Module Information معلومات المادة الدراسية					
Module Title	**Applied Survey 2**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	UOMU023042				
ECTS Credits	**6**				
SWL (hr/sem)	**180**				
Module Level	UGII		**Semester of Delivery**	4	
Administering Department	**Technical building and Construction**		**College**	**Al-Mustaqbal university**	
Module Leader			**e-mail**		
Module Leader's Acad. Title			**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	Applied Survey 1	**Semester**	L 2 S 1
Co-requisites module	Roads engineering	**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. 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 design longitudinal and cross sections of any kind of Roads 10. Skills of using Total Station instruments efficiently. 11. Skills of using GPS instruments efficiently. 12. Using survey instruments effectively 13. Critical Thinking 14. Analytical methods in solving problems 15. Setting out different kind of curves for Roads, Railway and other works.
Indicative Contents	Vertical Curves , Kinds , Computations [3 hrs.] Setting out construction , small & large building. [3 hrs.] Balancing thermal furnaces [3 hrs.] Tunnel surveying [3 hrs.] Arial photogrammetric surveying [3 hrs.] Photogrammetric traditional surveying [3 hrs.] Photogrammetric Instruments &Flight design [3 hrs.] Computer Programs [3 hrs.] Global Positioning System (GPS) [3 hrs.] Geographic Information system (GIS) [3 hrs.]

	Field measurements by using total station and calculations, for for certain projects [9 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	Vertical Curves , Kinds , Computations
Week 2	Vertical Curves , Kinds , Computations
Week 3	Setting out construction , small & large building
Week 4	Tunnel surveying
Week 5	Arial photogrammetric surveying

Week 6	Photogrammetric traditional surveying
Week 7	Photogrammetric Instruments &Flight design
Week 8	Terrestrial Photogrammetry
Week 9	Global Positioning System (GPS)
Week 10	Global Positioning System (GPS)
Week 11	Geographic Information system (GIS)
Week 12	Applications of the photogrammetry
Week 13	Field measurements by using total station and calculations, for for certain projects
Week 14	Field measurements by using total station and calculations, for for certain projects
Week 15	Preparing to final exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Setting out of the vertical curves
Week 2	Setting out small building & roadway.
Week 3	**Practical problems in tunnel surveying.**
Week 4	Basic measurements of photograph using pocket stereo-scope , Using mirror stereoscope.
Week 5	**Global Poisoning system (GPS) basic concept, systems**
Week 6	**Appling Arc Map (GIS)**
Week 7	Field measurements or lab calculation for certain project.

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.