

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Geology		Module Delivery
Module Type	D		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CIV002		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	UGI	Semester of Delivery	
Administering Department	CV101	College	Engineering College
Module Leader	Dr. Junied Aziz Bakr	e-mail	Junied.bakr@uoanabr.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor		e-mail	E-mail
Peer Reviewer Name	Name	e-mail	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

<p>Module Aims أهداف المادة الدراسية</p>	<ol style="list-style-type: none"> 1. To introduce basic geology and the principles of site investigation to civil engineering students. 2. Students should develop an appreciation of geologic processes and their influence civil engineering works. 3. Acquire knowledge of the most important rocks and minerals and be able to identify them. 4. Interpret geological maps with an emphasis on making construction decisions. 5. Demonstrate an understanding of the relationship between the built environment and its geological substrate and the possible impacts of natural earth hazards on engineered structures.
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"> 1. Demonstrate an understanding of the concepts and language of geology and engineering geology. 2. Demonstrate an understanding of architecture of the earth surface. 3. Demonstrate an understanding of minerals properties. 4. Demonstrate an understanding of Rocks: major rock groups Igneous, sedimentary and metamorphic. 5. Demonstrate an understanding of Engineering Properties of Rocks. 6. Demonstrate an understanding of Structural Geology and Strike and dip, Folds, Faults: types and structures, Joints. 7. Demonstrate an understanding of Topographic and Geologic maps and Ground-water Geology.
<p>Indicative Contents المحتويات الإرشادية</p>	<p>Indicative content includes the following.</p> <p><u>Chapter one</u> Introduction and Overview: engineering geology vs. geology, engineering geology and civil engineering [5 hrs]</p> <p><u>Chapter Two</u> Minerals properties: defining of the Minerals, Types of Minerals, the physical and chemical properties of minerals, and the industrial uses of minerals [10 hrs]</p> <p><u>Chapter Three</u> Igneous Rock, types of igneous rocks, Texture and composition, and some engineering considerations [5 hrs]</p> <p><u>Chapter Four</u> Surface Processes and Sedimentary Rocks: surface processes, chemical weathering, mechanical weathering, the grade of weathering, sediment transport, deposition environment, lithification, sedimentary rocks classification, features of sedimentary</p>

	<p>rocks, and engineering considerations of sedimentary rocks [15 hrs]</p> <p><u>Chapter Five</u> Metamorphic rocks: Types of Metamorphic rocks, Metamorphic processes, Texture of metamorphic rocks, Metamorphic grade, and Engineering considerations of metamorphic rocks [5 hrs]</p> <p><u>Chapter Six</u> Engineering Properties of Rocks: rocks properties, failure criteria in rocks, and engineering classification of intact rocks, [5 hrs]</p> <p><u>Chapter Seven</u> Structural Geology: Rock Deformation, Folds in rock, Strike and Dip, Rock Fractures, Types of movement along the fault plane, Field recognition of faulting, and Folds and faults combined, [10 hrs]</p> <p><u>Chapter Eight</u> Topographic and Geologic maps: topographic maps, constructing contour lines, geological map, and the use of geological map, [15 hrs]</p> <p><u>Chapter Nine</u> Ground-water Geology: ground-water, aquifers and aquicludes, groundwater flow, origin of subsurface water, water table (wt), vadose zone, and hydrogeological investigations, [5 hrs]</p>
<p>Learning and Teaching Strategies استراتيجيات التعلم والتعليم</p>	
<p>Strategies</p>	<p>Engineering Geology courses require effective learning and teaching strategies to ensure students develop a strong understanding of complex concepts and their practical applications. The range of strategies that can enhance the learning experience for students in engineering geology courses. These strategies include lecture-based teaching, practical applications, problem-solving assignments, group work and discussions, technology integration, field trips and site visits, guest speakers, assessments and feedback, continuous learning, and encouraging self-directed learning. By incorporating these strategies, educators can create an engaging and comprehensive learning environment that equips students with the knowledge, skills, and critical thinking abilities necessary for success in the field of engineering geology.</p>

Module Evaluation						
تقييم المادة الدراسية						
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome	
Formative Assessment	Quizzes		5	25% (25)	3, 6,10,14	LO #1, 3,5, and 7
	Online Assignments (HomeWorks)		1	4% (4)		LO # 4 and 7
	Onsite Assignments (Class Works)			5% (5)		
	Report					LO # 2,6 and 7
	Lab 15% of the 40		1	6% (6)		LO # 1-7
Summative Assessment 60%	Midterm Exam		2 hr	10% (10)	8	
	Final Exam 50%	Theory	3 hr	40% (40)	All	All
		Lab		10		
Total assessment			Final Exam			
			100% (100 Marks)			

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	22	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	1.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Delivery Plan (Weekly Syllabus) المنهاج الأسبوعي النظري	
	Material Covered
Week 1	Introduction and Overview: engineering geology vs. geology
Week 2	Minerals properties
Week 3	Igneous Rock
Week 4	Surface Processes and Sedimentary Rocks
Week 5	Surface Processes and Sedimentary Rocks
Week 6	Metamorphic rocks
Week 7	Mid-term Exam
Week 8	Engineering Properties of Rocks
Week 9	Structural Geology
Week 10	Structural Geology
Week 11	Topographic and Geologic maps
Week 12	Topographic and Geologic maps
Week 13	Ground-water Geology
Week 14	Ground-water Geology

Week 15	Second half term Exam
Week 16	

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Minerals description
Week 2	Lab 2: Minerals classification
Week 3	Lab 3: Rocks description
Week 4	Lab 4: Rocks classification
Week 5	Lab 5: 6. Volume & Density measurement of rocks
Week 6	Lab 6 Specific Gravity & porosity measurement of rocks
Week 7	Lab 7: Uniaxial Compressive Strength
Week 8	Lab 8: Drawing Engineering Geological Maps

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	West, T. R. (1995). Geology Applied to Engineering. 1st Edition. Waveland Pr Inc. ISBN-13: 978-1577666554.	Yes
Recommended Texts	Bell, F. G. (2007). Engineering Geology. 2nd Edition. ButterworthHeinemann is an imprint of Elsevier.	Yes
Websites	https://www.uoanbar.edu.iq/Bank-Section.php	

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.