

ISHIK UNIVERSITY FACULTY OF ENGINEERING Department of CIVIL ENGINEERING, 2018-2019 Fall Course Information for CE 215 SURVEYING I						
Course Name:		SURVEYING I				
Code	Course type	Regular Semester	Theoretical	Practical	Credits	ECTS
CE 215	2	3	2	2	3	
Name of Lecturer(s)- Academic Title:		Asma Abdulmajed Mustafa - Barham Haydar - MSc				
Teaching Assistant:		-				
Course Language:		English				
Course Type:		Main				
Office Hours		Tuesday 13:00-15:00				
Contact Email:		asmaa.abdulgajeed@ishik.edu.iq barham.haydar@ishik.edu.iq  Tel:0000 07705042603				
Teacher's academic profile:		MSc holder in construction materials				
Course Objectives:		The student will be introduced to the basic surveying calculations. The goal is that the student will have a feel for the accuracy, precision and limitations of the survey data and, be able to make a judgment call that the data can be relied on for inclusion into a design and/or that the survey procedures will meet the construction staking requirements. Students will obtain a full understanding of the nature of surveying data, including errors and the need for error control. At the end of the course the students will be able to learn the importance of surveying to Civil Engineers, objectives of surveying, types of surveys, classes of surveys, units of measurement, profile and cross section, Contour and contouring, areas, area enclosed by regular straight boundaries, area enclosed by irregular boundaries, computation of areas from field notes, computation of areas from plotted plans, the average ordinate rule, trapezoidal rule, Simpson's Rule, surveying instruments which are Level, Theodolite and Total Station.				
Course Description (Course overview):		Introduction, course outline, the general concept of survey: the survey types, principles of survey and its uses, Use a measuring tape, Adjustment of the measurements: errors and mistakes, the types of errors, precision and perfection, the principles of the theory of accumulation of errors, linear measurements: measurement tools, methods of measuring distance and accuracy of the tape, survey of details, Obstructions, errors of measurement tape, Leveling: types of Leveling, Leveling equipment, differential Leveling, longitudinal sections, the mistakes in the Leveling process.				
COURSE CONTENT						
Week	Hour	Date	Topic			
1	2	2-4/10/2018	Basics of Surveying, Types of Surveys, Stationing, Errors, Accuracy Ratio, Surveying Instruments, Units of Measurement			
2	2	7-11/10/2018	Tape Correction			
3	2	14-18/10/2018	Slope Corrections, Temperature Corrections, Tension Corrections, Sag Corrections, Erroneous Incorrect Tape Length Corrections			
4	2	21-25/10/2018	Examples of Tape Correction			
5	2	28/10-1/11/2018	Level Instrument, Application of Level			
6	2	4-8/11/2018	Basic Rules for leveling, Definitions, Field notes			
7	2	11-15/11/2018	Procedure of leveling, Leveling errors, Types of leveling			
8	2	18-22/11/2018	Midterm Exam			

