Geography 4330.001: Geographical Information Systems
Monday and Wednesday 4:05 to 5:30 pm
COB 251

Fall 2024

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/84568966712?pwd=pbJsfRtEC4gcdEgu5BCAHnJ4qk74pG.1
Passcode: 334289
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: The library has purchased the textbook for you to use free. Only three students can use this book at one time. However, you can download and save sections of the book. Here is the link to access the book GEOG - Library-Provided eTextbooks - Research Guides at University of Texas Tyler (uttyler.edu). You may also purchase the books in the UT Tyler bookstore or from online sites such as Amazon and Chegg.

1. Mastering ArcGIS Pro, 2nd edition, by Maribeth Price

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. On Mondays the class will consist of lecture followed by introduction to the week's lab. Wednesday's 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 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.

- 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.**

Class AI Policy: I expect all work students submit for this course to be their own. I have carefully designed all assignments and class activities to support your learning. Doing your own work, without human or artificial intelligence assistance, is best for your efforts in mastering course learning objectives. For this course, I expressly forbid using ChatGPT or any other artificial intelligence (AI) tools for any stages of the work process, including brainstorming. Deviations from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values.

University Policies and Information

Withdrawing from Class

Students may withdraw (drop) from this course using the Withdrawal Portal. Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email enroll@uttyler.edu to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully read the implications for withdrawing from a course and the instructions on using the Withdrawal portal..

Texas law prohibits students from dropping more than six courses during their entire undergraduate career*. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance. **CAUTION #1**: Withdrawing before census day does not mean you get 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. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before

withdrawing from a course. CAUTION #4: All veterans or military-affiliated students should consult with the Military and Veterans Success Center.

* Students who began college for the first time before 2007 are exempt from this law.

Artificial Intelligence Statement

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. *Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).*

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 must 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 all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place 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 coursework 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 before 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.

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 meet all of the work for the course within the time limit, then 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 yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

Grade Appeal Policy

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the Registrar's Form Library.

NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

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 you have 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, you are encouraged to visit https://hood.accessiblelearning.com/UTTyler/ and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and 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 https://www.uttyler.edu/disability-services, the SAR office located in the Robert Muntz Library, LIB 460, email saroffice@uttyler.edu, 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. The Military and Veterans Success Center (MVSC) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

Students on an F-1 Visa
To remain in compliance with Federal Regulations requirements you must do the following:
- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

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 to protect your confidential information.

Absence for Official University Events or Activities
This course follows the practices related to Excused Absences for University Events or Activities as noted in the Catalog.

Absence for Religious Holidays
This course follows the practices related to Excused Absences for Religious Holy Days as noted in the Catalog.

Absence for Pregnant Students
This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences.

Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at parents@uttyler.edu and also complete the Pregnant and Parenting Self-Reporting Form.

Campus Carry

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. 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.

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	M	8/26	Mapping the Course/What is GIS? Introductions Activities: GIS Activity	Syllabus
1	W	8/28	Lecture: Exploring GIS Data Access ArcGIS Pro and Explore the textbook Install Training Data Organize folders and files Explore arcgis.com Begin Lab 1 (Due 9/11)	Introduction Chapter 1: GIS Data
2	M	9/2	No Class. Labor Day	
2	W	9/4	Continue Lab 1 (Due 9/11)	Chapter 1: GIS Data
3	M	9/9	Lecture: Mapping GIS Data	Chapter 2: Mapping GIS Data
3	W	9/11	Lab 1 Due at midnight Begin: Lab 2 (Due 9/18) **Census date**	Chapter 2: Mapping GIS Data
4	M	9/16	Lecture: Map Design	Chapter 3: Presenting GIS Data
4	W	9/18	Lab 2 Due at midnight Begin: Lab 3 (Due 9/223)	Chapter 3: Presenting GIS Data
5	M	9/23	Lecture: Coordinate Systems	Chapter 4: Coordinate Systems
5	W	9/25	Lab 3 Due at midnight Begin: Lab 4 (Due 10/2)	Chapter 4: Coordinate Systems
6	M	9/30	Lecture: Vector Model	Chapter 5: Managing Vector Data
6	W	10/2	Lab 4 Due at midnight Begin: Lab 5 (Due 10/16)	Chapter 5: Managing Vector Data

7	M	10/7	Wrap-Up Lectures Review for Midterm Continue working on labs	
7	W	10/9	**Mid-term Exam**	
8	M	10/14	Lecture: Raster Model	Chapter 6: Managing Raster Data
8	W	10/16	Lab 5 Due at midnight Begin: Lab 6 (Due 10/25)	Chapter 6: Managing Raster Data
9	M	10/21	Lecture: Attribute Data	Chapter 7: Attribute Data
9	W	10/23	Lab 6 Due at midnight Begin: Lab 7 (Due 10/30)	Chapter 7: Attribute Data
10	M	10/28	Lecture: Editing and Topology	Chapter 8: Editing
10	W	10/30	Lab 7 Due at midnight Begin: Lab 8 (Due 11/6)	Chapter 8: Editing
11	M	11/4	Lecture: Queries **Last Day to Withdraw**	Chapter 9: Queries
11	W	11/6	Lab 8 Due at midnight Begin: Lab 9 (Due 11/13)	Chapter 9: Queries
12	M	11/11	Lecture: Joins	Chapter 10: Joins and Overlay
12	W	11/13	Lab 9 Due at midnight Begin: Lab 10 (Due 11/20)	Chapter 10: Joins and Overlay
13	M	11/18	Lecture: Raster Analysis	Chapter 11: Raster Analysis
13	W	11/20	Lab 10 Due at midnight Begin: Lab 11 (Due 11/4)	Chapter 11: Raster Analysis
Thanksgiving Break November 25-29				

14	M	12/2	Sharing and Managing GIS Review for the Final Exam	Chapter 12: Sharing GIS
14	W	12/4	Lab 11 Due at midnight All remaining labs due	Chapter 12: Sharing GIS
15	M	12/9	**No Class: Study Day**	
15	W	12/11	**Final Exam TBA**	