

SCHEDULE:

5

Sem. Hrs. Cr.: 4

INSTRUCTOR:

OFFICE LOCATION: Room U304A

EMAIL ADDRESS:

OFFICE HOURS: Following Class

INSTRUCTIONAL MATERIALS:

Required texts: Surveying with Construction Applications, 8th edition,
By Barry Kavanagh and Dianne K. Slattery, Pearson Prentice Hall,
ISBN 13: 978-0-13-276698-2

Reference texts: None

PREREQUISITES: None

COURSE DESCRIPTION:

The purpose of this course is to provide the student with the fundamental understanding of land surveying, including both the theory of surveying as well as the hands-on use of modern surveying instruments. Specifically, the theory portion of the course includes surveying computations of: grade, direction, traverse adjustment, area, volume, and horizontal & vertical curve geometry. The instrumentation portion of the course includes making field measurements of elevation, distance and angle using the appropriate land surveying equipment including: the tape, engineer's level, transit, theodolite, EDM, and total station. An introduction to construction layout is also included.

COURSE OBJECTIVES:

This course will give you the basic tools to understand construction surveying:

1. Data Processing, Location Methods, Reciprocal & Trigonometric Leveling.
2. Types and techniques of distance measurement, slope, instrument and temperature corrections.
3. Angle and bearing measurements and application of angle measurements.
4. Total Surveying, Layout surveying, Theodolites and Traverse Survey, Balancing & adjustments.
5. Topographic, Hydrographic and Geographic Surveying.
6. Control and Grid Surveys.
7. Satellite Imagery and the different types.

COURSE OUTCOMES

Upon successful course completion, students will be able to:

1. Understand the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences.
2. Understand the use of a transit to determine vertical and horizontal angles to locate reference points as applied to construction staking and surveying.
3. Students will have an improved understanding of the rule on Construction Surveying and layout in the operation of the construction industry

COURSE OUTLINE:

Each class will have a lecture on the topics outlined from the textbook and handouts. Along with the lectures there will be classroom discussions on the covered topics. Students will participate in the use of the various pieces of equipment used in construction surveying. Assignments and Project work should be scanned or printed to PDF and uploaded to the Student Portal for evaluation and grading. See Syllabus at the end of the course outline.

CLASSROOM POLICIES:

Academic honesty:

Each student is expected to perform his/her own individual work. Plagiarism, cheating or copying another student's work will result in a failing grade for that assignment. A second violation will result in a failing grade for the course.

Attendance policy:

Class attendance is extremely important. Students are expected to attend all classes on time. Student's attendance will be monitored and submitted to the registrar through the CAMS portal as required by college policy. Students will be marked as Present, Absent, Late, Tardy or Excused. Tardy will be chosen if the student is so late to class that their attendance is considered and absence.

Makeup policy:

Makeup work may be allowed subject to instructor approval only. **THERE WILL BE NO MAKEUP TESTS.**

Examination policy:

Students are to remain quiet during the exam time with no communication with other students. If a student has a question they may raise their hand or approach the instructor at the front of the classroom .

Computer use policy:

The computer/internet will not be used during class time except during breaks or instructor assigned tasks. Laptop use is not allowed during class time and they shall remain closed at all times. Laptop use is allowed during breaks and by the instructor's direction only.

Food and cell phone use policy:

Cell phones should be turned off before class begins and not turned on at anytime during class. **Texting during class time is forbidden.** Students will be given one warning, after the first warning the student will be asked to place their cell phone in the drawer at the teacher's desk at the beginning of class and be able to retrieve the cell phone at the end of class. Food and beverages are not allowed in the classroom.

Support services:

Tutoring and additional instruction is available at various times and will be established at the beginning of the semester.

If you feel that you may need additional support or an accommodation because of a disability or a learning challenge, please contact the instructor or Sally Heckel (Assistant Director of Advising) to discuss your specific needs. The Assistant Director of Advising, in Room U110A inside the Academic Success Center, will work with you and the instructor to coordinate reasonable accommodations or additional support. BFIT and I are committed to helping you succeed. Please feel free to discuss any aspect of this course with me.

EMAIL Protocol

When emailing the professor or other students in this class, students are to follow the following standards:

-Subject line shall ALWAYS start with CM250 and then have the topic of the email.

