

Geography 4330.001: Geographical Information Systems

Wednesday 6:00 to 8:45 pm

COB 251

Fall 2023

Instructor: Dr. E. Cory Sills, Associate Professor

Office: CAS 142

Office hours: MTW 11:10 am to 12:10 pm

In Person, By Appointment or

Via Zoom link: <https://uttyler.zoom.us/j/88447286640?pwd=NFhhRjlHWHpEWnB3cmNUMFpOdnFhQT09>

Passcode: 260513

E-mail: esills@uttyler.edu ph:903-566-7442

Communications: I encourage you to visit my office hours via zoom or directly after class via zoom. This is a good opportunity for you to look over your homework, exams, ask questions, or seek clarification. If you cannot attend my office hours you may set-up an alternative time to meet. I will try to respond promptly to your emails. **In your email, include your first and last name and that you are enrolled in the GIS class.**

Required texts:

1. Mastering ArcGIS Pro, 2nd edition. You may access this book for free through the UT Tyler library <https://libguides.uttyler.edu/c.php?g=1066647&p=8075197>

Required materials: Computer or access to a computer, flashdrive and/or online storage such as dropbox or onedrive.

Catalogue description: Geographic Information Systems Fundamentals of geographic information systems, including data capture, storage, processing, and output. Applications to various problems in the natural and social sciences.

Course objective: This course is a comprehensive introduction to the principles, techniques, and applications of Geographic Information Systems (GIS). The course is designed to combine lectures with practical application of the ArcGIS Pro software. Upon successful completion of this course, you will be able to (1) understand basic concepts and principles of GIS, (2) gain hands-on experience in the use of GIS techniques and software, (3) learn how to analyze information spatially. Specific skills learned include ArcGIS Pro software and SQL language.

Course format: The class will be a combination of lecture and practical application. The first half of the class will consist of lecture followed by a short break. The second part of class will consist of practical application (i.e. labs using the software program ArcGIS Pro). Prior to class time, review the schedule for the class and read the assigned chapter or article(s). The readings for the course allow completion of the labs. The lectures will introduce you to the fundamental principles of GIS and will not necessarily cover the same ground as the textbook. Indeed, they are intended to supplement each other rather than to completely overlap. I strongly recommend that you attend every class and complete all of the labs. I encourage relevant questions and comments during class time. A question you have other students might also have, and thoughtful remarks will make the course more interesting for everyone, including myself.

Class Etiquette: I expect everyone in the classroom to be **respectful** of each other and treat everyone with dignity. I expect comments to be positive and objective and not judgmental and rude. Please refrain from using the computers during class lectures. There will be plenty of time after the lectures to work with the software.

Exams and grading: There will be two exams that will be administered in the classroom (a midterm and a final). The Midterm exam will cover material from the beginning of the semester and the Final will cover material from the second part of the semester. Exams include multiple choice, true/false, and short answer. There will also be a series of 11 labs that will be assigned each week. Your lowest scoring lab will be dropped. You have approximately one week to finish each lab. **The lab assignments are due on Canvas by midnight the week after they are assigned (see schedule for due dates).** All lab instructions and submissions will be through Canvas.

Make-up tests will be given with a legitimate reason and in rare circumstances. Students should contact the instructor **prior** to the exam and not after if they will miss the exam. Make-up exams will not be given except when there are

exceptional circumstances (be prepared to provide documentation of your circumstance, such as a doctor's note, police report, University-excused absence, *et cetera*).

- Grading scale: A 90-100% B 80-89.99% C 70-79.99%
 D 60-69.99% F 0-59.99%

Mid-term: 15%

Final: 15%

Lab Exercises: 70%

Total: 100%

Make-up Policy: Make-up tests will be given with a legitimate reason and in rare circumstances. Students should contact the instructor **prior** to the exam and not after if they will miss the exam. Make-up exams will not be given except when there are exceptional circumstances (be prepared to provide documentation of your circumstance, such as a doctor's note, police report, University-excused absence, *et cetera*).

Cell Phones/Laptops: Turn off your ringer and do not use your cell phone during class – this includes text messaging. If you are expecting an important call please put your phone on vibrate and sit close to the door. This action will help minimize any disturbance to the class. Laptops are allowed for note-taking, but I reserve the right to ask you to shut your computer down (or to change my class policy) if you are using your computer for uses other than note-taking and disrupting those around you. **Any video, photographic or audio recordings of the class must be approved by me.**

University Policies and Information

Withdrawing from Class: Students are allowed to [withdraw](#) (drop) from a course through the University's [Withdrawal Portal](#). Texas law prohibits students who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. The number includes courses dropped at other 2-year or 4-year Texas public colleges and universities. Make sure to consider the impact withdrawing from any course has on your academic progress as well as the financial implications. We encourage you to consult your advisor(s) and financial aid for additional guidance. CAUTION #1: Withdrawing before census day does not mean students receive a full refund. Please see the [Tuition and Fee Refund Schedule](#). CAUTION #2: All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms.

