

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering geology		Module Delivery
Module Type	Basic learning activities		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CIV026		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department	CIV	College	ENG
Module Leader	م.م غدير هيثم حسن	e-mail	
Module Leader's Acad. Title		Module Leader's Qualification	
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	01/04/2024	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	
Co-requisites module	Soil Mechanics	Semester	5

## Module Aims, Learning Outcomes and Indicative Contents

### أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p><b>Module Aims</b> أهداف المادة الدراسية</p>	<ol style="list-style-type: none"><li>1. To develop a meaningful link between geology and civil engineering structures in context of site investigations and the project requirements.</li><li>2. To understand the behavior of different geomaterial, such as, rocks and soils.</li><li>3. To identify the occurrence, types, importance, and rules of groundwater in civil engineering context.</li><li>4. This course deals with the basic geological investigations required for megastructures, for example, dams.</li><li>5. To understand maps' basics and plotting cross sections for different subsurface settings.</li><li>6. To understand basics of geophysical techniques and geophysical site investigations.</li></ol>
<p><b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية</p>	<ol style="list-style-type: none"><li>1. Recognizing how engineering geology works with different civil engineering disciplines.</li><li>2. Listing the various types of rocks and their formation.</li><li>3. Listing the various types of soils and their formation.</li><li>4. Representing the types, and rules of groundwater on civil engineering projects.</li><li>5. Summarizing what is meant by geological investigations for tunnels as megastructures</li><li>6. Summarizing what is meant by geological investigations for dams as megastructures.</li><li>7. Identifying the importance of physical properties of rocks on rocks' behavior.</li><li>8. Identifying the importance of mechanical properties of rocks on rocks' behavior.</li><li>9. Explaining seismic wave's types and how earthquake events can effect on civil engineering projects.</li><li>10. Defining different types of rock slope failures.</li><li>11. Describing variations in topography using contour maps, plotting contour maps</li><li>12. Describing subsurface attitude (i.e. horizontal layers) using two dimensional cross-sections.</li><li>13. Understating geophysics principles, data collection, and its importance for indirect geophysical site investigations.</li><li>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.</li><li>15. To explain electrical resistivity basics and applications for site investigations.</li></ol>
<p><b>Indicative Contents</b> المحتويات الإرشادية</p>	<ol style="list-style-type: none"><li>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</li></ol>

	<p>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.</p>
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### Learning and Teaching Strategies

#### استراتيجيات التعلم والتعليم

<b>Strategies</b>	<p>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.</p>
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### Student Workload (SWL)

#### الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	100		

### Module Evaluation

#### تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
<b>Formative assessment</b>	<b>Quizzes</b>	2	10% (10)	5, 10	LO # 3,4,5; 6, and 7
	<b>Assignments</b>	2	10% (10)	2, 12	LO # 1,2; 8,9 and 10
	<b>Projects / Lab.</b>	1	10% (10)	Continuous	All
	<b>Report</b>	1	10% (10)	13	LO All
	<b>Midterm Exam</b>	2 hr	10% (10)	7	LO # 1-8

<b>Summative assessment</b>	<b>Final Exam</b>	2hr	50% (50)	16	All
<b>Total assessment</b>			100% (100 Marks)		

### Delivery Plan (Weekly Syllabus)

#### المنهاج الاسبوعي النظري

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

### Delivery Plan (Weekly Lab. Syllabus)

#### المنهاج الاسبوعي للمختبر

	Material Covered
<b>Week 1</b>	Not available

## Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
<b>Required Texts</b>	Engineering Geology , university of Basrah , 2001	Yes
<b>Recommended Texts</b>	1- Practical engineering geology, Steve Hencher, Spon press. 2- An introduction to applied and environmental geophysics, John M. Reynolds, Wiley-Blackwell.	No
<b>Websites</b>		

## Grading Scheme

مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	<b>A - Excellent</b>	امتياز	90 - 100	Outstanding Performance
	<b>B - Very Good</b>	جيد جدا	80 - 89	Above average with some errors
	<b>C - Good</b>	جيد	70 - 79	Sound work with notable errors
	<b>D - Satisfactory</b>	متوسط	60 - 69	Fair but with major shortcomings
	<b>E - Sufficient</b>	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 – 49)</b>	<b>FX – Fail</b>	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	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.