

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Geology		Module Delivery
Module Type	Support or related learning activity		☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar
Module Code	CE105		
ECTS Credits	5		
SSWL (hr/sem)	78		
USSWL (hr/sem)	47		
SWL (hr/sem)	125		
Module Level	1	Semester of Delivery	
Administering Department	CE	College	GE
Module Leader	Jihad qais Ruaa qassim	e-mail	Jihad.qais@alnaji-uni.edu.iq ruaa.qassim@alnaji-uni.edu.iq
Module Leader's Acad. Title	Ass.Lecturer Ass.Lecturer	Module Leader's Qualification	MSc MSc
Module Tutor	Name (if available)	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	None	Semester	
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives أهداف المادة الدراسية	1. Introduce basic definitions and introductory concepts for general geology and engineering geology. 2. Demonstrate an understanding of the relationship between geology and engineering geology and their application to decision-making in the construction of civil engineering works. 3. Introduce students to the assessment of the influence of geological factors on the conception, location, planning, feasibility, design, construction, cost, safety, and management of civil engineering works. 4. Enables students to utilize knowledge about the earth's structure, surface processes, sedimentology, sedimentation, and stratigraphy. 5. Introduce the different rock types: igneous, sedimentary, and metamorphic rocks, their occurrence, and their formation. Also, knowledge about various properties of minerals and their engineering significance 6. Understand the importance of various associated geological structures like folds, faults, and joints present at the site for foundations. 7. Enables students to calculate the physical and mechanical properties of rocks and soils.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Important: Write at least 6 Learning Outcomes, better to be equal to the number of study weeks. 2. Making a separation between general geology and engineering geology and knowing the application of geology in civil engineering as well as the different types of geology. 3. Describe the earth's regions and characteristics. 4. Identify and describe the minerals as well as their properties. 5. Identify and classify rocks using basic geologic classification systems. 6. Identify types of geological structures (Joints, folds, faults, Dome...), explain how it's formed, and their side effects on the engineering projects. 7. Identify types of weathering; relate processes and their products to the present day environments. 8. Ability to identify different types of soils and explain their physical and mechanical properties (shear strength).
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. <u>Part A</u> Introduction to Geology, Branches of Geology, Engineering Geology (definition and applications), Relevance of Geology to Civil Engineering and Description of the Earth's Regions. [5 hrs].

	<u>Part B</u> Study of minerals and identification according to their physical properties. [10 hrs] <u>Part C</u> Rocks: characteristics and engineering properties. Classification and identification of igneous, sedimentary and metamorphic rocks. [16 hrs] <u>Part D</u> Study secondary geological structures, including folds, faults, and joints. [10 hrs] <u>Part F</u> Study types of weathering and factors effecting weathering. [12 hrs] <u>Part G</u> Study the physical and mechanical properties of rocks and soils. [22 hrs]
--	---

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main adopted strategy in delivering this module, encourage students' participation in the exercises, refining and expanding their critical thinking skills comprised: 1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Tests and Exams. 5. In-Class Questions and Discussions. 6. Connection between Theory and Application. 7. Extracurricular Activities. 8. In- and Out-Class oral conservations.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	1	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	1	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	All
Summative assessment	Midterm Exam	2hr	10% (10)	7	LO #1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Geology: basic concepts ,introduction to engineering geology
Week 2	Basics of Earth crust, minerals and factors affecting earth crust
Week 3	Type of rocks
Week 4	Igneous rocks
Week 5	Sedimentary rocks
Week 6	Metamorphic rocks
Week 7	Mid-term Exam +Lab exam
Week 8	Secondary geological structures
Week 9	Rocks and weathering
Week 10	Formation of soil, origin, and Characteristics
Week 11	Physical and engineering properties of soils and phase relation
Week 12	Mechanical properties of soil
Week 13	Geological Maps
Week 14	Earthquakes, introduction and concept
Week 15	Geophysical test
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction geology and engineering geology
Week 2	Lab 2: tests related to the factors affecting earth crust
Week 3	Lab 3: type of rocks
Week 4	Lab 4: types of secondary geological structures
Week 5	Lab 5: type of tests related phase relation
Week 6	Lab 6: type of tests related to mechanical properties of rocks
Week 7	Lab 7: tests related to earthquakes

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. Price, D. G. (2008). Engineering geology: principles and practice. Springer Science & Business Media. 2. Thompson, G. R., & Turk, J. (1998). Introduction to physical geology. Brooks/Cole Publishing Company	Yes
Recommended Texts	MUNI BUDHU (2011)"Soil Mechanics and Foundations" 3rd edition, John Wily & Sons, Inc., USA.	No
Websites	https://www.youtube.com/watch?v=MMVNpMZp6LQ	

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.