KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY
(KUST)

ENGINEERING SURVEYING AND LAB SYLLABUS			
Course Title	**Engineering Surveying**		
Course Code	**CVE 2310C**	**No. of Credits**	**3 CHR**
Department	**Department of Civil Engineering**	**College**	**College of Civil Engineering**
Pre-requisites Course Code	**ENG 1200**	**Co-requisites Course Code**	**N/A**
Course Coordinator(s)	**Sardasht Sardar**		
Email	**Sardasht.sardar@komar.edu.iq**	**Room No.**	**238**
Other Course Teacher(s)/Tutor(s)	**Non**		
Class Hours	**M,W (16:00 – 17:30)**		
Contact Hours	**M,W (09:00 – 10:30)**		
Course Type	**Department Course**		
Offer in Academic Year	**Spring 2016**		

COURSE DESCRIPTION

This course covers the principles of measurements of distances, elevations, and angles. It also includes basic error, theory in measurement and calculations, traverse calculations, and basic principles of surveying and mapmaking.

COURSE OBJECTIVES

- Introduce the student to the basic concepts of surveying calculations, error analysis, adjustments and corrections to field survey data.
- Provide the future's feel for the survey data's accuracy, adequacy, and limitations for use in engineering designs, property surveys, or construction layout staking.

COURSE LEARNING OUTCOMES

After participating in the course, students would be able to:

1. Understand the basic principles of engineering surveying. [ABET outcome program - a]
2. Employ appropriate surveying data capture techniques. [ABET outcome program - k]
3. Understand surveying data management methods and tools.[ABET outcome program - k]
4. Analyze surveying data using appropriate computational and analytical techniques. [ABET outcome program - b]
5. Use the data for the design and setting out of engineering works. [ABET outcome program - b]

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GUIDELINES ON GRADING POLICY

Points	*Percentage Scores*	*Grade*
A *A-*	*95–100* *90-94*	*4.0* *3.7*
B+ *B* *B-*	*87–89* *83-86* *80-82*	*3.3* *3.0* *2.7*
C+ *C* *C-*	*75–79* *70-74* *65-69*	*2.3* *2.0* *1.7*
D+ *D* *D-*	*60–64* *55-59* *50-54*	*1.3* *1.0* *0.7*
F	*0–49*	*0*
I	*Incomplete Course Work*	
W	*Official Withdrawal*	

Passing Grade is 65% or above

COURSE TEACHING AND LEARNING ACTIVITIES

Course Teaching and Learning Activities:

- **Lectures**: during week, the theoretical sessions will be presented throughout the semester; the discussion of surveying work within field will be organized and illustrated with activities.
- **Field Trip**: Students will visit the KUST Campus(New Campus Construction Site) and make a filed report to cover using leveling Instrument, and Total station, also be prepared to be out in the day during their time at Campus and wear full length trousers, shoes that cover toes, long sleeved shirts, hats, gloves, sun screen, and insect repellent.
- **Case Study (homework)**: after the lectures during class, the Case Study will be explained and expected to be done on weekly activities as homework based on specific topics.
- **Group work**: during session students will combine together and form in small groups to discuss the topics and work upon it during each topic.
- **Quizzes:** the contents of each lecture will be discussed during class for open question and answers to make sure every student will participate and be active.

COURSE ASSESSMENT Tools

Assessment Tool	Description	Weight
Field Trip (Case Study)	Field Report with Drawings, Data and using survey Instruments	10%
Experiments	Experiments (**Practical Activity**), to cover the lectures and exercises. Three experiments are covered.	15%
Quizzes	The questions and answer will be discussed on the class content. Three quiz's will be given during the semester.	10%
Mid-Term Exam	The surveying topics and class discussions	20%
Tests	The first test will cover Travers and angels calculations, and the second test will cover Introduction and scale, measurement and errors, Horizontal distance measurement, and Leveling Surveying**.**	15%

Final examination	The review of all lectures and practical discussion	30%

ESSENTIAL READINGS: (Journals, textbooks, website addresses etc.)

