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

MODULE DESCRIPTION FORM

Module Information					
Module Title	ENGINEERING SURVEY II			**Module Delivery**	
Module Type	CORE			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV045				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		2	**Semester of Delivery**		2
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**		Ms.C
Module Tutor			**e-mail**		
Peer Reviewer Name			**e-mail**		
Scientific Committee Approval Date		20/10/2024	**Version Number**		1.0

Relation with other Modules			
Prerequisite module	Engineering Survey I	**Semester**	1
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents	
Module Aims	1. Definition of directions, calculation of coordinates, shading, angles of deviation, map orientation and types of north 2. Definition of the theodolite in engineering projects and its types and how to use it 3. In methods and their types and Definition of horizontal curves in determining and projecting it 4. Learning how to avoid measurement and orientation obstacles 5. Teaching the student the methods of projection and signature of horizontal curves 6. In methods and their determination and projection Definition of vertical curves and their types in 7. Teaching the student the methods of projection and signature of vertical curves 8. Definition of indirect surveying And calculating building heights 9. Introducing the student to the total station device and how to use it in work
Module Learning Outcomes	1. The learner will be able to determine directions and orient maps 2. The learner will be able to calculate coordinates of points and angles of deviation of polygons. 3. The learner will be able to use all types of theodolite. 4. The learner will be able to project and sign it on the ground The horizontal Calculate the lengths of the elements of the curve 5. The learner will be able to use alternatives to the projection Avoid the obstacles of projecting the curve 6. The learner will be able to project and sign it on the ground Calculate the lengths of the elements of the curve 7. The learner will be able to calculate the heights of buildings directly and in an unusually high way 8. The learner will be able to use the total station device 9. Increase the ability and sense of geometry and the speed and accuracy of decision-making.
Indicative Contents	The instructional contents include: • Types of north, directions, coordinates, ribbing and angles of deviation (6 hours) • Theodolite, its components, use, teaching erection and its porosity (6 hours)

	• Theorem, its elements, how to project it and projection methods Theorem Curves (12 hours) • Theorem, its equation, types, elements and projection methods Curves (10 hours) • Theorem and beams Tachometer surveying, surveying methods and calculating heights for buildings (8 hours) • Total station and its use (6 hours)

Learning and Teaching Strategies	
Strategies	1. Giving lectures in person and in the classroom to discuss the scientific material for the student. 2. Asking questions and inquiries that are characterized by depth and accuracy. 3. Developing the learning process by deducing solutions to the problems raised. 4. Extracurricular assignments and solving classroom examples. 5. Field exercises inside the university to apply measuring dimensions and levels. 6. At the times specified for them. Performing the tests specified for the subject in 7. As directed by the subject teacher. Reviewing books and other resources 8. Following the subject teacher's YouTube channel to view the electronic lectures.

Student Workload (SWL)			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	77	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured USWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	48	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	4	6 % (6)	4, 10,11,13	LO # 2, 4, 6 and 7
	Assignments	4	4 % (4)	2, 12	LO # 2, 4, 5,6 and 7
	Projects / Lab.	10	20 % (20)	Continuous	All
	Report	0	0% (0)	none	
Summative assessment	**Midterm Exam**	2 hr	30 % (20)	7	LO # 1-4
	Final Exam	3hr	40% (40)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	Geographic North and Magnetic North S and Declinations 1 Bearing and Azimuth
Week 2	Types of polygons Traversing and its types
Week 3	Calculate directions, deflection angle and coordinates
Week 4	Theodolite, its types, composition, and how to install and use it
Week 5	Reading horizontal and vertical angles with theodolite
Week 6	Definition of horizontal curves and their types
Week 7	How to drop the curve and calculation methods
Week 8	Methods of projecting the curve on the ground 8 thousand riyals
Week 9	obstacles to the horizontal curve projection
Week 10	Definition of vertical curves and their types
Week 11	Exercises on the calculations of projecting the vertical curve onto the ground
Week 12	Tachymetric surveying, its methods and uses
Week 13	Exercises on calculating building heights using quick surveying
Week 14	TOTAL STATION device

Week 15	Using the total station in horizontal curve projection
Week 16	Preparing week before the exam

Delivery Plan (Weekly Lab. Syllabus)	
	Material Covered
Week 1	Lab 1: Learn about the theodolite, its parts, accessories and types of adjustment
Week 2	Lab 2: Reading horizontal angles by repetition
Week 3	Lab 3: Reading vertical angles
Week 4	Lab 4: Find the height of the theodolite building and the bar.
Week 5	Lab 5: Theodolite and strip plot boundary setting and closure error correction
Week 6	Lab 6: Determine the sides of a road by knowing the center line of the road.
Week 7	Lab 7: Projecting a curve using only a tape measure
Week 8	Lab 8: Projecting a horizontal curve using a measuring rod and theodolite
Week 9	Lab 9: Tachymetric surveying, stadia hair method, finding elevations and levels
Week 10	Lab 10: Get to know the total station device

Learning and Teaching Resources		
	Text	**Available in the Library?**
Required Texts	وزارة التعليم العالي العراقية. 1990 – جامعة البصرة – كلية الهندسة -ياسين عبيد -عبيد احمد-المساحة الهندسية	نعم
Recommended Texts	2- هندسة المساحة – للدكتور عباس زيدان – قسم البناء واالنشاءات – الجامعه التكنولوجية – الطبعة الاولى – 2009 3- A text Book of Surveying and Leveling, R. Agor, 2012,Delhi	1- كلا 2- نعم
Websites	https://www.autodesk.com/training	

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	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks 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.