Final Exam Policy: Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members are required to maintain student final examination papers for a minimum of three months following the examination date.

Incomplete Grade Policy: If a student, because of extenuating circumstances, is unable to complete course requirements by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in lieu of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all course work or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor; and (c) the student presents these reasons prior to the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average for a student. The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to complete the work for the course within the time limit, the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has not been assigned within one year, then the Incomplete will be changed to an F or to NC, if the course was initially taken under the CR/NC grading basis.

Grade Appeal Policy: UT Tyler's Grade Appeal policy requires the completion of a Grade Appeal form for this action to take place. The grade appeal begins with the instructor of the course. If a student does not agree with the decision of the instructor, the student may then move the appeal to the department chair/school director for that course. If the student is still dissatisfied with the decision of the chair/director, the appeal moves to the Dean of the College offering that course,

who has the final decision. Grade appeals must be initiated within sixty (60) days from the date of receiving the final course grade. The Grade Appeal form is found on the [Registrar's Form Library](#).

Disability/Accessibility Services: In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), The University of Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If a student has a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, the student is encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact the student when the application has been submitted and schedule an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, # 3150 or call 903.566.7079.”

Military Affiliated Students: UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. Campus resources for military-affiliated students are in the [Military and Veterans Success Center \(MVSC\)](#). The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

Academic Honesty and Academic Misconduct: The UT Tyler community comes together to pledge that “Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.” Therefore, we enforce the [Student Conduct and Discipline policy](#) in the Student Manual Of Operating Procedures (Section 8).

FERPA: UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [University Policy 5.2.3](#). The course instructor will follow all requirements in protecting your confidential information.

Recording of Class Sessions: Class sessions may be recorded by the instructor for use by students enrolled in the course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in the course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Absence for Official University Events or Activities: All courses follow the practices related to approved absences as noted by the Student Manual of Operating Procedures ([Sec. 1 -501](#)).

Absence for Religious Holidays: Students who anticipate being absent from class due to a religious holiday are requested to inform the instructor by the second class meeting of the semester.

Campus Carry: We respect the right and privacy of students who are duly licensed to carry concealed weapons in all courses. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.

Incidence of Scholastic Dishonesty: You will receive an automatic zero on the assignment. All cases of plagiarism or cheating will result in an automatic zero for the assignment

What we cover in the lecture on a day-to-day basis may differ from the attached schedule. I will inform the class if topics change. All lab instructions are on Canvas. All labs will be submitted via Canvas.

Course Schedule

Week	Day	Date	Topic	Reading
1	W	8/23	Lecture: Mapping the Course/What is GIS? Activities: Access ArcGIS Pro and Explore the textbook Install Training Data Organize folders and files Explore arcgis.com	Syllabus/Introduction
2	W	8/30	Lecture: Exploring GIS Data Begin: Lab 1 (Due 9/6) Census date is Friday Sept. 1	Chapter 1: GIS Data
3	W	9/6	Lecture: Mapping GIS Data Lab 1 Due at midnight Begin: Lab 2 (Due 9/13)	Chapter 2: Mapping GIS Data
4	W	9/13	Lecture: Map Design Lab 2 Due at midnight Begin: Lab 3 (Due 9/20)	Chapter 3: Presenting GIS Data
5	W	9/20	Lecture: Coordinate Systems Lab 3 Due at midnight Begin: Lab 4 (Due 9/27)	Chapter 4: Coordinate Systems
6	W	9/27	Lecture: Vector Model Review for Mid-term exam Lab 4 Due at midnight Begin: Lab 5 (Due 10/11)	Chapter 5: Managing Vector Data
7	W	10/4	Mid-term Exam beginning of class After exam continue working on lab	
8	W	10/11	Lecture: Raster Model Lab 5 Due at midnight Begin: Lab 6 (Due 10/18)	Chapter 6: Managing Raster Data
9	W	10/18	Lecture: Attribute Data Lab 6 Due at midnight Begin: Lab 7 (Due 10/25)	Chapter 7: Attribute Data
10	W	10/25	Lecture: Editing and Topology Lab 7 Due at midnight Begin: Lab 8 (Due 11/1) Last Day to Withdraw is Monday Oct. 30	Chapter 8: Editing

11	W	11/1	Lecture: Queries Lab 8 Due at midnight Begin: Lab 9 (Due 11/8)	Chapter 9: Queries
12	W	11/8	Lecture: Joins Lab 9 Due at midnight Begin: Lab 10 (Due 11/15)	Chapter 10: Joins and Overlay
13	W	11/15	Lecture: Raster Analysis Lab 10 Due at midnight Begin: Lab 11 (Due 11/29)	Chapter 11: Raster Analysis
	W	11/22	Thanksgiving No Class	
14	W	11/29	Sharing and Managing GIS Review for the Final Exam Lab 11 Due at midnight All remaining labs due	Chapter 12: Sharing GIS
15	W	12/6	Final Exam TBA	