MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Principle to Petroleum Engineering			**Module Delivery**	
Module Type	Core			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	PRPE112				
ECTS Credits	4				
SWL (hr/sem)	125				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	PE		**College**	OGE	
Module Leader	Fadhil S.K. Al-Sharshahy		**e-mail**	fadhilkadhim47@yahoo.com	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	NA		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	English Language I	**Semester**	1

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1- Identify the basics of oil and gas industry 2- This course aims to get familiar with the abbreviations and terminology used in the oil industry 3- Explain all operations that related to explore, drill, completion and produce oil

	wells as well as post-production procedures like well stimulation and production enhancement.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	To Understand the fundamentals of the petroleum industry, which including: 1- Petroleum & Crude Oil Definition 2- Petroleum Formation Theories 3- Petroleum exploration methods 4- Oil and gas drilling operation and drilling fluid types 5- Identify oil and gas reservoirs, types of oil and the nature of oil formations 6- Well completion and Production operations 7- post-production operations like well stimulation and artificial lift 8- Drive Mechanisms, secondary recovery and enhance oil recovery 9- Get familiar with the key abbreviations and terminology used in the oil industry.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part I: fundamentals of petroleum engineering** Petroleum & crude oil definition, API (American Petroleum Institute), associated gas and non-associated gas, The reservoir classification, biogenic and the abiotic theories for petroleum formation, rock types and petroleum history. (24 hrs) **Part II: Oil and gas well operations** Drilling operation, drilling fluid types and benefits, well logging and formation evaluation, well cementing and casing, perforation techniques and production operation. (28 hrs) **Part III: post-production operation** Enhance oil recovery by using artificial lift techniques, secondary and tertiary recovery techniques. (8 hrs)

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	The main strategy that will be adopted in delivering this module is to Encourage students to ask and answer questions, as well as presenting many explanatory videos to increase students' knowledge, since most of the equipment and facilities for the oil industry are not available in daily life and it is difficult to see them, and also to introduce the student to the most important petroleum terms, abbreviations and symbols that he will need to complete the rest of the academic stages Or to work in the future as an oil engineer.

Student Workload (SWL)
الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4

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**	2	10% (10)	4, 11	1,2,3,4 and 5
	Assignments	2	10% (10)	3, 10	1,2,3,4 and 5
	Projects /	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	1,2,3,4,5 and 6
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	1,2,3,4 and 5
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Petroleum & Crude Oil Definition
Week 2	Petroleum Formation Theories
Week 3	Petroleum exploration methods
Week 4	Drilling Engineering
Week 5	Drilling Fluids
Week 6	Cable-tool drilling & Rotary Drilling
Week 7	Reservoir Engineering
Week 8	Reservoir fluids properties
Week 9	Petrophysical rock properties
Week 10	Formation evaluation & well logging
Week 11	Well Completion
Week 12	Production Engineering
Week 13	Oil and gas separators
Week 14	Artificial lift
Week 15	Drive Mechanisms, secondary recovery and enhance oil recovery
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Dalvi, Samir (2015). Fundamentals of Oil & Gas Industry for Beginners. - John R. Fanchi (2017). Introduction to Petroleum Engineering. - Moshood Sanni (2018). Petroleum Engineering: Principles, Calculations, and Workflows	No
Recommended Texts	- Ahmed, Tarek (2010). Reservoir Engineering Handbook.	yes
Websites	https://guides.loc.gov/oil-and-gas-industry https://www.drillingformulas.com/ https://glossary.slb.com/en/search#sort=relevancy	

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.

Module Information
معلومات المادة الدراسية

Module Title	Calculus I	**Module Delivery**	
Module Type	**Basic**	☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CALC113		
ECTS Credits	**5**		
SWL (hr/sem)	**150**		

Module Level	UGI	**Semester of Delivery**	1
Administering Department	PE	**College**	OGE
Module Leader	Muaid	**e-mail**	E-mail
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	PHD
Module Tutor	2	**e-mail**	E-mail
Peer Reviewer Name	Name	**e-mail**	E-mail
Scientific Committee Approval Date	01/06/2023	**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 Aims أهداف المادة الدراسية	1-Developing and strengthening students' problem-solving skills. In particular, students 2- Teaching them to read, write, speak, and think in the language of mathematics. 3- Learning how to apply calculus tools to a variety of problem situations.
Module Learning Outcomes	1- Developing and strengthening students' problem-solving skills. In particular, students

