Module Information
معلومات المادة الدراسية

Module Title	Applied Survey 1	Module Delivery	
Module Type	Core	☒ Theory	
Module Code	UOMU023034	☐ Lecture	
		☐ Lab	
ECTS Credits	5	☒ Tutorial	
SWL (hr/sem)	180	☒ Practical	
		☐ Seminar	

Module Level	UGII	Semester of Delivery	3
Administering Department	Technical building and Construction	College	Al-Mustaqbal university
Module Leader	Haneen Fadhil Kadhim	e-mail	
Module Leader's Acad. Title	Assist Lec.	Module Leader's Qualification	
Module Tutor	None	e-mail	E-mail
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	Plane surveying	Semester	
Co-requisites module	Applied surveying 1	Semester	

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims	1. Levelling: The students should be able to make a levelling Survey and calculate the results relative to some chosen datum.
	2. Longitudinal Sections: The students should be able to make a levelling survey along a predetermined line set out on the ground. Process the data and draw longitudinal sections and cross sections from the results.
	3. Measuring angle: The students should be able to:
	a- Select the most appropriate method of measuring horizontal and vertical angles.
	b- Measuring and record these angles and determine their most probable values.
	c- Understand the errors that affect angle measurement and minimize their effects.
	d- Measuring corrected coordinates of points and setting out of different lands.

Module Learning Outcomes	The student will be able to:
	
	1. An ability to apply knowledge of mathematics, science, and engineering.
	2. The students should be able to make a levelling Survey and calculate the results relative to some chosen datum.
	3. The students should be able to make a levelling survey along a predetermined line set out on the ground. Process the data and draw longitudinal sections and cross sections from the results.
	4. The students should be able to:
	  a. Select the most appropriate method of measuring horizontal and vertical angles.
	  b. Measuring and record these angles and determine their most probable values.
	  c. Understand the errors that affect angle measurement and minimize their effects.
	  d. Measuring corrected coordinates of points and setting out of different lands.
	5. The students should be able to compute the quantities of cut and fill in any kind of sections for Roads
	6. An ability to communicate effectively
	7. Skills of using Level Instrument efficiently
	8. Skills of using theodolite efficiently
	9. Skills of using Total Station Instrument efficiently
	10. Skills of design longitudinal and cross sections of any kind of Roads
	11. Using survey instruments effectively
	12. Critical Thinking
	13. Analytical methods in solving problems
	14. Setting out different kind of curves for Roads, Railway and other works.

Indicative Contents	Theodolites , Principle of construction [2 hrs.] Measuring Horizontal angles [2 hrs.] Measuring angles in vertical plane [2 hrs.] Directions , Whole circle bearing , Reduce Bearing [2 hrs.] Traverse Surveys , Bearings , forward & Back bearing [2 hrs.] Close circle traverse, coordinates calculations [2 hrs.] Close connected traverse , coordinates calculations [2 hrs.] Tacheometry , stadia tacheometry , Inclined sights [2 hrs.] Electromagnetic distance measurement(EDM), basic concept, systems [2 hrs.] Total station, Field Techniques, point location, missing line measurements [2 hrs.] Resection , Azimuth, elevation , Layout Positions and area computation [2 hrs.] Motorized Total stations, Automatic ,remote control, computerized [2 hrs.] Horizontal Curves , Kinds , computations [2 hrs.]

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	Assessment is based on 1. Exams. 2. Student feedback.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem)	102	Structured SWL (h/w)	7
Unstructured SWL (h/sem)	78	Unstructured SWL (h/w)	5
Total SWL (h/sem)	180		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	20% (20)	3,5,6,10	
	Assignments	2	10% (10)	7, 8	
	Seminar	1	10% (10)	11	
Summative assessment	Midterm Exam	2 hr	10% (10)	12	
	Final Exam	3hr	50% (50)	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري محتوى كل اسبوع يجب ان يغطي الوقت المحدد

	Material Covered
Week 1	Theodolites , Principle of construction
Week 2	Measuring Horizontal angles , Measuring angles in vertical plane
Week 3	Directions , Whole circle bearing , Reduce Bearing

Week 4	Traverse Surveys , Bearings , forward & Back bearing
Week 5	Close circle traverse, coordinates calculations
Week 6	Close connected traverse , coordinates calculations
Week 7	Tacheometry , stadia tacheometry , Inclined sights
Week 8	Electromagnetic distance measurement(EDM), basic concept, systems
Week 9	Total station, Field Techniques, point location, missing line measurements
Week 10	Resection , Azimuth, elevation , Layout Positions and area computation ,Motorized Total stations, Automatic ,remote control, computerized
Week 11	Horizontal Curves , Kinds , computations
Week 12	Horizontal Curves , Kinds , computations
Week 13	Setting out of horizontal curves.
Week 14	Setting out of horizontal curves
Week 15	Preparing to final exam

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Measuring horizontal & vertical angles by using different kinds of theodolites.
Week 2	Construct close connected & close circle traverses to survey small area.
Week 3	Computations of the coordinates of stations traverse & plotting a traverse , Problems in inverse computation.
Week 4	Measuring H. distances & vertical distances by using tachometer .
Week 5	Measuring slope , Horizontal & vertical distances, Resection , Azimuth, elevation , Layout Positions and motorized Total stations, Automatic ,remote control, computerized and by using Total station instrument.
Week 6	Measuring area by using total station , Solve problems , Standard deviation.
Week 7	Setting out curves & calculation , Curves field work surveying.

Learning and Teaching Resources		
مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Surveying for construction / William Irvine , FRICS. 2. Text book of surveying / S.K. Husain , M.S. Naga. Raj. 3. Elements of photogrammetry / Wolf , Pual R. 4. المساحة المستوية / د . فوزي الخالصي	

	5. المساحة المستوية والمائية / د . علي شكري	
Recommended Texts		
Websites		

Grading Scheme مخطط الدرجات				
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.