



المركز الوطني للتقويم والاعتماد الأكاديمي  
National Center for Academic Accreditation and Evaluation

## **ATTACHMENT 5.**

# **T6. COURSE SPECIFICATIONS** **(CS)** **Surveying I (CE370)**

## Course Specifications

Institution: <b>Majmaah University</b>	Date: <b>23/12/1440H (04/09/2018)</b>
College/Department : <b>Engineering / Civil and Environmental Engineering</b>	

### A. Course Identification and General Information

1. Course title and code: <b>Surveying I - CE 370</b>	
2. Credit hours: <b>(3) [2-1-2]</b>	
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) <b>Civil Engineering</b>	
4. Name of faculty member responsible for the course <b>Dr. Sameh S Ahmed</b>	
5. Level/year at which this course is offered: <b>Level 5/ Year 2(after Prep. Year)</b>	
6. Pre-requisites for this course (if any): <b>Math 107</b>	
7. Co-requisites for this course (if any): <b>None</b>	
8. Location if not on main campus:	
9. Mode of Instruction (mark all that apply):	
a. traditional classroom	<input checked="" type="checkbox"/> What percentage? <input type="text" value="70%"/>
b. blended (traditional and online)	<input checked="" type="checkbox"/> What percentage? <input type="text" value="20%"/>
c. e-learning	<input type="checkbox"/> What percentage? <input type="text"/>
d. correspondence	<input type="checkbox"/> What percentage? <input type="text"/>
f. other	<input checked="" type="checkbox"/> What percentage? <input type="text" value="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- Provide the student with the principles of surveying and training on surveying instruments.
  - 2- Acquire the student skills in technical knowledge about different surveying's.
  - 3- To study different methods to compute distances, areas and volumes from maps or field measurements and conduct territory division.
  - 4- Ability to computing the co-ordinates of the positions & setting the positions on map.
  - 5- Ability to produce cadastral maps using field measurements and AUTOCAD
- Make the student able to use the leveling instruments and, skills, to carry out several surveying applications in the field: Profiles, road constriction and earthwork calculations.

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)

Using the advantage of IT, the reference material is posted on the instructor's website and D2L system, so that the students can follow easily.

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

Course Description:

Basic Definitions - Units of Measurement - Measurement of Distances - Traverse Surveys and Computations - Leveling - International Map Numbering - Areas and Volumes - Earthwork quantities - Field operations with transit.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
<b>Basic Definitions:</b> What is Surveying? - Plane Surveying - Topographic Surveying - Geodesy - Photogrammetric - GIS, Remote Sensing - GPS.	1	5
<b>Units of Measurement:</b> Metric equivalents - Tables - Field notes - Methods of keeping notes - Errors and mistakes - Accuracy and Precision.	1	5
<b>Measurement of Distances:</b> Horizontal distance - Chains - Taps and its equipment - slope measurement by vertical angles.	1	5
<b>Measurement of Angles:</b> Horizontal angles - Vertical angles - Angles by compass.	1	5

<b>Traverse Surveys and Computations:</b> Traverse - Open traverse - Closed Traverse - Traverse computations - Traverse closure - Methods of plotting traverses - Cadastral surveying - Practical exercises - Planimeter and its applications.	2	10
<b>Midterm - 1</b>	0.5	2
<b>Levelling:</b> General - Longitudinal levelling - Cross sections - Trigonometric levelling - Direct differential levelling -the Dumpy level - Sources of error in levelling. Height of Instrument Method - Rise and Fall Method - Profiles and areas measurement.	2	10
<b>International map Numbering</b>	1	5
<b>Field operations with transit</b>	1	5
<b>Areas and Volumes:</b> areas of Regular and Irregular areas- Trapezoidal method - Simpson's one third rule, Volume calculations.	2	10
<b>Earthwork quantities:</b> Remarks - Cross Sections - Distance between Cross sections - Calculation of areas - Volume by average end area - Earthwork quantities.	1	5
<b>Contour maps</b>	1	5
<b>Total</b>	<b>15</b>	<b>74</b>

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		28		73
Credit	Planned	2	0		1		3
	Actual	2	0		1		3