مخرجات التعلم للمادة الدراسية	2- Teaching them to read, write, speak, and think in the language of mathematics. 3- Learning how to apply calculus tools to a variety of problem situations.
Indicative Contents المحتويات الإرشادية	• The area of mathematics known as calculus is primarily concerned with limits, functions, derivatives, trigonometric functions, and infinite series. An important component of modern mathematics education in this subject. Using derivatives to solve related rates problems • Using derivatives to approximate points (linearization) • Evaluating limits using L'Hopital's law • Locating critical points using the first derivative • Identifying increasing/decreasing values using the first derivative • Locating critical points using the second derivative • Identifying concavity and inflection points using the second derivative • Using the first/second derivative tests to find local and global extrema • Using derivatives to solve optimization problems

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	• Give emphasis on conceptual understanding. • Set challenging homework that expands on what you learned in class. • Cooperative learning techniques should be used. • Ask thoughtful questions. • Concentrate on logical thinking and actual problem-solving. • Use a variety of assessment methods.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
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, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects /	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Exponential and logarithm functions
Week 2	Application of Exponential and logarithm functions
Week 3	The relationship between the Exponential function and the logarithm function
Week 4	Trigonometric functions
Week 5	The inverse of Trigonometric functions
Week 6	Hyperbolic functions
Week 7	The inverse of Hyperbolic functions
Week 8	Derivative
Week 9	Implicit differentiation Exponential functions derivative
Week 10	Maximum and Minimum using Derivatives
Week 11	The logarithm functions derivative
Week 12	Derivative of hyperbolic functions
Week 13	Applications of differentiation
Week 14	Increasing and decreasing functions
Week 15	**Preparatory week before the final Exam**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	George B. Thomas, "THOMAS' CALCULUS ", Eleventh Edition 2011, Dorling Kindersley (India). • Murry R. Spiegel," Mathematical Handbook of formulas and tables",1968.	
Recommended Texts	• 2-Ford , S.R. and Ford , J.R. " Calculus " , (1963) McGraw-Hill. • 3-K.Back house and S.P.T. Houldsworth " Pure Mathematics a First Course " (1979) , S1 Edition , Longman Group .	
Websites	• https://tutorial.math.lamar.edu/classes/calci/calci.aspx • https://learn.saylor.org/course/MA005	

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.

Module Information
معلومات المادة الدراسية

Module Title	**English Language I**		**Module Delivery**	
Module Type	**Suplement**		**Theory Lecture**	
Module Code	**ENLA111**			
ECTS Credits	**2**			
SWL (hr/sem)	**100**			
Module Level	1	**Semester of Delivery**	1	
Administering Department	Type Dept. Code	**College**	OGE	
Module Leader	Dr. Najem Al-Rubaiey	**e-mail**	100108@uotechnology.edu.iq	
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.	
Module Tutor	None	**e-mail**	None	
Peer Reviewer Name	Dr. Fadhil S. Kadhim	**e-mail**	150010@uotechnology.edu.iq	
Review Committee Approval	01/06/2023	**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 Aims أهداف المادة الدراسية	In view of the growing importance of English as a tool for global communication and the consequent emphasis on training students to acquire language skills, this syllabus of English has been designed to develop linguistic, communicative and critical thinking competencies of Engineering students. In English classes, the focus is going to be on the skills development in the areas of vocabulary, grammar, reading and writing. For this, we are going to use the prescribed text for detailed study. The students are encouraged to read the texts leading to reading comprehension and different passages may be given for practice in the class. The time should be utilized for working out the exercises given after each excerpt, and also for supplementing the exercises with authentic materials of a similar kind, for example, newspaper articles, advertisements, promotional material etc. The focus in this syllabus is on skill development, fostering ideas and practice of language skills in various contexts and cultures.

	The course will help to: ➢ Improve the language proficiency of students in English with an emphasis on Vocabulary, Grammar, Reading and Writing skills. ➢ Equip students to study academic subjects more effectively and critically using the theoretical and practical components of English syllabus. ➢ Develop study skills and communication skills in formal and informal situations.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Use English Language effectively in spoken and written forms. 2. Comprehend the given texts and respond appropriately. 3. Communicate confidently in various contexts and different cultures. 4. Acquire basic proficiency in reading and listening, writing and speaking skills.
Indicative Contents المحتويات الإرشادية	Key skills taught will include: The basic structure and style of an academic essay. How to read texts more quickly and more critically, and how to use their ideas in written and oral arguments. What to listen out for in lectures and how to take more effective notes. How to participate more confidently in group discussion work. Improving accuracy in speaking and writing. Using a wider range of vocabulary to express your views more clearly. Giving formal presentations
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Vocabulary building. This is an important component of any English class. This strategy focuses a portion of each classroom session on building a better vocabulary. Writer's workshop. Have students participate in a writer's workshop several times each year. The writing workshop model allows students to learn about and participate in all aspects of the writing process: drafting, revision, editing and publishing. Peer response and editing. This can be a very valuable teaching strategy for both the teacher and the student, and there are many peer response strategies to try in class. Students get a chance to think critically about others' writing and see the results their classmates got from a writing assignment.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	2.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	10	10% (10)	1- 10	LO # 1-4
	Assignments	5	10% (10)	11-14	LO # 1-4
	Projects	1	10% (10)	Continuous	LO # 1, 2
	Report	1	10% (10)	15	LO # 3
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO # 1-4
	Final Exam	2hr	50% (50)	15	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	An international industry
Week 2	Oil & Gas –Upstream
Week 3	Oil and Gas –Downstream