-if the topic is an assignment then the topic shall be that assignments name, i.e.: CM250 - Absence, CM250 - HW01, etc.

There are NO EXCEPTIONS to this rule. I will not answer emails that are not properly formatted. I will respond and request that the email be properly formatted.

File Naming Protocol

When emailing a file to the professor or other students in this class, students are to follow the following standards:

-All files are to be submitted as PDF files, no exceptions, unless specified otherwise.

-The file name shall ALWAYS start with CM250, then the students last name and then the topic of the file and then have the date the file is submitted. The date shall be formatted as follows YY-MMDD, ex.: 16-0118 is January 18th, 2016.

-The following is a proper example of file naming if I was to hand in assignment No. 1: **CM250-SMITH-HW01-16-0118.pdf**

Please notice that there are single spaces between all words and only the first letters are capitalized. Also there are no spaces around the hyphen in the date.

BUILDING TECHNOLOGY DEPARTMENT ABBREVIATIONS:

-BT=Building Technology, CM=Construction Management, EX=Exam, HW=Homework, LA=Lab, LE=Lecture, PM=Problem, PR=Project, QU=Quiz, TE=Test, SA= Syllabus,

There are NO EXCEPTIONS to these rules. The professor will not look at or grade any hand-ins from students that are not properly formatted. **SAVING AND BACKING UP DIGITAL FILES**

Students are expected to save their digital files in more than one location, ergo the original digital files are backed up. This includes any and all files that are created for the class, including files that may not be turned into the professor. Students will not rely on the professor for backing up any of their files. Students who lose their files at anytime during the semester will be expected to recreate the files and hand them in on time or as soon as they can after recreating the files. There are multiple free venues for backing up files online. The easiest way to backup your files is to email them to yourself, they will then be saved to the mail server of your email service provider and easily retrieved from any computer with internet access.

EVALUATION METHODS:

- Grades for this course are based on a number of variables, including the originality of the design concept and how well it conforms with the stated learning objectives. Emphasis is placed on graphic skills, comprehension, and completeness of assignments, as well as attendance, preparedness, attitude, and effort.
- All students are required to attend all classes on time. Not being present or punctual will result in a grade decrease at mid-term and final.
- All work assigned in class is to be completed as outlined in the syllabus. Any incomplete work is to be done as homework and handed in at the beginning of the next class. Work turned in later than the following class will result in a grade deduction. Any project submitted more than one week after the due date will not be accepted and will result in a failing grade for that project.

GRADING:		Grading scale			HOURS ABSENT	NUMERICAL GRADE
Tests / Quizzes	30%	A (95-100)	A- (90-94)		0	100
Homework Assignments	20%	B+ (87-89)	B (84-86)	B- (80-83)	3	90
Project	30%	C+ (77-79)	C (74-76)	C- (70-73)	6	80
Attendance	10%	D+ (67-69)	D (60-66) F (0-59)		9	70
Instructor evaluation	10%				12	60
					15	50

Expectation of student work outside the classroom.

It is expected that each student will spend minimally **2 hours per course credit hour** outside of the classroom and lab to work on the following for Construction Estimating, which will include but is not limited to: **Readings in required texts, Homework assignments from texts, Studying for tests, Completion of in-class assignments.**

CONSEQUENCES OF FAILING THIS CLASS:

The student is responsible for knowing what is considered a “passing grade” for this course in their specific program. Some programs do not accept a letter grade below “C” as a passing grade. Further, students are responsible for knowing the academic policies of both their program and the college (See Student Handbook for more information).

