

<p style="text-align: center;">TISHK INTERNATIONAL UNIVERSITY FACULTY OF ENGINEERING Department of CIVIL ENGINEERING, 2020-2021 Spring Course Information for CE 216 SURVEYING II</p>					
Course Name:	SURVEYING II				
Code	Regular Semester	Theoretical	Practical	Credits	ECTS
CE 216	4	2	2	3	
Name of Lecturer(s)- Academic Title:	Bakhtyar Ahmed -				
Teaching Assistant:	-				
Course Language:	English				
Course Type:	Main				
Office Hours	Monday 14:00-16:00				
Contact Email:	bakhtyar.ahmed@tiu.edu.iq				
	Tel:7509214878				
Teacher's academic profile:	In 2016-2017 as a lecturer in surveying engineering department, I had lecture for two different subjects [Surveying and Data processing (AutoCAD and Auto land civil 3D)]. In 2017-2018 as a lecturer in surveying engineering department, I had lecture for three different subjects [Surveying1 and Data processing (AutoCAD and Auto land civil 3D) and Global Geodesy].				
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 is Level.				
Course Description (Course overview):	Methods of calculation and Measurements of area, Methods of calculation and Measurements of area, calculation and Measurements of volume, Types of polygons, methods of calculating trends and its adjustments, methods of calculating the coordinates and their adjustments , ribbing compass. methods of calculating the coordinates and their adjustments , ribbing compass. Topographic surveying, Angles and Trends: theodolite compass, methods of measuring angles and directions, mistakes, Introduction to the total station.				
COURSE CONTENT					
Week	Hour	Date	Topic		
1	2	31/1-4/2/2021	Introduction		
2	2	7-11/2/2021	Introduction to Course, Introduction to Theodolite.		
3	2	14-18/2/2021	Angle and direction measurement.		
4	2	21-25/2/2021	Different Types of Horizontal Angles, Direction of a Line, Units of Angle Measurements.		
5	2	28/2-4/3/2021	Bearing, Azimuth.		
6	2	7-11/3/2021	TRAVERSING, Traversing Computations, Traversing Angular Error, Traversing Precision, Linear Misclosure.		
7	2	28/3-1/4/2021	Traverse Area Computations, The Coordinate method, Double Meridian Distance Method.		
8	2	4-8/4/2021	Trigonometric Levelling.		
9	2	11-15/4/2021	Midterm Exam		

10	2	18-22/4/2021	Midterm Exam
11	2	25-29/4/2021	Designation of the circular curves.
12	2	2-6/5/2021	Horizontal Curves.
13	2	9-13/5/2021	Vertical Curves.
14	2	16-20/5/2021	Construction Survey.
15	2	23-27/5/2021	Total Station
16	2	30/5-3/6/2021	Total Station
17	2	6-10/6/2021	Final Exam
18	2	13-17/6/2021	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	Apply principles of mathematics, science, and engineering	I
2	Design and conduct experiments, as well as analyze and interpret data accurately.	I
3	Design an engineering system, component, or process to meet desired industrial needs.	I
4	Identify, formulate and solve complex engineering problems	I
5	Apply, in design and construction, the most modern design codes, standards and specifications such as; AISC, ACI, ASCE 7, IBC, etc.	I
6	Use the techniques, skills, and modern engineering tools, such as surveying instruments, and designing software that are necessary for engineering practices.	P
7	Apply knowledge and skills in construction project management and recognition of international standards and methodologies	P
8	Manage to work with multi-disciplinary teams and communicate effectively.	P
9	Identify the moral values that ought to guide the Civil Engineering profession and resolve the moral issues in the profession.	
10	Apply the principles of sustainable development in their professional duties which go in line with the paramount safety, health and welfare of the public.	
11	Analyze the impact of engineering solutions in a global and social context	
12	Identify the need and have the ability to engage in lifelong learning and knowledge of contemporary issues.	

Prerequisites (Course Reading List and References):	Basic Mathematics, Computer Aided Draft CAD.
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Student's obligation (Special Requirements):	scientific calculator, lecture handouts.
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Weekly Laboratory/Practice Plan:	Week	Hour	Date	Topics
	1	2	31/1-4/2/2021	Centering and Leveling – Theodolite
	2	2	7-11/2/2021	Measurement of Horizontal Angles by General Method – Theodolite
	3	2	14-18/2/2021	Measurement of Horizontal Angles By Repetition

	4	2	21-25/2/2021	Method – Theodolite Measurement of Vertical Angles – Theodolite	
	5	2	28/2-4/3/2021	Horizontal Angle Measurement of a Closed Traverse – Theodolite	
	6	2	7-11/3/2021	Traversing F.L. Hz. Angle – Theodolite	
	7	2	28/3-1/4/2021	- Trigonometric Levelling – Theodolite	
	8	2	4-8/4/2021	Setting out the circular curve by chord and deflection angle method.	
	9	2	11-15/4/2021	Setting out the circular curve by offset from the tangent method.	
	10	2	18-22/4/2021	Construction survey.	
	11	2	25-29/4/2021	Total station.	
	12	2	2-6/5/2021	Total station.	
	13	2	9-13/5/2021		
	14	2	16-20/5/2021		
	15	2	23-27/5/2021		
	16	2	30/5-3/6/2021		
	17	2	6-10/6/2021		
	18	2	13-17/6/2021		
Course Book/Textbook:	Ghilani, C. D. and P. R. WOLF (2014). Elementary Surveying: An Introduction to Geomatics. New Jersey, PEARSON.				
Other Course Materials/References:	Uren, J. and B. Price (2010). Surveying for Engineers. UK, PALGRAVE MACMILLAN.				
Teaching Methods (Forms of Teaching):	Lectures, Practical Sessions, Excercises, Project, Assignments				
COURSE EVALUATION CRITERIA					
Method			Quantity	Percentage (%)	
Attendance			1	5	
Quiz			1	5	
Homework			1	10	
Midterm Exam(s)			1	30	
Laboratory			1	10	
Final Exam			1	40	
	Total			100	
Examinations: Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Matching					
Extra Notes:					
ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD					
Activities			Quantity	Workload Hours for 1 quantity*	Total Workload
Theoretical Hours			18	2	36
Practical Hours			18	2	18

Final Exam	1	15	15
Attendance	1	5	5
Quiz	1	10	10
Homework	1	30	30
Midterm Exam(s)	1	10	10
Laboratory	1		0
Total Workload			124
ECTS Credit (Total workload/25)			4.96

Peer review

Signature:

Name:

Lecturer

Signature:

Name:

Head of Department

Signature:

Name:

Dean