Week 4	Oil and Gas: Safety First
Week 5	Finding Oil and Gas
Week 6	Drilling
Week 7	Pipes and Pipelines
Week 8	Working Offshore
Week 9	Natural Gas
Week 10	Oil and the Environment
Week 11	Workshop operations
Week 12	Repairs and maintenance
Week 13	The refinery
Week 14	Emergencies
Week 15	Petrochemicals
Week 16	**Final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	English for Oil and Gas #1 (Oxford English for Careers: Oil and Gas, Lewis Lansford, D'Arcy Vallance, Jon Naunton, and Alison Pohl. Oxford University Press.).	Yes
Recommended Texts	English for Oil and Gas #2 (Oxford English for Careers: Oil and Gas, Lewis Lansford, D'Arcy Vallance, Jon Naunton, and Alison Pohl. Oxford University Press.).	No
Websites	https://t.me/+qmKQz0lBjq8zYWQy	

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB 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.

Module Information معلومات المادة الدراسية					
Module Title	Computer Programming I			**Module Delivery**	
Module Type	**Support or related learning activity**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	COPR115				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	PE		**College**	OGE	
Module Leader	**Salam A. Thajeel**		**e-mail**	E-ailsalam.a.thajil@uotechnology.edu.iq	
Module Leader's Acad. Title	Asst. Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	NA		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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 Aims أهداف المادة الدراسية	is an inevitable part of commerce education. The course is aiming to equip all the commerce aspirants to have basic skills as well as hands on experience on word processing, for creating excel spreadsheets, for building databases through the use of Microsoft Office Word, Excel, and VBA .
Module Learning Outcomes	1- To familiarize students with the use of Microsoft Word 2- To familiarize students with the use of MS Excel 3- To familiarize students with the use of Excel Visual basic application

مخرجات التعلم للمادة الدراسية	
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part I: fundamentals of Microsoft word In Part 1 we will provide students with the skills to create documents using Microsoft Word. It will also provide knowledge of how to create your own document for work, college, or home. Students will learn the basics, creating documents, formatting text, adding graphics, images, Word chart, and many other features available. You will see a full list of course content below. You'll also cover charts and tables, as well as using forms and mail merge. Part II: fundamentals of Microsoft Excel this part provides all the tools necessary to create and use basic spreadsheets. Participants will receive an overview of the interface and learn the various methods for entering and editing data. Additionally, participants will learn the various ways to write formulas, Create Worksheets and Workbooks, data analysis, create charts. Apply Custom Data Formats and Layouts, and others which will used to streamline reporting, turn raw data into presentation-ready graphs or chart. where One of the most common uses of Excel in petroleum engineering is for organizing and analyzing data related to well production data. Part III: Visual basic Application In Part 3 we will provide students with the skills to create & develop vb applications, where that allow Engineers to develop engineering applications that run in the Windows environment. VB provides the engineer a programming tool to write simple programs quickly that meet their needs. Example programs written using VB include gas and oil fluid correlations, interpolation software, gas well bottom hole pressure from surface conditions, volumetric reserve calculations, simple log analysis, water pattern analysis and bottom hole pressure analysis.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to Encourage students to ask and answer questions, as well as training students to implement many practical exercises in the laboratory (which covers most of what is studied in theoretical lectures), which in turn gives students the ability to carry out the work required of them in the future in their practical life.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	75	**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**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	• Microsoft Word Create and Manage Documents: Create a Document, Navigate Through Document, Format a Document, Customize Options and Views for Documents, Print and save documents.
Week 2	Format Text, Paragraphs, and Sections: Insert Text and Paragraphs, Format Text and Paragraphs, Order and Group Text and Paragraphs
Week 3	Create Tables and Lists: Create a Table, modify a Table, Create and Modify a List.
Week 4	Insert and Format Graphic Element: Insert Graphic Elements, Format Graphic Elements, Insert and

