جامعة المجمعة
Majmaah University

Course Specifications

Muharram 1437 H

Institution:	Majmaah University
Academic Department :	Civil and Environmental Engineering
Programme :	Civil Engineering
Course :	Surveying 2
Course Coordinator :	Dr. SaMeH S. Ahmed
Programme Coordinator :	Dr. Abdullah AlSheri
Course Specification Approved Date :	10/ 5 / 1437H

A. Course Identification and General Information

1 - Course title : Surveying 2		Course Code: CE 371	
2. Credit hours : (3) [2-1-2]			
3 - Program(s) in which the course is offered: Civil Engineering			
4 – Course Language : English			
5 - Name of faculty member responsible for the course: 1			
6 - Level/year at which this course is offered : 7/3			
7 - Pre-requisites for this course (if any) : • CE 370			
8 - Co-requisites for this course (if any) : • None			
9 - Location if not on main campus : Yahya Building			
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	✓	What percentage?	70 %
B - Blended (traditional and online)	✓	What percentage?	20 %
D - e-learning		What percentage?	..... %
E - Correspondence		What percentage?	..... %
F - Other	✓	What percentage?	10 %
Comments : 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.			

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:

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

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction of surveying instruments	1	5
Angle measurements	2	10
Distance measurements	2	10
Traverses	3	5
Midterm - 1	0.5	2.5
Closed Traverses	1	5
Intersection and resection	1	5
Design of horizontal curves	2	10
Design of vertical curves	1	5
Midterm - 2	0.5	2.5
Digital Mapping	1	5
Mini Project	2	10
Total	15	75

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

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	**30**	**15**	**30**			**75**
Credit	**2**	**0**	**1**			**3**

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

3-4 hrs

Three to four hours per week on an average for self-study and problem solving.

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

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	The students will be able to recognize the errors in measurements	– 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 thinking questions.	• 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.
2.0	**Cognitive Skills**		
2.1	The students will be able to measure horizontal and vertical angles and distances using theodolite and total station	- 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.	• 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 will be able to calculate areas based on field measurements		
2.3	The students will be able to interpret and explain contour and digital maps		
2.4	The students will be able to design elements of horizontal and vertical curves		

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
		- Setting M-1 and M-2 + quizzes and mini projects so that students can apply the knowledge gained.	
3.0	**Interpersonal Skills & Responsibility**		
3.1	The students will be able to demonstrate their teamwork and leadership skills through functioning in groups during field measurements and calculations	- Solve the problems by asking sequential questions. - Paying personal attention to each student and caring about his situation.	• Group work in laboratory work and team activity. • Bonus marks to those who are improving and participating effectively in the class.
4.0	**Communication, Information Technology, Numerical**		
	None		
5.0	**Psychomotor**		
	N/A		

5. Schedule of Assessment Tasks for Students during the Semester:

	Assessment task	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	14	10
6	Final Exam	15	40
7	Total		100

D. Student Academic Counseling and Support

Every day one hour is marked as Office Hour in the Time Table of teaching staff. 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.

2. List Essential References Materials :

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

3. List Recommended Textbooks and Reference Material :

- 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.

4. List Electronic Materials :

Selected Papers and demonstrations from trustable web sites.

5. Other learning material :

Available GIS and AutoCAD software's.

F. Facilities Required

1. Accommodation

- Lecture room available – (19 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 1437H.

2. Computing resources

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

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 etc.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- 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

- 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.
- Feedback of the assessment at the beginning of the next semester.
- Departmental meeting at the beginning of the next semester on improvements suggested.

Course Specification Approved
Department Official Meeting No (11) Date 01 / 05 / 1437 *H*

Course Coordinator		Department Head	
Name :	**Dr. SaMeH S. Ahmed**	***Name :***	Dr. Abdullah AlShehri
Signature :	SaMeH	***Signature :***	AlShehri
Date :	08/ 04 / 1437 *H*	***Date :***	10/ 05 / 1437 *H*