

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	General Geology II		Module Delivery
Module Type	Basic learning activities		<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	PE112		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	
Administering Department	Type Dept. Code	College	Type College Code
Module Leader	e-mail		
Module Leader's Acad. Title	Module Leader's Qualification		
Module Tutor	e-mail		
Peer Reviewer Name	e-mail		
Scientific Committee Approval Date	1/06/2023	Version Number	1

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	PE106	Semester	1
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Objectives أهداف المادة الدراسية</p>	<p>The objectives of a geology module typically aim to provide students with a comprehensive understanding of the following:</p> <p>Earth Resources and Environmental Geology: Students examine the formation, exploration, and extraction of Earth's natural resources (such as minerals, fossil fuels, and groundwater) .</p> <p>Paleontology and Evolution: Students study the principles of paleontology, including fossil identification and analysis, and how fossils provide evidence for the evolution of life on Earth.</p> <p>Geological Time and History: Students gain an understanding of the Earth's geological history, including the development of different geological time scales, the processes of fossilization, and the evolution of life on Earth.</p> <p>Scientific Inquiry and Research Skills: Students develop critical thinking, analytical, and research skills through laboratory work, data analysis, and independent research projects.</p>
<p>Module Learning Outcomes مخرجات التعلم للمادة الدراسية</p>	<p>This learning outcome implies that upon completing the geology module, students should have achieved the following:</p> <p>1- Knowledge of Geological Processes: Students should have a solid understanding of the fundamental processes that shape the Earth, such as plate tectonics, erosion, weathering, and deposition.</p> <p>2- Understanding of Geological Principles: Students should be familiar with key geological principles, including rock formation and identification, geological time, stratigraphy, and the interpretation of geological maps and cross-sections.</p> <p>3- Application of Geology: Students should be able to apply their knowledge of geology to analyze and interpret geological phenomena, such as the formation of mountains, earthquakes, volcanoes, and the distribution of natural resources. They should also be capable of recognizing and assessing geological hazards and their potential impact on human activities.</p> <p>4- Critical Thinking and Problem-Solving: Students should develop critical thinking skills and be able to apply geological concepts to solve problems and make informed decisions in both academic and real-world contexts.</p> <p>5- Communication of Geological Concepts: Students should be able to effectively communicate geological concepts, findings, and interpretations using appropriate scientific terminology and conventions, both in written and oral forms.</p>
<p>Indicative Contents المحتويات الإرشادية</p>	<p>INTRODUCTION: SEDIMENTOLOGY AND STRATIGRAPHY(3hrs.) Classification of sediments and sedimentary rocks</p> <p>STRATIGRAPHY: concepts and Lithostratigraphy Geological time, Stratigraphic units, Lithostratigraphy, Applications of lithostratigraphy (3hrs)</p> <p>BIOSTRATIGRAPHY; Biostratigraphic units, Taxa used in biostratigraphy, Biostratigraphic correlation(3hrs)</p>

	<p>Biostratigraphy in relation to other stratigraphic techniques</p> <p>Geochronology and chronostratigraphy (3hrs)</p> <p>Basin analysis , Tectonics and sedimentation: kinds of sedimentary basin(3hrs)</p> <p>Structural geology; Stress and Strain : includes different types of stress (compression, tension, shear) and strain (elastic, plastic, brittle). (3hrs)</p> <p>Rock Deformation : The study of how rocks respond to stress and deform(3hrs)</p> <p>Geological Structures: Identification, description, and classification of geological structures(3hrs)</p> <p>Field Mapping: This includes methods for measuring strike and dip and creating geological maps and cross-sections. (3hrs)</p> <p>Rheology: mechanical behavior of rocks under different conditions of temperature and pressure(3hrs)</p> <p>Applied Structural Geology: The application of structural geology principles in petroleum geology (3hrs)</p>
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Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<p>Geology, as a scientific discipline, involves the study of the Earth's structure, composition, history, and processes. The learning and teaching strategies employed in geology often focus on a combination of theoretical knowledge, practical fieldwork, laboratory analysis, and interactive discussions. Here are some common learning and teaching strategies used in geology:</p> <p>Fieldwork: Fieldwork plays a crucial role in geology education. Students are often taken to geological sites, such as outcrops, mountains, and coastal areas, where they can observe geological features firsthand. Field trips allow students to apply theoretical concepts, practice data collection techniques, and develop their observational and interpretive skills.</p> <p>Laboratory work: Geology involves various laboratory techniques for analyzing rocks, minerals, and other geological materials. Laboratory work provides hands-on experience in using tools and instruments like microscopes, spectrometers, and chemical analysis equipment. Students learn how to identify minerals, analyze rock formations, and interpret geological data through experiments and sample analysis.</p> <p>Visual aids and multimedia: Geology often relies on visual representations to understand complex concepts. The use of diagrams, maps, charts, and models helps students visualize geological processes, landforms, and structural features. Multimedia resources like videos, animations, and virtual reality (VR) simulations can enhance learning by providing interactive and immersive experiences.</p>

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	5.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

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

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	INTRODUCTION: SEDIMENTOLOGY AND STRATIGRAPHY
Week 2	Classification of sediments and sedimentary rocks
Week 3	STRATIGRAPHY: concepts and Lithostratigraphy
Week 4	Geological time, Stratigraphic units, Lithostratigraphy, Applications of lithostratigraphy
Week 5	BIOSTRATIGRAPHY; Biostratigraphic units, Taxa used in biostratigraphy, Biostratigraphic correlation Biostratigraphy in relation to other stratigraphic techniques

Week 6	Geochronology and chronostratigraphy
Week 7	Basin analysis , Tectonics and sedimentation: kinds of sedimentary basin
Week 8	Exam 1
Week 9	Structural geology; Stress and Strain : includes different types of stress (compression, tension, shear) and strain (elastic, plastic, brittle).
Week 10	Rock Deformation : The study of how rocks respond to stress and deform
Week 11	Geological Structures: Identification, description, and classification of geological structures
Week 12	Field Mapping: This includes methods for measuring strike and dip and creating geological maps and cross-sections.
Week 13	Tectonics: plate tectonics, mountain building, and the formation of basins
Week 14	Rheology: mechanical behavior of rocks under different conditions of temperature and pressure
Week 15	Applied Structural Geology: The application of structural geology principles in petroleum geology
Week 16	Exam 2

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	principles of stratigraphy, including superposition, original horizontality, lateral continuity, and faunal succession
Week 2	Stratigraphic Columns; Lithology and Sedimentary Structures; Stratigraphic Correlation
Week 3	Depositional Environments; Geologic time scale a; Interpretation and Geological History
Week 4	Geologic time scale a; Interpretation and Geological History
Week 5	Contour Maps; Isopach Maps, Topographic Map
Week 6	study of rock deformation and structural features.
Week 7	mechanical properties of rocks and their response to stress.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Sedimentology and Stratigraphy By Gary Nichols. John Wiley & Sons, Ltd., Publication. 2009. Principle of sedimentology and stratigraphy By Sam Boggs,J.R. 2006	Yes

Recommended Texts		Yes
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.