

Civil and Environmental Engineering Department
Course Syllabus

Instructor Name	Dr. Sameh S. Ahmed				
Course Title:	Surveying I	Course code:	CE 370	Cr.Hrs:	(2,1,2)
Prerequisite:	Math 107	Co-requisite:	---	Tutorial Time:	WE.: 11:00– 12:00 pm
Academic Year:	2018/2019		Semester:	First	
Lecture Times:	WE: 08:00-10:00		Lab Time:		
Office Hours	TU.: 9-11:00		Office number	003-2-40-5	

Course Objectives

This course aims to achieve the following objectives	
1	Provide the student with the principles of surveying and training on surveying instruments
2	Acquire the student skills in technical knowledge about different surveying's
3	Be able to compute area and volumes from maps or field measurements and conduct territory division
4	Ability to computing the co-ordinates of the positions & setting the positions on map
5	Ability to use the leveling instruments and, skills, to carry out several surveying application in the field of road constriction and earthwork calculations

Student Learning Outcomes

Course Learning Outcomes		ABET Student Outcomes
By the end of this course the students will be able to		
1	Get accurate measurements using the recent surveying instruments and operating surveying software programs.	a,k,h
2	Be able to read and construct cadastral maps for different engineering projects.	a,b,d,e,k
3	Compute cut & fill or materials volumes for any project.	a,b,e,f
4	Conduct land settlement using leveling methods and draw longitudinal and cross sections.	a,b,k
5	Conduct accurate measurements and function in a team work.	d,e,f

Assessment

N	Methods of Assessment	Assessed Learning Outcomes	Maximum Score
1	First exam	1,2	15
2	Second exam	2,3,4	15
3	Quizzes, Report, and homework	1,2,3,4,5	20
4	Lab Exam	1,4	10
5	Final Exam	1,2,3,4,5	40
	Total		100

Course Contents

N	Short Description	Week
1	Basic Definitions: What is Surveying? - Plane Surveying - Topographic Surveying - Geodesy - Photogrammetric - GIS, Remote Sensing - GPS.	1
2	Units of Measurement: Metric equivalentents - Tables - Field notes - Methods of keeping notes - Errors and mistakes - Accuracy and Precision.	2

3	Measurement of Distances: Horizontal distance - Chains - Taps and its equipment - slope measurement by vertical angles.	1
4	Measurement of Angles: Horizontal angles - Vertical angles - Angles by compass - Angles with the plane tables - Cadastral surveying - Practical exercises - Planimeter and its applications.	2
5	Traverse Surveys and Computations: Traverse - Open traverse -Closed Traverse - Traverse computations - Traverse closure - Methods of plotting traverses.	1
6	Midterm 1	1
7	Leveling: General - Longitudinal leveling - Cross sections - Trigonometric leveling - Direct differential leveling -the Dumpy level - Sources of error in leveling.	2
8	Profiles and areas measurement	2
9	Field operations with transit	1
10	Earthwork quantities: Remarks - Cross Sections - Distance between Cross sections - Calculation of areas - Volume by average end area - Earthwork quantities	1
11	Midterm-II	1
12	Contour maps	1

Books	
Textbook:	Barry, F. Kavanagh, "Surveying with Construction Application" (last edition)
References:	Barry, F.K. and Gelnbind, S.J., "Surveying: Principles and Applications", 5th edition, Prentice - Hall.