	Format SmartArt Graphics
Week 5	**Microsoft Excel** : Manage Workbook Options and Setting: Create Worksheets and Workbooks, Navigate in Worksheets and Workbooks, Format Worksheets and Workbooks, Customize Options and Views for Worksheets and Workbook, Configure Worksheets and Workbooks for Distribution
Week 6	Apply Custom Data Formats and Layouts: Apply Custom Data Formats and Validation, Apply Advanced Conditional Formatting and Filtering, Create and Modify Custom Workbook Elements,Create Table: Create and Manage Table, Manage Table Styles and Options, Filter and Sort a Table
Week 7	Perform Operations with Formulas and Functions: Summarize Data by using Function, . Perform Conditional Operations by using Functions, Format and Modify Text by using Functions
Week 8	Create Charts and Objects: Create Charts, Format Charts, . Insert and Format Object,Manage Workbook Options and Settings
Week 9	**Excel VBA:**Introducing Visual Basic for Applications Displaying the Developer Tab in the Ribbon Recording a Macro
Week 10	Working with Procedures and Functions: Understanding Modules Creating a Standard Module,Understanding Procedures,Creating a Sub Procedure Calling Procedures,Using the Immediate Window to Call Procedures Creating a Function Procedure
Week 11	Understanding Objects: Understanding Objects,Navigating the Excel Object HierarchyUnderstanding Collections,Using the Object Browser,Working with Properties Using the With Statement,Working with Methods
Week 12	Using Expressions, Variables, and Intrinsic Functions: Understanding Expressions and Statements,Declaring,Variables,UnderstandingDataTypes,Working with Variable Scope
Week 13	Controlling Program Execution: Understanding Control-of-Flow Structures Workingwith Boolean Expressions,Using the If...End If Decision Structures,Using the Select Case...End Select Structure
Week 14	,Using the Do...Loop Structure,Using the For...To...Next Structure,Using the For Each...Next Structure
Week 15	Working with Forms and Controls: Understanding UserForms,Using the Toolbox Working with UserForm Properties, Events, and Methods,, Understanding Controls

Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	practical exercises to Create and Manage Documents: Save & open document, Format a Document, Customize Options and Views for Documents, Print and save as documents.
Week 2	practical exercises about the Format Text, Paragraphs, and Sections: Insert Text and Paragraphs, Format Text and Paragraphs, Order and Group Text and Paragraphs
Week 3	practical exercises to Create Tables and Lists: Create a Table, modify a Table, Create and Modify a List.
Week 4	Insert and Format Graphic Element: Insert Graphic Elements, Format Graphic Elements, Insert and Format SmartArt Graphics (practical exercises + homework)
Week 5	(practical exercises + homework) about Microsoft Excel :introduction to interface , Create Worksheets and Workbooks, Import data from a delimited text file ▪ Add a worksheet to an existing workbook ▪ Copy and move a worksheet
Week 6	practical exercises to :▪ Change worksheet tab color ▪ Rename a worksheet ▪ Change worksheet order ▪ Insert and delete columns or rows ▪ Change workbook themes ▪ Adjust row height and column width ▪ Insert headers and footers
Week 7	practical exercises with homework about Customize Options and Views for Worksheets and Workbooks:▪ Hide or unhide worksheets ▪ Hide or unhide columns and rows ▪ Customize the Quick Access toolbar ▪ Modify document properties ▪ Display formulas
Week8	(practical exercises + homework) to Create Charts and Objects: Create Charts, Format Charts, . Insert and Format Object,Manage Workbook Options and Settings
Week9	Excel VBA:Introducing Visual Basic for Applications Displaying the Developer Tab in the Ribbon Recording a Macro (practical)
Week10	(practical exercises + homework): about Working with Procedures and Functions: Creating a Sub ProcedureCalling Procedures, Creating a Function Procedure
Week11	Using Expressions, Variables, and Intrinsic Functions: Understanding Expressions and Statements,Declaring,Variables,UnderstandingDataTypes,Working with Variable

	Scope(practical exercises + homework)
Week12	Working with Boolean Expressions, Using the If...End If Decision Structures, Using the Select Case...End Select Structure(practical exercises + homework):
Week13	Working with Do...Loop Structure,Using the For...To...Next Stru Working with Boolean Expressions, Using the If...End If Decision Structures, Using the Select Case...End Select Structure Working with Boolean Expressions, Using the If...End If Decision Structures, Using the Select Case...End Select Structure cture,Using the For Each...Next Structure(practical exercises + homework)
Week14	Working with Forms and Controls: How insert data to Worksheets and Workbooks, create function, perform arithmetic operation using VBA (practical exercises + homework)
Week15	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	• Microsoft Office for Beginners,by , M.L. Humphrey, 2020. • MICROSOFT WORD & POWERPOINT FOR BEGINNERS & POWER USERS 2021: The Concise Microsoft Word & PowerPoint A-Z Mastery Guide for All Users Paperback by Tech Demystified,2021. • Microsoft Excel 2019 VBA and Macros ,By Bill Jelen, Tracy Syrstad · 2019	Yes No No
Recommended Texts		
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.