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

2-3 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
<b>1.0</b>	<b>Knowledge</b>		
1.1	The students will be able to recognize and memorize concepts of land surveying.	<ul style="list-style-type: none"> <li>- Emphasis on understanding concepts and illustrating applications to problems.</li> <li>- Conduct field measurements and creates maps for an urban area.</li> <li>- Revise some principles and rule in Algebra and integration.</li> </ul>	<ul style="list-style-type: none"> <li>• Quizzes</li> <li>• Midterm and End-semester examinations</li> <li>• Reports and discussions</li> </ul>
<b>2.0</b>	<b>Cognitive Skills</b>		
2.1	The students shall be able measure distances, areas, volumes, using different surveying instruments.	<ul style="list-style-type: none"> <li>- Solving problems through assignments on each topic.</li> <li>- Assignment Exercise / tutorial problems for applications</li> <li>- Asking the students to suggest a solution before giving them the correct answer.</li> </ul>	<ul style="list-style-type: none"> <li>• Direct assessment using lab measurement</li> <li>• Questions in Quiz, Midterm and End semester tests</li> </ul>
2.2	The students will be able to calculate areas based on field measurements.		
2.3	The students will be able to analyse and modify existing cadastral maps and ability to calculate areas and volumes of regular and irregular shapes.		
2.4	The students shall be able to choose appropriate as per requirements (Maps).		
2.5	The students shall be able to calculate earthwork using cut and fill method.		
2.6	The students shall be able to use levelling methods to design profiles.		
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
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"> <li>- Divided the students into small groups during the lab sessions and re-arranging the groups.</li> </ul>	<ul style="list-style-type: none"> <li>• Group work in laboratory work and team activity.</li> <li>• Bonus marks to those who are improving and</li> </ul>

		- Paying personal attention to each student and caring about his situation	participating effectively in the class.
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.1	The students will be able to demonstrate their teamwork and leadership skills through functioning in groups during field measurements and calculations.	- Asking students to solve problems in the class by guiding them.	- Discussion, Questioning during topics.
4.2	The students shall be able to demonstrate their communication skills in the subject. They have to be familiar with using the modern information technology such as internet, and smart board.	- Asking the students to express his opinion on a particular topic.	- Homework's - Set marks for observation during practical sessions
<b>5.0</b>	<b>Psychomotor</b>		
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	7	15
2	Second midterm exam	13	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)

Weekly, there are two hours marked as Office Hour on the Instructor's Time Table. During these hours, 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

- Barry, F. Kavanagh, "Surveying with Construction Application" (latest edition).

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

- Barry, F.K. and Gelnnbind, S.J., "Surveying: Principles and Applications", 5th edition, Prentice - Hall.

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 15, Excel spread sheets for several calculations, Level instruments, and Electronic instruments for measuring distances.

#### 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 - (25 students/class) to avoid student movement. It is necessary to keep lectures for one course / level in the same classroom.
- Lab spaces (12 students/class) is really not wide enough especially with too many equipment and number of students in one session.

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

Available for students in the class rooms, surveying lab and 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)

Surveying instruments are available and since 2014 they have become sufficient for the average of 10 students per session. If the number of students increases in the future, we need more instruments such as Digital planimeters and levels.

## G Course Evaluation and Improvement Processes

<p>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: How the teaching can be improved - speed, more problems etc. Student's response to questionnaires is taken full care from the instructor.</p>
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> <li>- Ask the students if the speed of teaching and the approach is helping them in learning the subject.</li> <li>- Students are free to report any difficulties to the Head of the department</li> </ul>
<p>3. Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> <li>- Review of strategy at the mid-semester and after assessment of Mid Term - 1.</li> <li>- Group discussion and using different ways in teaching (seminars, Power point presentations, reading, conducting more field works, etc.)</li> </ul>
<p>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)</p> <ul style="list-style-type: none"> <li>- Independent checking of End-Semester assessment (another faculty member)</li> <li>- Checking of course files by the Quality Centre Nominee and give suggestions for improvement in writing.</li> </ul>
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p> <ul style="list-style-type: none"> <li>- Mid Semester review of Course File.</li> <li>- End Semester review of Course File.</li> <li>- Student feedback at end of the semester.</li> <li>- Feedback of the assessment at the beginning of the next semester.</li> </ul> <p>Departmental meeting at the beginning of the next semester on improvements suggested.</p>

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

Signature: *Sameh*

Date Specification Completed: **04/09/2018**

Program Coordinator: **Dr. Abdullah Alshehri**

Signature: *Alshehri*

Date Received: **Meeting # 3 on 11/09/2018**