The University of Jordan
Faculty of Engineering & Technology
Civil Engineering Department

CE*0901281* Surveying
Spring 2014

2010 Course Catalog
3 Credit hours (3 h lectures). Principles of surveying; linear measurements, chain surveying, leveling and its application in contouring, profiles and cross-sections. Areas, volumes, and earthwork. Measurement of angles; traverse surveys, tacheometry and electronic distance measurements (EDM). Theory of errors and adjustments. Principles of triangulation. Total Stations.

.

Text Books		
	Text book 1	**Text book 2**
Title	Fundamentals of Surveying,	Fundamentals of Surveying,
Author(s)	Schmidt and Kam W. Wong	Prof. Yousif Syam (Arabic Reference)
Publisher	-	-
Year	1983	-
Edition	Third edition	-

References	
Books	1. Surveying by Bannister and Raymond1. 2. Surveying Practice by Kissam 3. Elementary Surveying by Brinker and Wolf 4. Site Surveying and Leveling by Clancy 5. Surveying for Civil Engineers by Kissam 6. Surveying Theory and Practice by Davis *et. al*
Journals	
Internet links	

Instructor	
Instructor	**Prof. Mohammed T. Obaidat,** E-mail**:** m_obaidat@ju.edu.jo

Prerequisites	
Prerequisites by topic	Linear Algebra, Statistics and Probability.
Prerequisites by course	Math. 101
Co-requisites by course	Surveying Lab.
Prerequisite for	-

Objectives and Outcomes[1]	
Objectives	**Outcomes**
1. understand the basic principles of surveying. [a,e,k]	1.1. Understand differences between measurements and computations [a, e, k] 1.2. Deal with theory of errors and propagation. [a,e,k]
2. use surveying instruments. [b,f,i,k]	2.1. Know surveying instruments, their components, setup procedures, and

[1] Lower-case letters in brackets refer to the Program outcomes

	applications[b,i,k] 2.2. Deal with Total Stations, EDM and Stadia. [b,f]
3. deal with linear and non-linear measurements. [a,b,c,e,f,h,k]	3.1. Know how to measure horz., vert. and slope distances. [a,b,c,e,h,k] 3.2. Know how deal with levelling networks using HI, and rise and fall methods. [a,b,c,e,f,h,k] 3.3. Know vertical and horizontal angles, bearings, coordinates, and traverse computation and adjustment. [a,c,e,h,k]
4. know earth work computation. [a,b,c,d,e,f,g,h,i,k]	4.1. Contour and topographic mapping, profile, and x-sections. [a,b,c,d,e,f,i,k] 4.2. Area, volume and Mass-Haul-Diagram computation[a,b,c,d,e,f,g,h,k] 4.3. Earth work cost analysis[a,b,c,d,e,f,g,h,k]
5. know Geomatics branches, types and applications. [a,b,c,d,e,h,j,k]	5.1. Use GIS, GPS, and remote-sensing as measurements tolos. [a,b,c,e,h,j,k] 5.2. Know branches and types of Surveying[c,d,g,j,k]

Topics Covered

Week	Topics	Chapters in Text
1	1. Introduction and basic principles of surveying	Chapter 1
2	2. Theory of errors	Chapter 2
3	3. Tape measurements (chain survey)	Chapter 3
4-5	4. Leveling and contour lines	Chapter 4
6-7	5. Areas and volumes	Chapter 5
8	6. Mass haul diagram	Chapter 6
9-10	7. Angle measurement	Chapter 7
11	8. Coordinate geometry	Chapter 8
12	9. Traverses	Chapter 9
13 One lect.	10. Stadia and total station	Chapter 10
13 Two lect.	11. Land Survey	Chapter 11
14 Two lect.	12. Horizontal control surveys (Triangulation)	Chapter 12
14 One lect	13. Electronic distance measurement (EDM)	Chapter 13
15 Two lect.	14. Photogrammetric engineering and remote sensing	Chapter 14
15 One lect.	15. Construction survey	Chapter 15
16 One lect.	16. Plane table and laser level	Chapter 16
16 On lect.	17. Geographic Information Systems (GIS).	Chapter 17
16 One lect.	18. Total Stations	Chapter 18

Evaluation

Assessment Tool	Expected Due Date	Weight
Homework, Quizzes, & Proj.	One week after homework problems are assigned	20%
Midterm Exam	According to the department schedule	30 %
Final Exam	According to the University final examination schedule	50 %

Contribution of Course to Meeting the Professional Component

The course contributes to building the fundamental basic concepts, applications, instruments, and usage of measurements and earth work in Civil Engineering Projects.

Relationship to Program Outcomes (%)

A	B	C	D	E	F	G	H	I	J	K
40%	6%	10%	4%	15%	3%	3%	5%	5%	4%	5%

Relationship to Civil Engineering Program Objectives

PEO1	PEO2	PEO3	PEO 4	PEO 5	PEO 6
√	√	√	√	√	√

Prepared by: Prof. Mohammed Taleb Obaidat
Last Modified: Feb. 12, 2014