SUR 225 – Construction Surveying
Fall 2019

A. COURSE INFORMATION

Course number/section: SUR 225.001
Class meeting time: Lecture: Online Only
Class location: Lecture: Online Only
Course Website: bb.niset.xyz

B. INSTRUCTOR INFORMATION

Instructor: C.A. "Tony" Nettleman, III
Office location: Online Only
Office hours: TBA
Telephone: TBA
E-mail: TBA
Appointments: TBA or by appointment

Please be aware that e-mails are typically returned within 24 hours and I will be traveling throughout the semester (dates will be posted shortly before each trip). For immediate assistance, please call my cell phone.

C. COURSE DESCRIPTION:

Catalog Course Description
Principles and reduction of observations and errors in spatial measurement. Techniques of horizontal and vertical angle measurement for precise positioning. Trigonometric heighting and vertical staff tacheometry. Setting out of structures. Design and computation of horizontal and vertical curves.

D. PREREQUISITES AND COREQUISITES

Prerequisites
SUR 211 and SUR 212

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

- Paul R. Wolf and Charles D. Ghilani, "Elementary Surveying: An Introduction to Geomatics", Prentice Hall, Twelfth Edition, USA.
- Charles A. Nettleman, III, "Fundamentals of Surveying II Field Manual (Spring 2018)", Nettleman Land Consultants, INC http://smnr.me/ojy0s5

- Pre-programmed HP35s Calculator

Supplies

- Survey Field Book

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course's student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Use electronic total stations to measure differences in elevation, horizontal and vertical angles, and distances
2. Observe and compute elevations from leveling observations
3. Compute parameters of a horizontal circular transition curve and elevations along an equal-tangent parabolic vertical transition curve
4. Understand basic concepts of positioning using Global Navigational Satellite Systems using static and kinematic methods
5. Describe types of distance measurement and their sources of error

G. INSTRUCTIONAL METHODS AND ACTIVITIES

All lectures will be presented live in the classroom and recorded for posting online. In-person students will attend live lectures and labs while online students will watch lecture recordings and complete labs on their own time.

Lectures will be held twice a week. Labs will be conducted on Fridays. The lab is due on Wednesday of the next week. Random quizzes will be given along with two final exams.

This course has a field component. Students taking the course online must comply with the GISC Program's Online Policies available at: http://gisc.tamucc.edu/undergraduate/undergraduate-online.html Specifically, the commitment form (must be submitted to the instructor by the first week of class, otherwise the student will be unenrolled from the course.

H. MAJOR COURSE REQUIREMENTS AND GRADING

Student learning outcomes will be assessed through three examinations, labs, homework, and quizzes.

ACTIVITY	% of FINAL GRADE
Exams (2 @ 150)	30
Labs (10 @ 30)	30
Quizzes (4 @ 50)	20
Homework (10 @ 20)	20

I. COURSE CONTENT/SCHEDULE

WEEK	TOPIC	CHAPTER(S)	ASSIGNMENTS	LABS
1	Errors and Equipment Checks	2 and 3	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.10, 3.16	Welcome
2	Intro to Construction Surveying	N/A	23.3, 23.7, 23.14, 23.15, 23.16, 23.18, 23.19, 23.20	Building Layout
3	Horizontal Curves	24	Quiz I 24.2, 24.7*, 24.8, 24.9, 24.15*, 24.16, 24.17, 24.30 (*by hand and using software)	HZ Curve Staking
4	Vertical Curves	25	25.1, 25.2, 25.3*, 25.4, 25.5, 25.19*, 25.22, 25.24 (*compute by hand and using software)	V Curve Staking
5	Topographic Surveys	17	17.1. 17.2, 17.3, 17.5, 17.7, 17.9, 17.21, 17.34	In-Field Topo
6	Volume and Area Calculations	12 & 26	Quiz II 12.1, 12.3, 12.5, 12.6, 12.15, 12.17, 12.22	N/A
7	Midterm Exam	N/A	N/A	N/A
8	GPS: Intro	13	13.2, 13.3, 13,6, 13.9, 13.11, 13.15, 13.17, 13.27	GPS Planning
9	GPS: Static	14	14.1, 14.2, 14.4, 14.6, 14.8, 14.22, 14.27, 14.28	Static GPS Obs
10	GPS: RTK	15	Quiz III 15.1, 15.2, 15.4, 15.9, 15.11, 15.16, 15.20, 15.27	RTK GPS Obs
11	Precision Leveling	5.8 + Handout	N/A	Three-Wire Level Loop
12	Digital Leveling	4.11 + Handout	N/A	N/A
13	Spring Break!			
14	Coordinate Geometry	11	Quiz IV 11.1, 11.2, 11.9, 11.10, 11.11, 11.12, 11.13, 11.14, 11.15, 11.18	Intersections
15	Final Exam Prep			
16	Final Exam (see Populi for dates and times)			

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

G. COURSE POLICIES

Attendance/Tardiness: Attendance at all times is compulsory

Late Work: Late work will not be graded.

Participation: Participation in all activities is compulsory.

A. COLLEGE AND UNIVERSITY POLICIES

Academic Integrity (University)

It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior. See the full University Policy at catalog.niset.xyz

Deadline for Dropping a Course with a Grade of W

The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (calendar.niset.xyz) for the last day to drop a course

Grade Appeals

A student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor.

Disability Services

Our services are designed to meet the unique educational needs of enrolled students with documented permanent or temporary disabilities. DS provides intake and consultation services to students seeking to register with our office. DS reviews an individual's documentation of disability and assesses eligibility for services and the determination of reasonable accommodations. For more information visit the Disability Services Office disability.niset.xyz

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.