Module Information			
Module Title	Workshops		Module Delivery
Module Type	Support		☐ Theory ☐ Lecture ☐ Lab ☐ Tutorial ■ Practical ☐ Seminar
Module Code	WORSH11		
ECTS Credit/year	4		
SWL/year	200		
Module level	1	Semester of Delivery	1, 2
Module Leader	Training and Workshops Center (Hadeel Fawzi Jasim)	College	
Module Leader Academic Title	Prof.	e-mail	twc@uotechnology.edu.iq 10532@uotechnology.edu.iq
Module Tutor		Module Leader's Qualification	Ph.D.
Peer Reviewer Name		e-mail	
Scientific Committee Approval Date	1/6/2023	e-mail	
		Version Number	1

Relation with other Modules			
Prerequisite Module	-	Semester	-
Co-requisite Module	-	Semester	-

Module Aims, Learning Outcomes and Inductive Contents	
Module Aims	1-Preparing applied engineers in the field of engineering sciences who

	are distinguished by a high level of knowledge and technological creativity, in line with the strict standards adopted globally in quality assurance and academic accreditation of the corresponding engineering programs, while adhering to the ethics of the engineering profession. 2. Enable the student to know and understand work systems, risks, and the factors surrounding them. 3. Enable the student to know and understand theoretical principles in handicrafts and measurements.
Module Learning Outcomes	1- To familiarize the student with the vocabulary of occupational safety and its importance in the field of work. 2- Acquisition of the student's manual operation skills, for example (Filings and Tinsmith workshops), and mechanical operation skills, for example (Turning). 3- Acquisition of the student's mechanical forming skills, for example (Casting and Blacksmithing). 4- The student acquires basic engineering skills such as Welding, Carpentry, and Electrical installations that serve him in the professional field. 5- Enabling the student to operate the various machines and devices in mechanical operations and formation. 6- Cooperative learning by working collectively.
Inductive Contents	1. Introducing the student to the basics of the art of turning and milling, types of cold working machines, the skill of dealing with them, choosing metals, operational tools, and methods of measurement and standardization 2. Introducing the student to the basics of the art of casting, hot forming, metal selection, method of working on casting furnaces and tools, and manufacturing casting molds 3. Familiarize students with the basics of cars and the systems they use, as well as maintenance, disassembly, and assembly processes. 4. Introducing students to the basics of household and industrial electrical appliances, the skill of using tools, and designing electrical circuits and control panels 5. Introducing the student to the basics of the art of plumbing, leveling surfaces, the skill of using tools, manufacturing and installing geometric shapes, and methods of measurement and standardization 6. Introducing the student to the basics of the art of blacksmithing, cold and hot forming of metals, the method of hardening them, and the skills of dealing with hand tools, forming machines, and heating furnaces

	7. Introducing the student to the basics of the art of filing and manual operation of metals with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and the methods of measurement and standardization 8. Introducing the student to the basics of the art of welding, the installation and assembly of metals, the types of welding machines, the skills of dealing with them, the types of welding, and the methods of measurement and standardization 9. Introducing the student to the basics of the art of carpentry and woodworking with the help of manual, electrical, and mechanical tools, the skills of dealing with them, and methods of measurement and standardization

Student Workload (SWL)			
Structured SWL (h/sem)	93	Structured SWL (h/w)	6.00
Unstructured SWL (h/sem)	7	Unstructured SWL (h/w)	0.46
Total SWL (h/sem)	100		
Structured SWL (h/year)	186	Structured SWL (h/w)	6.00
Unstructured SWL (h/year)	14	Unstructured SWL (h/w)	0.46
Total SWL (h/year)	200		

Module Evaluation					
		Time/No.	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative Assessment	Quizzes				
	Assignments				All
	Projects / Practice	Every 3 weeks	60%	Continuous	
	Report				
Summative Assessment	Midterm Exam				
	Exam	Every 3 weeks	40%	Continuous	All
Total assessment			100%		

Delivery Plan (Weekly Syllabus)	
	Materials Covered
Week 1	Welding workshop. -Occupational safety and its importance in welding workshops. -Introduction to the basics of welding. -Electric arc exercise. -An exercise for welding straight lines in a circular motion (helical).
Week 2	Welding workshop - An exercise for welding straight lines with a crescent movement and other welding methods -Construction welding exercise.
Week 3	Welding workshop. -Welding two pieces together. -Written exam in practical exercises. -
Week 4	Casting workshop -Occupational safety and its importance in plumbing workshops. -Introduction to the basics of metal casting. -Simple wooden disc exercise. Half workout.
Week 5	Casting workshop Wheel exercise. Pushing arm exercise.
Week 6	Casting workshop. -Complete pulley exercise. -Circular pole exercise. -Written exam in practical exercises.
Week 7	Blacksmith Workshop -Occupational safety and its importance in blacksmithing workshops. -Introduction to the Basics of Blacksmithing.

