

CE 1313 Engineering Measurements
Class: MW 7:30 – 8:20 AM; PSCI 208
Labs: MWF: 8:30 – 11:20 AM & W: 1:30 PM – 4:20 PM F: 11:30 AM – 2:20 PM
All labs meet at ENGR E217
Spring 2019

Instructor: Dr. Raed Aldouri
Office: ENGR A219, e-mail: raeda@utep.edu Phone: (915) 747-8019
Office Hours: MW 12:30 – 1:30 PM

TA:
Office: ENGR E-233

Text: *Elementary Surveying: An Introduction to geomatics; by Charles Ghilani, 15th Edition.*

COURSE OBJECTIVES

The objectives of CE 1313 are: (1) Understand the principles and methods of surveying, (2) Apply the principles and gain hands on experience in using modern surveying instruments, (3) Understand the fundamentals of Global positioning system (GPS) and Geographic Information Systems (GIS), (4) Gain familiarity with GPS instruments and GIS software.

TOPICS

1. Introduction to Engineering Measurements
2. Overview of Measurements and Computations
3. Theory of Errors in Observations
3. Leveling – theory, methods, equipment, field procedures and computations
4. Distance Measurements
5. Measuring Angles, Azimuth and bearings
6. Total Station and Traverse Surveys
7. Traverse Surveys computations
8. Overview of Surveying Applications
9. Highway Curves and Earthwork
10. Other Applications
11. Global Positioning System (GPS)
12. Geographic Information Systems (GIS)

Blackboard will be used extensively for communication and post class materials (lectures, homework assignment, lab assignments, etc.). Students are expected to be familiar with Blackboard.

Mastering Engineering will be used for homework, quizzes and other assignments.

GRADING

Your grade for this course will be determined based on 100 points as follows:

Homework & Quizzes	15 points; 5 HW, 10 quizzes
Lab Reports	40 points
Exam I	10 points
Exam II	10 points
Final Exam	20 points
Attendance	5 points

If you miss 5 quizzes you will be dropped from the class.

Final grades are based on the normal distribution of points as shown below:

A	100 - 90
B	89 - 80
C	79 - 70
D	69 - 60
F	< 60

In accordance with University regulations, students who miss examinations will receive grades of zero. Exceptions to this rule will be made only on a carefully considered individual basis and only if the student contacts me before the exam. If you know in advance that you are going to miss an exam, it is your responsibility to inform me before the exam.

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Student Registration Instructions for Blackboard

First, enter your Blackboard course

1. Sign in to Blackboard and enter your Blackboard course.
2. Do one of the following:
 - » Select any Pearson link in the Content area.
 - » Select **Tools** in the left navigation and **Pearson's MyLab & Mastering** on the Tools page. Next, select any course link in the top area of the Pearson's MyLab & Mastering Tools page.

Next, get access to your Pearson course content

1. Enter your Pearson account **username** and **password** to **Link Accounts**.
You have an account if you have ever used MyLab or Mastering product.
 - » If you don't have a Pearson account, select **Create** and follow the instructions.
2. Select an access option:
 - » Enter the access code that came with your textbook or that you purchased separately from the bookstore.
 - » If available for your course,
 - Buy access using a credit card or PayPal.
 - Get temporary access.
3. From the You're Done page, select **Go to My Courses**.

Note: We recommend you always enter your Mastering Engineering course through Blackboard.

Get your computer ready

For the best experience, check the system requirements for your product at

<https://www.pearsonmylabandmastering.com/system-requirements/>

Need help?

For help with Mastering Engineering for Blackboard, go to <https://help.pearsoncmg.com/mylabmastering/bbi/student/en/index.html>

CLASS POLICIES

Policy	Description
Attendance Policies	<ul style="list-style-type: none"> Attendance is mandatory for both the lab and the class. If you leave the lab before you have finished your field work or without permission from the lab instructor, your attendance will not be counted and you will get a zero on the assignment We strongly discourage the practice of attending make-up labs. Missing labs due to justified reasons will be evaluated on a case-by-case basis.
Policy on scholastic dishonesty	<ul style="list-style-type: none"> Students are expected to be above reproach in all scholastic activities. Students who violate the University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University.
Grading Policies	<ul style="list-style-type: none"> Students have up to one week after receiving a graded assignment to resolve any issue regarding grades. The following penalties will be applied to late assignments: within one day - 20%; within three days -40%, four or more days and not excused by the University — not accepted.
Policy on instruments and safety	<ul style="list-style-type: none"> Students are responsible for the instruments issued to them during the lab period. Instruments must be returned to the lab instructor after the completion of the field work. Instruments must be in working condition and complete with all accessories, otherwise missing items will be charged to the students. Students must be careful about their own safety and the safety of their group members.

