should you have any technical trouble accessing this site, please contact IOTA Solutions at info@iotasolutions.com. Remember completing the online evaluation will only take a minimal amount of your time (approximately 10 minutes).

