



جامعة المجمعة
Majmaah University

رؤية
VISION
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

COURSE SPECIFICATIONS (CS)

Ramadan 1438 H , June 2017

Institution:	Majmaah University
Academic Department:	Civil and Environmental Engineering
Programme	Civil Engineering
Course title and code:	Surveying 2 - CE 371
Specification Approved Date:	11/05 / 1439 H

Course Specifications

Institution: Majmaah University	Date: 28/01/2018
College/Department: Engineering / Civil and Environmental Engineering	

A. Course Identification and General Information

1. Course title and code: <i>Surveying 2 - CE 371</i>																				
2. Credit hours: <i>(3) [2-1-2]</i>																				
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) <i>Civil Engineering</i>																				
4. Name of faculty member responsible for the course <i>Dr. Sameh S Ahmed</i>																				
5. Level/year at which this course is offered: <i>Level 7/ Year 3</i>																				
6. Pre-requisites for this course (if any): <i>CE 370</i>																				
7. Co-requisites for this course (if any): <i>None</i>																				
8. Location if not on main campus: <i>--</i>																				
9. Mode of Instruction (mark all that apply):																				
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 35%;">a. traditional classroom</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">What percentage?</td> <td style="width: 25%; text-align: center;"><input style="width: 50px;" type="text" value="70%"/></td> </tr> <tr> <td>b. blended (traditional and online)</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>What percentage?</td> <td style="text-align: center;"><input style="width: 50px;" type="text" value="20%"/></td> </tr> <tr> <td>c. e-learning</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>What percentage?</td> <td style="text-align: center;"><input style="width: 50px;" type="text"/></td> </tr> <tr> <td>d. correspondence</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>What percentage?</td> <td style="text-align: center;"><input style="width: 50px;" type="text"/></td> </tr> <tr> <td>f. other</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>What percentage?</td> <td style="text-align: center;"><input style="width: 50px;" type="text" value="10%"/></td> </tr> </table>	a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input style="width: 50px;" type="text" value="70%"/>	b. blended (traditional and online)	<input checked="" type="checkbox"/>	What percentage?	<input style="width: 50px;" type="text" value="20%"/>	c. e-learning	<input type="checkbox"/>	What percentage?	<input style="width: 50px;" type="text"/>	d. correspondence	<input type="checkbox"/>	What percentage?	<input style="width: 50px;" type="text"/>	f. other	<input checked="" type="checkbox"/>	What percentage?	<input style="width: 50px;" type="text" value="10%"/>
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<p>Comments: <i>The course involves class room teaching with exclusive exercise and laboratory parts. The teaching involves explanations & discussions subsequently with preparation of laboratory reports and additional work as assignments.</i></p>																				



B Objectives

1. What is the main purpose for this course?
 - 1- To introduce the EDM and Total Station.
 - 2- To determine distances, heights and bearings by using Total Station.
 - 3- To learn how to do the Traversing of an area.
 - 4- To plot Traversing data on the drawing sheet.
 - 5- To study various methods for balancing the closing error in the closed traverse.
 - 6- To calculate the omitted measurements in the traversing.
 - 7- To learn methods of setting up horizontal and vertical curves.
 - 8- To calculate various distances, bearings & heights from the terrestrial and aerial photographs.
 - 9- To introduce digital mapping of the area.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

The course content has been revised as per the latest research. Using the advantage of IT, the reference material is posted on the website so that the students can benefit from them.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Introduction and application of electronic surveying measuring equipment (EDM, Total Station,), Introduction to horizontal control survey (Traversing, Intersection, resection), Horizontal curves and vertical curves, Introduction to photogrammetry and Digital mapping.

1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Introduction of surveying instruments	2	10
Angle measurements	1	5
Distance measurements	2	10
Traverses	1	5
Midterm - 1	0.5	2
Closed Traverses	2	10
Intersection and resection	1	5
Design of horizontal curves	2	10
Design of vertical curves	1	5
Midterm - 2	0.5	2
Digital Mapping	1	5
Mini Project	1	5
Total	15	74

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planned	32	16		32		80
	Actual	30	15		30		75
Credit	Planned	2	0		1		3
	Actual	2	0		1		3

3. Additional private study/learning hours expected for students per week.

3-4 hrs

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	The students shall be able to memorize how to use EDM and Total Station.	<ul style="list-style-type: none"> - Course delivery by citing real life examples and problems. - Emphasis on understanding concepts and illustrating applications to problems. - Placing before the class mind-provoking and 	<ul style="list-style-type: none"> • Regularly asking questions on different topics and concepts. • Midterm and End-semester examinations that will force the student to think and apply the knowledge. • Reports and discussions.
1.2	The students shall be able to calculate and adjust open and closed traverses.		
1.3	The students shall be able to tell about the horizontal and vertical curves.		
1.4	The students shall be able to recognize the use of Topographic surveying.		
1.5	The students shall be able to describe digital mapping process.		