	- Barbell adjustment exercise. -Eight-star exercise. - Exercise forming the number eight in English. -Six formation exercises in English.
Week 8	Blacksmith Workshop -An exercise forming the number five in English. - Exercise forming the number nine in English. . -An exercise in forming an iron model in the form of a circle
Week 9	Blacksmith Workshop - S-shape exercise. - Air hammer hot barbell exercise. - Exercise to form a circle on an electric bending machine. - Exercising cold and hot ornament formation. . - A written exam in practical exercises
Week 10	Automotive Workshop -Occupational safety and its importance in car maintenance workshops. -An introduction to cars and their basic parts. -Parts of the engine, how it works, types of engines, and methods of classification.
Week 11	Automotive Workshop - Open the engine and identify the parts -Lubrication system -Cooling system.
Week 12	Automotive Workshop -The fuel system. -The old and new ignition circuits. -Written exam in practical exercises.
Week 13	Turning Workshop -Introduction to lathe machines and identifying their parts -Measuring tools and the use of an oven measuring instrument

	-Circular column lathing exercise on different diameters.
Week 14	Turning Workshop -Exercise using the pen (semicircular R) brackets. An exercise in making different angles using a pen (square + angle pen 55).
Week 15	Turning Workshop - Making shaft with different diameter exercises using (left and right pen) - Workout (Tube Connection). -Written exam in practical exercises.
Week 16	Fitting workshop Occupational safety and its importance in filing workshops -An introduction to the basics of filing -Pen holder exercise “preparation and preparation”
Week 17	Fitting workshop Pencil holder exercises finishing and assembling.
Week 18	Fitting workshop -The catcher exercise. - Clamping exercise. Written exam in practical exercises.
Week 19	Carpentry workshop -Occupational safety and its importance in carpentry workshops. - An introduction to carpentry, its types, types of wood, tools used, and preparation Preparing the tools used Face modification exercise using the reindeer
Week 20	Carpentry workshop Garden fence work and how to connect its parts, the eight-star exercise
Week 21	Carpentry workshop - Wood smoothing exercise using smoothing paper - Wood dyeing exercise in three stages Final smoothing and varnishing exercise

	Written exam in practical exercises
Week 22	The tinsmith workshop Occupational safety and its importance in plumbing workshops An introduction to plumbing, its tools, and plumbing stages Planning and marking exercise on metal plates
Week 23	The tinsmith workshop Geometric shapes Types of individuals and methods of individuals Geometric shape individuals exercise on a metal board
Week 24	The tinsmith workshop Cone members exercise - Exercise of cylinders with an oblique cut Roll forming operations Connection without the use of an intermediary Written exam in practical exercises
Week 25	Electric Workshop Occupational Safety and its importance in electrical workshops An introduction to the basics of electrical installations - Linking a simple circuit consisting of a lamp to the control of a single-way switch. Connect two lamps in series with one-way switch control. Connecting two lamps in parallel with the control of a single road switch. Connect two lights with one-way dual switch control.
Week 26	electric Workshop Connect a fluorescent lamp circuit to a one-way switch control Connecting an electric supply socket circuit to the control of a separate or combined one-way switch Written exam in practical exercises

Week 27	electric Workshop Occupational Safety and its importance in blacksmithing workshops Introduction to the basics of Blacksmithing - Barbell adjustment exercise Eight-star exercise - Exercise forming the number eight in English Exercise forming the number six in English
Week 28	supplementary training curriculum Welding workshop Plumbing workshop Blacksmith's workshop
Week 29	supplementary training curriculum - Automotive workshop - Turning workshop Fitting workshop
Week 30	supplementary training curriculum Carpentry workshop The plumbing workshop electric Workshop

Learning and Teaching Resources		
	Text	Available in the library
Required Texts	Workshop technology and measurements, Ahmed Salem Al-Sabbagh,	yes
Recommended Texts		
Websites		

Module Information

معلومات المادة الدراسية

Module Title	Engineering Mechanics and Strength of Material	Module Delivery
Module Type	Basic	☒ Theory ☐ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	EMSM114	
ECTS Credits	6	
SWL (hr/sem)	150	

