	Ministry of Higher Education and Scientific Research - Iraq University of Warith Al-Anbiyaa College of Engineering Civil Engineering Department	

MODULE DESCRIPTOR FORM

Module Information

Module Title	ENGINEERING SURVEY I	**Module Delivery**	
Module Type	CORE		**Theory** **lab** **Tutorial**
Module Code	CIV035		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	3	**Semester of Delivery**	1
Administering Department	Civil engineering	**College**	Engineering
Module Leader	Thaer Taher Atshan	**e-mail**	thaertahir@uowa.edu.iq
Module Leader's Acad. Title	Assistant Lecturer	**Module Leader's Qualification**	M.Sc.
Module Tutor		**e-mail**	
Peer Reviewer Name		**e-mail**	
Review Committee Approval	2024/9/26	**Version Number**	2024

Relation With Other Modules

Prerequisite module	None	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	1. Defining the basics of surveying and how to use measuring tools and avoid measurement obstacles. 2.Defining surveying devices and their uses such as level and theodolite. 3.Measuring and determining levels and determining heights for buildings and land uses. 4. Learning how to record readings in the surveyor's notebook. 5.Learning how to correct levelling errors. 6. Drawing longitudinal and transverse sections and calculating the areas and volumes of regular and irregular shapes. 7.Introducing the student to contour maps and types of surveying and linking them to contemporary technology. 8.Teaching the student to calculate areas and volumes from contour maps.
Module Learning Outcomes	1.Know the details and methods of surveying and leveling and the steps followed for each type. 2.The learner will be able to project maps on the ground or transfer the image to a natural location on the map. 3.Determine the heights of the land above sea level and link them to the height of neighboring buildings. 4.The learner will be able to calculate areas, quantities and volumes for civil works of projects. 5.Enabling the student to use surveying and measuring devices. 6.Increase the ability and engineering sense and speed of decision-making.
Indicative Contents	1.Definition of surveying, its importance, measuring tools, units and errors in measuring distances and sources of errors (5 hours) 2.Leveling and sources of errors in leveling, identifying the level, its components and types, the staff and its types and how to read them (7 hours) 3.The method of rising and falling and the method of raising the device in recording staff readings in the surveyor's notebook and reading the revised staff and balancing obstacles (10 hours) 4.The method of two pegs to correct the line of sight in the leveling device / applications on leveling (3 hours) 5.Longitudinal and transverse sections and drawing them, finding the depth of excavation and burial and calculation methods (8 hours) 6.Topographic surveying and contour lines and their properties and methods of fixing them and how to number them and calculate quantities from them (7 hours) Areas and how to calculate them for regular and irregular shapes (8 hours)
Learning and Teaching Strategies	
Strategies	1. Explain the lectures and discussions in the classroom to deliver the

	scientific information to the student. 2. Directing questions and inquiries that are distinguished by accuracy. 3. Developing self-learning by deducing solutions to the problems. 4. Extracurricular assignments and solving classroom examples. 5. Field exercises within the university to apply measuring dimensions and levels. 6. Performing the tests specified for the subject at the times specified for them. 7. Reviewing the books and references indicated by the subject teacher.

Student Workload (SWL)

Structured SWL (h/sem)	77	**Structured SWL (h/w)**	5
Unstructured SWL (h/sem)	48	**Unstructured SWL (h/w)**	3
Total SWL (h/sem)	125		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	5	5 % (5)	3,5, 6,10,14	LO #3, 4 and 5
	Assignments	5	5 % (5)	2, 12	LO # 3, 4, 5,6 and 7
	Projects / Lab.	10	20 % (20)	Continuous	All
	Report	10	10 % (10)	Continuous	All
Summative assessment	**Midterm Exam**	2 hr	10 % (10)	7	LO # 1-5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	Definition of surveying, its importance, measuring tools, units and errors in measuring distances and sources of errors
Week 2	Identifying the level, its components, types, staff, types of staffs, and how to read them
Week 3	The rising and falling method of recording staff readings in the surveyor's notebook
Week 4	How to use the level to record staff readings in the surveyor's notebook
Week 5	Errors in direct differential levelling and correction of closure error
Week 6	Obstacles in levelling and how to avoid them and read the revised staff
Week 7	The two-peg method for correcting the line of sight in the leveling device (level)

Week 8	Applications on levelling
Week 9	Longitudinal sections, drawing them, finding the depth of excavation, filling height and calculation methods
Week 10	Cross sections and calculation methods
Week 11	Topographic survey, contour lines and their properties
Week 12	How to make contour lines, how to install them and how to number them
Week 13	Areas and how to calculate them for regular and irregular shapes
Week 14	Volumes How to calculate the volume of works for roads, rivers and sewers
Week 15	Square grid method for calculating areas and volumes
Week 16	Preparatory week before the final exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الأسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Tools used in surveying, adjusting direction in measurement, calculating flat and inclined distances, and correcting measurements
Week 2	Lab 2: Learn about level, its types and accessories / types of adjustment/ reading the staff
Week 3	Lab 3: Levelling by rising and falling method
Week 4	Lab 4: Levelling by height of instrument
Week 5	Lab 5: Inverted levelling and checking the level of the building ceiling
Week 6	Lab 6: The wedge method for correcting the line of sight
Week 7	Lab 7: Setting the levels for a school yard, 11 cm thick
Week 8	Lab 8: Methods of erecting and setting columns
Week 9	Lab 9: Setting boundaries and dropping a building using tape only
Week 10	Lab 10: Tape Measure Obstacles, Barriers and Barriers

Learning and Teaching Resources

	Text	**Available in the Library?**
Required Texts	1.المساحة الهندسية-ياسين عبيد -عبيد احمد- كلية الهندسة – جامعة البصرة – 1990 وزارة التعليم العالي العراقية.	Yes
Recommended Texts	2. هندسة المساحة – للدكتور عباس زيدان – قسم البناء واالنشاءات – الجامعه التكنولوجية – الطبعة الاولى – 2009 A text Book of Surveying and Leveling, R. Agor, -3 Delhi,2012	2-No 3- Yes

Websites	

APPENDIX:

GRADING SCHEME				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.