

Course Description Form

1. Course Name:	
Engineering Surveying I	
2. Course Code:	
CIV035	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
23/9/2025	
5. Available Attendance Forms:	
Lectures are in person at the university only	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Number of Credit Hours (Total) 75 / Number of Units (Total) 5	
7. Course administrator's name (mention all, if more than one name)	
1. Name: Asst. Lect. Thaer Taher Atshan Email: thaer.taher@uowa.edu.iq	
8. Course Objectives	
Course Objectives	- Defining the basics of surveying and how to use measuring tools and avoid measurement obstacles. - Defining surveying devices and their uses such as level and theodolite. - Measuring and determining levels and determining heights for buildings and land uses. - Learning how to record readings in the surveyor's notebook. - Learning how to correct levelling errors. - Drawing longitudinal and transverse sections and calculating the areas and volumes of regular and irregular shapes. - Introducing the student to contour maps and types of surveying and linking them to contemporary technology. - Teaching the student to calculate areas and volumes from contour maps.
9. Teaching and Learning Strategies	

Strategy	• Explain the lectures and discussions in the classroom to deliver the scientific information to the student. • Directing questions and inquiries that are distinguished by accuracy. • Developing self-learning by deducing solutions to the problems. • Extracurricular assignments and solving classroom examples. • Field exercises within the university to apply measuring dimensions and levels. • Performing the tests specified for the subject at the times specified for them. • Reviewing the books and references indicated by the subject teacher.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
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أ.م.د. قاسم علي حسين
رئيس قسم الهندسة المدنية

ثامر طاهر السهاني




15	5	• Know the details and methods of surveying and leveling and the steps followed for each type. • The learner will be able to project maps on the ground or transfer the image to a natural location on the map. • Determine the heights of the land above sea level and link them to the height of neighboring buildings . • The learner will be able to calculate areas, quantities and volumes for civil works of projects. • Enabling the student to use surveying and measuring devices. • Increase the ability and engineering sense and speed of decisionmaking.	• Definition of area / Importance of area in civil works / Units of measurement / Tools used in measurement / Errors in measuring distances. • Leveling Identify the leveling device and its components and types, the ruler, types of rulers and how to read them • The method of rising and falling in recording ruler readings in the surveyor's notebook • The method of device elevation in recording ruler readings in the surveyor's notebook • Errors in direct differential leveling and correcting the closing error • Obstacles to balancing work and how to avoid them and reading the inverted ruler • The method of wedges to correct the line of sight in the leveling device (Level) • Applications on leveling • Longitudinal sections and drawing them and finding the depth of excavation and burial height and calculation methods • Cross sections and calculation methods • Topographic survey and contour lines and their properties • How to make contour lines and methods of fixing them and how to number them • Areas and how to calculate them for regular and irregular shapes • Volumes and how to calculate the volume of work for roads, rivers and sewers • The square network method for calculating areas and volumes	Lectures are in person at the university only	Quizzes Homework Assignment Reports
11. Course Evaluation					
Quizzes = 5% Assignments= 5%					

Projects\Lab.=20%
Report= 10%
Midterm Exam= 10%
Final Exam= 50%

12. Learning and Teaching Resources

Main references (sources)	1-المساحة الهندسية -ياس ني عبيد احم د- كلية الهندسة – جامعة البصرة – وزارة التعليم العالي والبحث العلمي العراقية - 1990
	2- هندسة المساحة – للدكتور عباس زيدان – قسم البناء والانشاءات –الجامعة التكنولوجية – الطبعة الاولى - 2009
	3- A text Book of Surveying and Leveling, R. Agor, 2012,Delhi