LABORATORY GUIDELINES

Field Work:

- Field work will be done in groups (each group has about 4 students). Students will form their groups, which remain fixed for the entire semester.
- Each group should complete a lab report (see the following guidelines for preparing lab reports). Reports will be included in the group folder.
- Groups should be prepare to present the report to the class as requested by the instructor
- Lab work will focus on using electronic total station, automatic level, handheld GPS, and ArcGIS software. Some labs may require knowledge of AUTOCAD, or other graphing software.

Lab Reports:

The lab report should be neat, concise, and accurate. It should consist of the following sections:

- Cover page:
 - Report Title
 - Author's Name and Group Number
 - Course Number and Semester
 - Date of the Report
- Objectives and Procedures

Purpose of the field exercise

Description of all the steps implemented in the field work.

3. Results and Discussion

In this section, you present your measured and computed data in drawings, graphs, tables etc., as appropriate. Also, you discuss your final results in a concise and clear manner.

Drawings and figures should be prepared electronically. You are strongly encouraged to use AutoCAD for drawings, or ArcGIS.

Appendix A: Data sheet of measured (raw) data

Appendix B: Sample calculations

ASSIGNMENTS AND QUIZZES

Assignments and quizzes will be given to monitor students' learning progress. Assignments will be included in the group folder. The student should be able to discuss in class homework assignments. Un-announced quizzes will be given during class period. Once a topic is finished, students should be ready for a quiz. You need to have a calculator that meets NCEES requirements.

No Cell Phones usage or other devices are allowed during class or exams unless instructed by me to use it.

Calculators approved by the National Council of Examiners for Engineering and Surveying (NCEES):

Casio:	All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
Hewlett Packard:	The HP 33s and HP 35s models, but no others.
Texas Instruments:	All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

POLICY ON CHEATING

Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university. Policies on scholastic dishonesty will be strictly enforced.

Honor Code

Civil Engineering and Construction Management are licensed professions that are regulated by each state through a licensing or engineering practice law. Each state requires engineers to protect the public safety and act in an honest and trustworthy manner. These standards of ethical behavior are also codified in ethics guidelines established by the National Society of Professional Engineers (NSPE), the American Society of Civil Engineers (ASCE), and the Texas Society of Professional Engineers (TSPE).

Department Policy

The Department has established this Honor Code Policy because it has an obligation to the State and the public to prevent students from entering the profession who are not honest and trustworthy in their academic efforts. This Honor Code Policy allows the Department to recommend disciplinary action to the University Office of Student Services and to remove students from the Department who have violated the Honor Code. This Honor Code is consistent with the Student Conduct and Discipline Chapter of the Student Affairs Section of the Handbook of Operating Procedures of the University of Texas at El Paso

<http://admin.utep.edu/Default.aspx?alias=admin.utep.edu/hoop>. The Honor Code applies to graduate and undergraduate students, faculty members, and administrators. The Honor Code is based on these requirements:

- Engineers must possess personal integrity both as students and as professionals. They must ensure safety, health, fairness, and honesty in their undertakings.
- Students in the Department are honorable and trustworthy.
- The students, faculty, and administrators of the Department trust each other to uphold the principles of the Honor Code, and they are jointly responsible for precautions against violations of its policies.
- It is dishonorable for students to receive credit for work that is not the result of their own efforts.

Department students are required to sign an Honor Code Agreement which will be kept on file with the Department. The Honor Code has been established to support and enforce course policies set by instructors. Course instructors have exceptional latitude when preparing the policies for their courses. This can lead to variations between policies of different courses. It is the instructor's responsibility to clearly develop course policies. Students are responsible for understanding the Honor Code and course policies and should consult with the instructor if they are unclear. If a student consults with the instructor and still feels the policies for a course are not clear or fair, the student should notify the Department Chairperson.

Department students enrolled in courses outside of the Department must abide by the policies of the school or college in which the course is offered. Students who are not members of the Department who take a course offered by the Department are bound by the policies of the Honor Code.