

Course Number and Name	CE281-2 Surveying1
Credits hours	2 Credits hours
Contact hours	4 Contact hours; 1 for lecture, 1 for Tutorial and 2 for practical
Instructor/s name/s	Dr. Mahmoud Abdlrahim Abdelgiom
Textbook	Elementary Surveying: An Introduction to Geomatics", (12th Edition) by Charles D. Ghilani and Paul R. Wolf (Hardcover - Jan 10, 2008).
Other supplemental materials	1- Surveying (5th edition), McCormacm Jack C., Jack C. McCormac, 2003, Publisher: John Wiley & Sons Inc. 2- Surveying: With Construction Applications (6th edition), Barry F. Kavanagh, 2008, Publisher: Prentice Hall. 3-Lecture notes
Specific course information	
a. Catalog description	This course presents the fundamentals of surveying with particular emphasis on instrumental procedures and simple computation methods. Methods employed for distance measurement, vertical and horizontal control, leveling, and measurement of angles, bearing determination, traverse closure, area determination, and construction layout are considered.
b. Prerequisite	MATH 212-3
c. Required / Elective	Required
Specific goals for the course	
Course Learning Outcomes (CLOs)	By the end of this course, the student should be able to: CLO#1 Identify the fundamental principles of land surveying science. CLO#2 Classify sources and types of errors in surveying measurements. CLO#3 Apply the correction formulae to the measured distances using the tape. CLO#4 Compute the unknown survey parameters such as points coordinates, the reduced levels of the ground points, the area of a closed traverse and the related volumes and earthworks. CLO#5 Operate the automatic and digital level and digital Theodolite in field measurements. CLO#6 Measure the horizontal and vertical angles in a closed traverse using digital Theodolite. CLO#7 Evaluate the horizontal and vertical distance using stadia method.
Student outcomes that addressed by the course	The following student outcomes are addressed by the course: SO1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. SO6: An ability to develop and conduct appropriate experimentation , analyze and interpret data, and use engineering judgment to draw conclusions. SO7: An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Topics to be covered	
Topic	Number of weeks
1. General Introduction about Surveying1	2
2. Basics of Distances Measurement.	2
3. Theory of errors, tapes errors and correction	2
4. Basics of levellings	2
5. Reduction of levelling	2
6. Theodolites, Angles measurements, Azimuth ,Bearing, and Traversing	2
7.Thacomeric Surveying	2
8- Reduction of areas and volumes of the earthwork	1

Schedule of Assessment Tasks for Students During the Semester

Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week due	Proportion of Total Assessment
Homework and Lab	By the end of each chapter	20
Quizzes	By the end of each chapter	10
Midterm-exam I	7 th week	10
Midterm-exam II	12 th week	10
Presentation	14 th week	20
Final Exam	Final week	30

CLO-SO Map

	S01	S02	S03	S04	S05	S06	S07
CLO 1							√
CLO 2							√
CLO 3	√						
CLO 4	√						
CLO 5						√	
CLO 6						√	