Module Level	UGI	Semester of Delivery	1
Administering Department	PE	College	OGE
Module Leader	Ali Ati	e-mail	E-mail
Module Leader's Acad. Title	Asst. Professor	Module Leader's Qualification	Ph.D.
Module Tutor	NA	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	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 Aims أهداف المادة الدراسية	This module covers two main parts: •Fundamental principles, about the motion, velocity, newton's laws, statistic inertia, fluid inertia, sliding fraction, rolling fraction and help the student to solve and understand the problems. •Strength of material is the discipline of investigating the relationships that exist between the structures and properties of materials. Engineering material is designing or engineering the structure of a material to produce a predetermined set of properties. This part covers principles of stress and strain. Develops understanding of force, heat deformation, material properties, allowable strength, young modulus

	Poisson ratio. It also covers hook laws, shear stress, Moher circles, and the general strain energy equation.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- The program prepares students for research and development in many frontier areas of engineering, including such as newton's laws, statistic and dynamic mechanic. 2-All students study the core theoretical subjects of fluid mechanics, dynamics, supplemented by courses in mathematics. 3- The program can be tailored to a student's interests through electives in engineering, mechanic or other applied sciences. 4 The program learn students the fundamental concepts of stress and strain. 5- Explain the concepts of shear and bearing stress. 6- Learn the Allowable force and safety factor for design materials. 7- Analysis and draw the Mohr's circle with bending diagrams
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part I: fundamentals of Engineering Mechanics** principles, about the motion, velocity, newton's laws, statistic inertia, fluid inertia, sliding fraction, rolling fraction and help the student to solve and understand the problems. . (24 hrs) **Part II: Strength of material fundamentals** principles of stress and strain. Develops understanding of force, heat deformation, material properties, allowable strength, young modulus Poisson ratio. It also covers hook laws, shear stress, Moher circles, and the general strain energy equation. (28 hrs)

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in delivering this module is to Encourage students to ask and answer questions, as well as presenting many experimental work labs to increase students' knowledge.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	90	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week	Newton's laws
Week	Types of the Fractions
Week	Velocity, velocity and accelerations
Week	Plane curvilinear motion (x-y) coordinate
Week	Plane curvilinear motion (n-t) coordinate
Week	Plane curvilinear motion (r-θ) coordinate
Week	Curvilinear motion
Week	stress, strain, Relationship between stress and strain.
Week	Study the concept of Shear Stress, Bearing Stress and Shear Strain.
Week	Allowable working stress factor of safety and the Thermal Stress and Strain.
Week	Elastic Constants (young modulus, Poisson ratio, shear modulus and bulk modulus).
Week	Principle stress (maximum and minimum stress).
Week	Mohr's circle and Principal strain.
Week	Drawing the shear force and bending moment diagrams, Theory of shearing stress in beams.
Week	Study the Beams, types and subject loads, Theory of bending stress in beams with calculations

Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Tensile test
Week 2	Hardness test
Week 3	Impact test
Week 4	Particles size analysis
Week 5	Properties of engineering materials with regular shape test
Week 6	Properties of engineering materials with irregular shape test
Week 7	Study the passivity phenomenon test
Week 8	Torsion test
Week 9	Bending test
Week 10	Deflection of beam test
Week 11	Determination of moisture content
Week 12	Calculation of water formation test

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Engineering Mechanics: Statics & Dynamics 14th Edition Engineering Mechanics - Statics and Dynamics Book by A. Bedford and Wallace Fowler	
Recommended Texts	Hibbeler Dynamics Engineering Mechanics: Statics & Dynamics by Russell C. Hibbeler Philpot, Timothy A., and Jeffery S. Thomas. Mechanics of materials: an integrated learning system. John Wiley & Sons, 2020. Timoshenko, Stephen. History of strength of materials: with a brief account of the history of theory of elasticity and	

	theory of structures. Courier Corporation, 1983.	
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.