Scoring Rubric for CM250 - Construction Surveying

A, A-	All class work completed and submitted in a timely manner.
90-100	<p>Student has a solid understanding of the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences.</p> <p>Student comes to class prepared; has read reading assignments and homework is complete and handed in on time.</p> <p>Student is actively involved in the learning process; participates in class discussions, uses class time efficiently and exhibits a good attitude towards projects, fellow students and instructor.</p>
B+,B,B-	Most class work submitted in a timely manner and all class work completed.
80-89	<p>Student has a good understanding of the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences.</p> <p>Student often comes to class prepared; has read most reading assignment and homework is complete and handed in on time.</p> <p>Student is actively involved in the learning process; participates in most class discussions, uses class time efficiently most of the time and his/her attitude towards projects, fellow students and instructor is good.</p>
C+,C,C-	Most class work submitted in a timely manner with some class work late or incomplete.
70-79	<p>Student understands the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences covered in class with some difficulty.</p> <p>Student comes to class prepared, although is unprepared with some reading assignments and homework assignments completed.</p> <p>Student has a satisfactory attitude towards projects, fellow students and instructor.</p>
D+, D	Most class work not submitted in a timely manner and some incomplete or not submitted.
60-69	<p>Student understands the use of measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences covered in class but struggles to keep up.</p> <p>Student seldom comes to class prepared, and is unprepared with few reading assignments and homework assignments completed.</p> <p>Student must improve both work and attitude.</p>
F	Most class work not submitted or incomplete.
0-59	Student understands few of the measuring systems and the proper mathematical calculations to produce accurate and correct true distances and the use of a level and the mathematical calculations to determine elevation differences concepts covered in class.

Student doesn't come to class prepared, and is unprepared without doing reading assignments and homework assignments are incomplete. Student must improve both work and attitude to continue course of study.

Note: It is the responsibility of each student to check CANVAS daily for up to date assignments and any course changes.

Week	Class Topic		Homework
1	Course introduction & Lecture on Chapter 1	Basics of Survey - Surveying Methods. Describe instruments, errors & mistakes.	Assignment 1: Question 1.1 thru 1.10.
2	Lecture on Chapter 2	Leveling	Respond in class Review Questions of Chapter.1. In class Review Questions of Chapter 2.
3	Lecture on Chapter 2	Leveling Example problems solved in class	Submit updated copy of classroom work.
	Lecture on Chapter 3	Types & technics of Distance measurement Slope, instrument and temperature corrections.	Review in class Chapter Questions.
4	Lecture on Chapter 4	Lecture on Angle and bearing measurements	Read Chapter 5
	Lecture on Chapter 4	Application of angle measurements	Assignment2: Chapter Review Questions.
5	Lecture on Chapter 5	Lecture & classroom Discussion. On Total Surveying, Layout surveying & Theodolites.	Assignment3: Summary of chapter to be used in Lab session.
6	Lecture on Chapter 6	Lecture on coordinate in traverse surveys. Balancing and adjustments.	Assignment4: Review Chapter Questions. For Lab work
	Lecture on Chapter 7	Lecture on use of satellites & Stations	Chapter Review Questions in class.
7	Review for Mid Term	Concentrate on Chapters 1-7	
	Mid Term Exam		
MIDTERM GRADES DUE			
8	Lecture on Chapter 8	Topographic & Hydrographic Surveying.	Respond to Chapter Review Questions.
	Lecture on Chapter 8	Lecture: Prismoidal Formula & Area Computations	Assignment5: Respond to Chapter Review Questions
9	Lecture on Chapter 9	Lecture on Geographic Surveys	Review Chapter Questions
	Lecture on Chapter 9	Lecture on Topology & Types of Data	Review Chapter Questions
10	Lecture on Chapter 10	Lecture on Control Surveys.	Review Chapter Questions
	Lecture on Chapter 10	Lecture: on Grid Surveys	Discuss in class Formulas & Data.
11	Lecture on Chapter 11	Lecture on Chapter 11. Satellite Imagery	Discuss Term Project. Essay on purpose, Instruments, methods and applications of Surveying
	Lecture on Chapter 11	Type of Satellites. Airborne vs Satellite imagery	Submit notes on Chapter Reviews
12	Lecture on Chapter 12	Airborne imagery, Flying Heights & Altitudes	
	Lecture on Chapter 12	Ground Control for Mapping	Assignment 6: Review Chapter Review Questions
13	Lecture on Chapter 13	Engineering Surveys	Continue calculations commenced in class

Week	Class Topic		Homework
	Lecture on Chapter 13	Municipal Survey Services	Assignment 7: Submit Responses to Review Questions & Problems
14	Lecture on Chapter 14	Land Surveys	Submit Term Project
	Lecture on Chapter 14	Property Conveyance & legal terminologies.	Prepare for Final Exam
15	Final Exam Review		
	Final Exam		
	FINAL GRADES DUE		