		thinking questions.	
2.0	Cognitive Skills		
2.1	The students shall be able to calculate distance, height and bearings by using Total Station.	<ul style="list-style-type: none"> - Solving problems through assignments on each topic. - Assignment problems, Exercise / tutorial problems for applications that will force the students to think and apply the knowledge gained. - Asking the students to suggest a solution before giving them the correct answer. - Asking the students to explain the steps adopted in the problem and ensures that they understand the problem. - Asking searching questions on topic fundamentals. - Setting M-1 and M-2 + quizzes and mini projects so that students can apply the knowledge gained. 	<ul style="list-style-type: none"> • Asking the student to solve the problems on white board guiding him when required. • Quizzes and Exams. • Asking students to participate in oral discussion during the class. • Setting assignment problems or mini project which will apply principles and concepts. • Questions in Quiz, Midterm and End semester tests which will force the student to think and apply concepts and principles learnt.
2.2	The students shall be able to reconstruct the Traverse on the drawing sheets.		
2.3	The students shall be able to prepare data for setting out horizontal and vertical curves.		
2.4	The students shall be able to evaluate the distance, height and bearings with photographs.		
2.5	The students shall be able to measure various parameters by using digital instruments.		
3.0	Interpersonal Skills & Responsibility		
3.1	The students shall be able to demonstrate their skills in the subject and be able to assess themselves.	<ul style="list-style-type: none"> - Solve the problems by asking sequential questions. - Paying personal attention to each student and caring about his situation. 	<ul style="list-style-type: none"> • Group work in laboratory work and team activity. • Bonus marks to those who are improving and participating effectively in
3.2	The students shall be able to demonstrate setting out horizontal and vertical curves.		

			the class.
4.0	Communication, Information Technology, Numerical		
4.1	The students shall be able to interpret digital maps.	<ul style="list-style-type: none"> - Asking students to solve problems in the class by guiding him. - Asking the students to speak on a particular topic. 	<ul style="list-style-type: none"> • Discussion, Questioning during topics. • Highlighting the concepts and principles through real life problems • Asking the students to solve the numerical part and check the answers Asking the students to participate in evaluating their mates.
4.2	The students shall be able to demonstrate their communication skills in the subject.		
4.3	The students shall be able to assess the relevant material through IT and be able to criticize it.		
5.0	Psychomotor		
5.1	N/A		

5. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	First midterm exam	8	15
2	Second midterm exam	14	15
3	Quizzes		10
4	Report, and homework assignments		10
5	Lab. Exam	15	10
6	Final Exam	16	40
7	Total		100



D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Every day, one hour is marked as Office Hour in the Instructor's Time. During this hour the students can consult the teacher individually or in a group for their difficulties in the subject. In all, teaching staff is available for more than 7 hours per week for academic advices beyond lectures and tutorials.

E Learning Resources

1. List Required Textbooks

- Anderson, J. & Mikhail, E. "Surveying: Theory and Practice", McGraw Hills, Latest edition.
- Burr, F.K., "Surveying principals and applications" prentice hall, (Last edition).
- Kanetkar and Kulkarni, "Surveying and leveling", (Last edition).
- B.C. Punmia , "Surveying", Volume 1, 2005

2. List Essential References Materials (Journals, Reports, etc.)

Manuals of EDM, Total Stations, and GIS software's

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Selected Papers and demonstrations from trustable web sites.

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

Available: Surfer, ARC/GIS and AutoCAD software's.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access,etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)

- Lecture room available - (18 students/class) to avoid student movement. It is necessary to keep lectures for one course / level in the same classroom.
- Lab spaces (10 students/class) is really not wide enough especially with too many equipment and number of students in one session. It is Ok during this semester.

2. Technology resources (AV, data show, Smart Board, software, etc.)

Available for students in the computer labs. Better to add more in other areas so the students can use them during the break time. Smart boards are available in the class rooms.



3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

Laboratory equipments are available for distance and angles measurements (Theotolides and Total Station). But we need more instruments so more benefits go to the students.

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

Importance of feedback should be first explained. Only then the feedback should be taken. Have a question as to how the teaching can be improved - speed, more problems.

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department

- Ask the students if the speed of teaching and the approach is helping the students in learning the subject.
- Students are free to report any difficulties to the Head of the department.

3. Processes for Improvement of Teaching

- Review of strategy at the mid-semester and after assessment of Mid Term - 1.
- Group discussion and using different ways in teaching (seminars, Power point presentations, reading, conducting more field works, etc.)

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

- Independent checking of End-Semester assessment (another faculty member)
- Checking of course files by the Quality Centre Nominee and give suggestions for improvement in writing.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- Mid Semester review of Course files.
- End Semester review of Course files.
- Student feedback at end of the semester from CEE-Quality unit.
- Feedback of the assessment at the beginning of the next semester.
- Departmental meeting at the beginning of the next semester on suggested improvements

Name of Course Instructor: **Sameh S Ahmed**

Signature: *Sameh*

Date Specification Completed: 25/01/2018

Program Coordinator: **Dr. Abdullah Alshehri**

Signature: *Alshehri*

Date Received: Meeting # 3 on 28/01/2018