Textbooks:

1. Surveying
   Author: Saikia, Et Al.
   Publisher: PHI Learning Pvt. Ltd., 2010
   ISBN: 8120339851, 9788120339859

References:

1. Surveying and Levelling, Volume 1
   Surveying and Levelling, S. S. Bhavikatti, ISBN 8190694227, 9788190694223
   Author: S. S. Bhavikatti
   Publisher: I. K. International Pvt Ltd, 2009
   ISBN: 8190694200, 9788190694209

2. Engineering Surveying
   Author: C. L. Berger Sons
   Publisher: General Books LLC, 2010
   ISBN: 1152649876, 9781152649873

3. Surveying
   Author: Francis H. Moffitt, John D. Bossler
   Publisher: Addison-Wesley, 1998
   ISBN: 0673997529, 9780673997524

COURSE POLICY *(including plagiarism, academic honesty, attendance etc)*

- Attendance Policy: students registered for this course are expected to attend all the lectures theory and practical(Field Trip), examinations, Case study and any class discussion, and are subject to penalties specified by the instructor within KUST regulations.

- Make-up Policy: Anyone who does not turn up for examination without any good excuse will be giving a zero, unless student has an illness and must provide a prove of such a matter .

- Plagiarism: Using another person's ideas, words, drawings, etc. without giving proper credit (through a citation) is considered plagiarism. This includes anything from a book, magazine, technical report or journal, or website. It includes anything copied from another student's paper or from a paper you wrote for another class where you received credit for it. Plagiarism is considered Academic Dishonesty and you may be reported to the Dean of Students if I suspect you of plagiarism.

- Academic Honesty: students are expected to perform their own work on all assignments in this

course. Dishonesty on an exam, quiz, homework, or lab report will result in a grade of zero for that assignment. Further action will be taken according to KUST academic Honor Policy. See; sec. 5.10 Academic Honor from student handbook.

Course Calendar: Please check the academic calendar for spring 2016

Week	Date	Chapters/ Topics	Assessment Tools	Course Learning Outcomes
1	Feb 28th – Mac 3rd, 2016	Introduction and Scales	N/A	Outcome #1
2	Mac 6th – 10th , 2016	Measurements and errors Lab Work Measurements and errors	Exp. #1	
3	Mac 13th – 17th , 2016	Horizontal Distance Measurement Lab Work Chain and Compass Surveying	Quiz#1 Exp. #2	
4	Mac 27th – 31st , 2016	Leveling Surveying	N/A	Outcome #3
5	April 3rd – April 7th , 2016	Leveling Surveying Lab Work Leveling	Exp. #3 (Report/ Discussion) Test#1	
6	April 10th – 14th , 2016	Contouring Lab Work Contouring	Exp. #4 Quiz#2	Outcome #5
7	April 17th – 21st , 2016	Theodolite, Total Station, GPS Lab Work Theodolite	Exp. #5	
April 19th – 25th , 2016 Midterm Exam				
8	May 2nd – May 5th , 2016	Traverse Surveying Lab Work Traverse Surveying	Exp. #6 (Report/ Discussion)	Outcome #5
9	May 8th – 12th , 2016	Angles and Directions Lab Work Computation of Area and Volume	Esp. #7	Outcome #4
10	May 15th – 19th ,2016	Angle Measurement Operations Lab Work Simple and Compound Curve	Exp. #8 Quiz#3 Field Trip	
11	May 22nd – 26th ,2016	Electronic Distance Measurements Lab Work Reverse and Transition Curve	Exp. #9 (Report/Discussion)	
12	May 22th – June 2nd -2016	Horizontal Curve Lab Work Tachometric Surveying	Exp. #10 Test#2	Outcome #2
13	June 5th – 9th ,2016	Horizontal Curve cont'd Lab Work Topographical	Exp. #11 Quiz#4	

		Surveying		
14	June 12th – 16th , 2016	Vertical Curve Lab Work Electronic Distance Measurements	Exp. #12	
15	June 19th – 23rd, 2016	Review Lecture	N/A	
June 24th – 30th ,2016 Final Exam				