9	2	25-29/11/2018	Methods of Leveling, Height of Collimation Method (HI), Rise and Fall Method
10	2	2-6/12/2018	Areas and Methods for Measuring Area
11	2	9-13/12/2018	Volume and Methods for Measuring Volume
12	2	16-20/12/2018	Introduction to Theodolite
13	2	23-24/12/2018	Angles and Directions
14	2	2-3/1/2019	Traversing in Theodolite
15	2	7-10/1/2019	Review of the Course
16	2	13-17/1/2019	Final Exam
17	2	20-24/1/2019	Final Exam
COURSE/STUDENT LEARNING OUTCOMES			
1	By collecting data with errors, students gain a better appreciation of data quality and how instruments and field techniques contribute to error.		
2	Students learn to work with others, respect the contributions of others, resolve difficulties, and understand responsibility.		
3	Students will learn surveying techniques that will remain current for long periods of time.		
4	Students learn how surveying data may be stored and retrieved for a variety of purposes.		
5	Students learn how surveying data is clearly and ethically reported.		
COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES (Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )			
Program Learning Outcomes			Cont.
1	An ability to apply knowledge of mathematics, science, and engineering		I
2	An ability to design and conduct experiments, as well as to analyze and interpret data		I
3	An ability to design a system, component, or process to meet desired needs		I
4	An ability to identify, formulate and solve engineering problems		I
5	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice		I
6	Skills in project management and recognition of international standards and methodologies		P
7	An ability to function on multi-disciplinary teams		P
8	An understanding of professional and ethical responsibility		P
9	An ability to communicate effectively		
10	The broad education necessary to understand the impact of engineering solutions in a global and social context		
11	A recognition of the need for and ability to engage in, lifelong learning		
12	A knowledge of contemporary issues		
Prerequisites (Course Reading List and References):		Basic Mathematics, Computer Aided Draft CAD	
Student's obligation (Special Requirements):		scientific calculator, lecture handouts	
Weekly Laboratory/Practice Plan:		Week	Hour
		Date	Topics
		1	2
		2-4/10/2018	Distance Measurement by Tape and Pacing
		2	2
		7-11/10/2018	Simple Leveling
		3	2
		14-18/10/2018	Differential Leveling
		4	2
		21-25/10/2018	Fly Leveling
		5	2
		28/10-1/11/2018	Reciprocal Leveling

	6	2	4-8/11/2018	Profile and Cross Section Leveling
	7	2	11-15/11/2018	Contour
	8	2	18-22/11/2018	Centering and Leveling - Theodolite
	9	2	25-29/11/2018	Measurement of Horizontal Angles By Repetition Method - Theodolite
	10	2	2-6/12/2018	Measurement of Horizontal Angles By Reiteration Method - Theodolite
	11	2	9-13/12/2018	Measurement of Vertical Angles - Theodolite
	12	2	16-20/12/2018	Horizontal Angle Measurement of a Closed Traverse - Theodolite
	13	2	23-24/12/2018	Traversing F.L. Hz. Angle - Theodolite
	14	2	2-3/1/2019	Trigonometric Levelling - Theodolite
	15	2	7-10/1/2019	Introduction to Total Station
	16	2	13-17/1/2019	Practical 1 Total station
	17	2	20-24/1/2019	Practical 2 Total station
<b>Course Book/Textbook:</b>	“Surveying , Problem Solving with Theory and Objective Type Questions”, by Dr. A. M. Chandra, 2005. “Surveying with Construction Application”, Barry F. Kavanagh, 7th Edition, Prentice Hall, 2010.			
<b>Other Course Materials/References:</b>	“The Principles of Surveying” , by J. Clendinning, 2nd Edition, 1960. “Engineering Surveying”, by W. Schofield and M. Breach, 6th Edition, 2007.			
<b>Teaching Methods (Forms of Teaching):</b>	Lectures, Practical Sessions, Excersises, Project, Assignments			
<b>COURSE EVALUATION CRITERIA</b>				
<b>Method</b>			<b>Quantity</b>	<b>Percentage (%)</b>
Quiz			1	10
Homework			1	10
Midterm Exam(s)			1	30
Laboratory			1	10
Final Exam			1	40
<b>Total</b>				<b>100</b>
<b>Examinations:</b> Essay Questions, True-False, Multiple Choices, Short Answers				
<b>Extra Notes:</b>				
<b>ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD</b>				
<b>Activities</b>	<b>Quantity</b>	<b>Duration (Hour)</b>	<b>Total Work Load</b>	
Course Duration (Including the exam week: 16x Total course hours)	1	560	560	
Hours for off-the-classroom study (Pre-study, practice)			0	
Assignments Mid-terms			0	
Final examination			0	
Other			0	
<b>Total Workload</b>			<b>560</b>	
<b>ECTS Credit (Total workload/25)</b>			<b>22.4</b>	

**Peer review**

Signature:  
Name:  
Lecturer

Signature:  
Name:  
Head of Department

Signature:  
Name:  
Dean