

	<p>Ministry of Higher Education and Scientific Research - Iraq</p> <p>University of Warith Al_Anbiyaa College of Engineering Civil Engineering Department</p>	
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MODULE DESCRIPTOR FORM

Module Information			
Module Title	ENGINEERING GEOLOGY		Module Delivery
Module Type	BASIC		Theory lecture
Module Code	CIV026		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	Civil engineering	College	Engineering
Module Leader	Ghadeer Haitham Hasan	e-mail	ghadeer.haitham@uowa.edu.iq
Module Leader's Acad. Title	Assist. Lect.	Module Leader's Qualification	Msc
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval	2024/9/26	Version Number	1.0

Relation With Other Modules			
Prerequisite module	None		Semester
Co-requisites module	None		Semester

Module Aims, Learning Outcomes and Indicative Contents

<p>Module Aims</p>	<ol style="list-style-type: none"> 1. To develop a meaningful link between geology and civil engineering structures in context of site investigations and the project requirements. 2. To understand the behavior of different geomaterial, such as, rocks and soils. 3. To identify the occurrence, types, importance, and rules of groundwater in civil engineering context. 4. This course deals with the basic geological investigations required for megastructures, for example, dams. 5. To understand maps' basics and plotting cross sections for different subsurface settings. 6. To understand basics of geophysical techniques and geophysical site investigations.
<p>Module Learning Outcomes</p>	<ol style="list-style-type: none"> 1. Recognizing how engineering geology works with different civil engineering disciplines. 2. Listing the various types of rocks and their formation. 3. Listing the various types of soils and their formation. 4. Representing the types, and rules of groundwater on civil engineering projects. 5. Summarizing what is meant by geological investigations for tunnels as megastructures 6. Summarizing what is meant by geological investigations for dams as megastructures. 7. Identifying the importance of physical properties of rocks on rocks' behavior. 8. Identifying the importance of mechanical properties of rocks on rocks' behavior. 9. Explaining seismic wave's types and how earthquake events can effect on civil engineering projects. 10. Defining different types of rock slope failures. 11. Describing variations in topography using contour maps, plotting contour maps 12. Describing subsurface attitude (i.e. horizontal layers) using two dimensional cross-sections. 13. Understating geophysics principles, data collection, and its importance for indirect geophysical site investigations. 14. To explain seismic surveys' types and techniques, their advantages and limitations. In addition to know the geotechnical parameters that can be determined using seismic methods.

	15. To explain electrical resistivity basics and applications for site investigations.
Indicative Contents	1. Indicative content includes how to Recognizing engineering geology subject works with different civil engineering disciplines , listing the various types of rocks and their formation and the various types of soils and their formation Representing the types, and rules of groundwater on civil engineering projects. Summarizing what is meant by geological investigations for megastructures such as dam or tunnels. Explaining seismic wave's types and how earthquake events can effect on civil engineering projects, defining different types of rock slope failures. Describing variations in topography using contour maps, plotting contour maps, describing subsurface attitude (i.e. horizontal layers) using two dimensional cross-sections. Understating geophysics principles, data collection, and its importance for indirect geophysical site investigations.
Learning and Teaching Strategies	
Strategies	The main strategy that will be adopted in delivering this module by refining and expanding the students' knowledge and critical thinking skills. This will be achieved through delivered classes, discussions, interactive tutorials, and by considering types of real case scenarios involving some examples of civil construction around the world that are interesting to the students, for example, Al-Jumeirah palm tree-Dubai.

Student Workload (SWL)

Structured SWL (h/sem)	63	Structured SWL (h/w)	4
Unstructured SWL (h/sem)	37	Unstructured SWL (h/w)	2
Total SWL (h/sem)	100		

Module Evaluation

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10%(10)	5,10	LO # 3,4,5; 6, and 7
	Assignments	2	10%(10)	2, 12	LO # 1,2; 8,9 and 10
	Projects / Lab. Report	1	10%(10)	Continuous	All
	Midterm Exam	2hr	50%(50)	7	LO # 1-8

Summative assessment	Final Exam	2hr	60%(60)	16	All
Total assessment			100%(100)		

Delivery Plan (Weekly Syllabus)

	Material Covered
Week 1	An introduction to engineering geology and its importance for civil engineers
Week 2	Types of rocks
Week 3	An introduction to soil and soil types
Week 4	Groundwater
Week 5	Geological investigations for tunnels
Week 6	Geological investigations for dams and reservoirs
Week 7	Rock mechanics I
Week 8	Rock mechanics II
Week 9	Earthquake
Week 10	Rock slope stability
Week 11	Maps I (contour maps, and geological maps)
Week 12	Maps II (cross sections for horizontal and inclined strata)
Week 13	Geophysics I (An introduction to geophysics)
Week 14	Geophysics II (seismic method)
Week 15	Geophysics III (electrical resistivity method)
Week 16	Preparatory week before the final Exam

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Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Not available

Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Engineering Geology , university of Basrah , 2001	Yes
Recommended Texts	1- Practical engineering geology, Steve Hencher, Spon press. An introduction to applied and environmental geophysics, John M. Reynolds, Wiley-Blackwell.	No
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	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note:

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.