



The University of Texas at Tyler  
*Soules College of Business*  
*Department of Technology*

**TECH 4342 – APPLIED GEODESY**  
Course Syllabus — Spring 2022  
**ONLINE CLASS**

Terry J. Cowan  
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**Class Location:** Online

**Office Hours.** I will not have formal office hours since this is an online course. Email is my preferred means of communication. Only use [barakoni54@gmail.com](mailto:barakoni54@gmail.com) to contact me via email. Please understand that I will be working during the day, so I will be able to answer emails primarily in the evenings. Please contact me by e-mail to set up a time for a phone or facetime conversation.

**Course Description.** This course will cover advanced GPS/GNSS concepts including the history of GPS, how GPS works, the best practices for using GPS for land surveying applications, and recent advancements for GNSS technology. The primary focus of this course is for GPS in connection with land surveying.

**Course Text.** *GPS for Land Surveyors*, 4<sup>th</sup> Edition by Jan Van Sickle  
**ISBN-13:** 978-1466583108/**ISBN-10:** 146658310X

**Course Objectives.**

1. Learn about GPS signals and why they are critical
2. Become familiar with the different biases and the solutions for them
3. Understand technology that brought about modern GPS
4. Review the receivers and methods used to collect data
5. Understand the basic concepts regarding coordinate systems and how that impacts GPS
6. Become familiar with Static GPS
7. Learn about Real Time GPS solutions and practices
8. Learn about the types of satellites and the new signals and systems

**Grading.**

Essay	15%
Quiz 1	15%
Quiz 2	15%
Quiz 3	15%
<u>Final Exam</u>	<u>40%</u>
Total	100%

## Grade Scale Breakdown

A = 89.6 – 100%

B = 79.6 – 89.5%

C = 69.6 – 79.5

D = 60 – 69.5%

F = BELOW 60%

**Essay.** Each student must complete an essay this semester. The essay must be a minimum length of 3 pages double spaced. Page length does not include optional cover page or the works cited page. The essay may cover any GPS/GNSS topic.

The essay must be double spaced with 1-inch margins and have Times New Romans 12 point font. Paragraphs should have between 4 and 8 sentences, and the sentences should be complete. Essay due date is provided in the course schedule found below.

The essay will be graded subject to the following penalties. Penalties will be assessed off the top of the allowed grade before any other grading is tallied. If all three of the penalties are assessed, the paper will receive a grade of zero. Credit will only be given for writings of the student. Copying the work of others will not be tolerated, and the grade will be adjusted accordingly.

1. 20% penalty if any paragraph contains more than 10 sentences.
2. 20-100% penalty for any essay shorter than 3 pages.
3. 100% penalty if the essay is not a topic relating to the topics of this course.
4. 40-100% penalty for any essay that has more than a 20% similarity score.

The essay shall include the following information at the top of the first page unless a cover page is used:

First & Last name of student

Course Name and Number

Date

**Use of Canvas.** Please use your UTT email ID and password access Canvas. All class notes will be posted on Canvas for students to review. It is the students' responsibility to regularly check Canvas for assignments. Due to the nature of this course, students should check Canvas every day for announcements and discussion posts. It is the student's responsibility to read all correspondence and keep up with the due dates and deliverables for this course. The key to successful completion of this course, or any online course, is organization. This course is not a self-paced course and requires constant use of Canvas. Please keep up with all communications and deadlines, as deadlines exist because the course is offered within the UT Tyler course schedule and so that students can complete the course successfully in a timely manner.

**University Policies.** The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrates a high standard of

individual honor in his or her scholastic work. Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment of the award of a degree, and/or the submission, as one's own work of material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

University regulations require the instructor to report all suspected cases of academic dishonesty to the Dean of Students for disciplinary action. In the event disciplinary measures are imposed on the student, it becomes part of the students' official school records. Also, please note that the handbook obligates you to report all observed cases of academic dishonesty to the instructor.

**Students Rights and Responsibilities.** To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link:  
<http://www.uttyler.edu/wellness/rightsresponsibilities.php>

**Grade Replacement/Forgiveness and Census Date Policies.** Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract.

The Census Date is the deadline for many forms and enrollment actions that students need to be aware of. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

**State-Mandated Course Drop Policy.** Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

**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 offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a disability diagnosis such as a chronic disease, learning disorder, head injury or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with an Accessibility Case Manager. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR webpage (<http://www.uttyler.edu/disabilityservices/>) or the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to [saroffice@uttyler.edu](mailto:saroffice@uttyler.edu).

**Student Absence due to Religious Observance.** Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester.

**Student Absence for University-Sponsored Events and Activities.** If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

**Social Security and FERPA Statement.** It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

**Emergency Exits and Evacuation.** Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

## Course Schedule

### Module 1: January 10 – January 23

Assigned Reading: **Chapter 1** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed. (Required Text)

Topic: Introduction to GPS, and The History of GPS and GPS Signals

### Census Date January 24

### Module 2: January 24 – February 6

Assigned Reading: **Chapter 2** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: Biases & Solutions: A look at sources of errors and ways to overcome them

**Quiz 1** (covering Modules 1 & 2) is due at 11:59 pm on February 13

### Module 3: February 7 – February 20

Assigned Reading: **Chapter 3** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: Framework—A look at the forerunner to GPS and the current system today

### Module 4: February 21 – March 6

Assigned Reading: **Chapter 4** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: GPS Receivers and Methods

### Spring Break March 7- 12

**Quiz 2** (covering Modules 3 & 4) is due at 11:59 pm on March 15

### Module 5: March 14 – March 27

Assigned Reading: **Chapter 5** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: Coordinates

### Module 6: March 28, 2021 – April 10

Assigned Reading: **Chapter 6** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: Surveying with Static GPS

**Quiz 3** (covering Modules 5 & 6) is due at 11:59 pm on April 16

### Module 7: April 11 – April 24

Assigned Reading: **Chapter 7 & 8** of *GPS for Land Surveyors*, 4<sup>th</sup> Ed.

Topic: Surveying with RTK GPS & GPS modernization

No quiz for Module 7

### Final Exam April 26 - 28

Multiple Choice and True/False – Online – Covering Modules 1 - 7

**Essay is due at 11:59 pm on April 28<sup>th</sup>**

Module lectures and course material will remain available for the duration of the course.

Note: The instructor reserves the right to amend the syllabus including revising assignments, tentative schedule and evaluation as necessary.