Module Information معلومات المادة الدراسية					
Module Title	General Geology I			**Module Delivery**	
Module Type	**Basic**			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	GEGE122				
ECTS Credits	**4**				
SWL (hr/sem)	**150**				
Module Level	UGI		**Semester of Delivery**	1	
Administering Department	PE		**College**	OGE	
Module Leader	Dr. Mayssaa Ali Al-Bidry		**e-mail**	mayssaa.a.abdwon @uotechnology.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	PHD	
Module Tutor	NA		**e-mail**	E-mail	
Peer Reviewer Name	Dr. Fadhil S. Kadhim		**e-mail**	150010@uotechnology.edu.iq	
Scientific Committee Approval Date	01/06/2023		**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 Aims أهداف المادة الدراسية	**1-Facilitate a better understanding of Earth rock formation, rocks types, process and factors affect on Earth crust.** **2-Provide students with the tools to interpret the minerals and rock types and fossil record.** **3-Laboratory exercises and field trips will highlight and enhance the concepts learned in the classroom.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**1-Identify various types of minerals and rocks and understand the geologic processes of their formation, structural deformation and the process of weathering and erosion.** **2-Describe the mechanisms that produced the earth's major continents, mountain ranges, ocean basins, plate tectonics and deformation of earth crust.** **3-Discuss geologic history in the context of understanding Earth systems and how they may change in the future.**
Indicative Contents المحتويات الإرشادية	**The most important skills required by the student are:** **1- Understanding the geological processes that formed the Earth and its layers and minerals.** **2 - The effects leading to the change of rock types as a result of the effects of all types of erosion and weathering.** **3- The basic structural influences that changed the shape of the earth's crust and their results in generating various types of folds and faults.** **4- Studying the basic factors of deposition situation of sedimentary rocks and knowing their geological ages.**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**The possibility of identifying the various types of minerals and rocks through which the student can evaluate the contents of the earth's crust and how oil accumilations are formed inside the earth and the mechanisms of their extraction through knowledge of the hardness and strength of these rocks, their depth and sedimentary age, geological structures sub-surface and the quality of oil reservoirs.**

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	90	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
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**	1	10% (10)	1-3	LO #1-3
	Assignments	1	10% (10)	4-6	LO # 1-3
	Projects /	1	10% (10)	7-9	LO # 1-3
	Report	1	10% (10)	10-12	LO # 1-3
Summative assessment	**Midterm Exam**	1 hr	10% (10)	1-7	LO # 1-3
	Final Exam	2hr	50% (50)	16	LO # 1-3
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Geology , types of geological sciences, Why Study Geology? Rocks and Fossils are important tools for geologists that tell a story of what Earth like in the past.
Week 2	Earth generation and Earth's Internal Structure , Crust, Mantel and Core. Define their physical and chemical properties , Why Does Oceanic Crust Form Ocean Basins and Continental Crust Form the Continents?
Week 3	Matter and Minerals, what are the minerals and how can they be formed? Minerals are the building blocks of rocks Earth's crust is made of rocks. Mineral Composition. Chemical bonding forming a compound as mineral. Rock-Forming Minerals the Silicates and non-Silicates.
Week 4	Silicate Mineral Structures, Environment of Formation, Bowen's Reaction Series, Physical Properties of Minerals.
Week 5	Types of Rocks . What Can Igneous Minerals/Rocks Tell Us? Origin of Igneous Rocks. How Do Igneous Rocks Form? How Does Magma Originate? Generating Magma from Solid Rock. Components of Magma.
Week 6	Origin of Magma Compositions, Origin of Andesitic Magmas Origin of Granitic Magmas, Classification of Igneous Rocks, Igneous Textures, Rate of Cooling, Mineral Compositions of Igneous Rocks

Week 7	Volcanoes and Other Igneous Activity, Not all Volcanic Eruptions are the Same, Factors Affecting Viscosity, Materials Extruded from Volcanoes, Anatomy of Volcanoes, Types of Volcanoes , Plutonic Igneous Activity, Classification of Plutons.
Week 8	Metamorphic Rocks, What Can Metamorphic Minerals and Rocks Tell Us? Metamorphism, Agents of Metamorphism, Classification of Metamorphic Rocks, How Metamorphism Alters Rocks, Types of Foliation and Foliated Metamorphic Rocks, Metamorphic Environments
Week 9	Sedimentary Rocks, Turning Sediment into Rock, Diagenesis, Types of Sedimentary Rocks, Classification of Sedimentary Rocks, Characteristics of Detrital Sedimentary Rocks,
Week 10	Grain Size , What Does Grain Size Tell Us? Sorting, What Does the Degree of Sorting Tell Us? Chemical and Biochemical Sedimentary Rocks, Inorganic Processes including Evaporation, Hydrothermal, Chemical Activity and Organic Processes of Biochemical Origin.
Week 11	Types of Chemical and Biochemical Sedimentary Rocks. Carbonate Rocks, Characteristics of the Environment of Marine Carbonate Formation. Sedimentary Environments of Deposition, Depositional Environments.
Week 12	Weathering and Erosion, Mechanical & Chemical Weathering, Products of Weathering, Erosion, types of Mechanical Weathering, types of Chemical Weathering, Factors Influencing Rates of Weathering
Week 13	Crustal deformation and Geologic Structures, Deformation, Deformational Stress, How Do Rocks Deform? Crustal Structures, Anatomy of a Fold, Common Types of Folds,
Week 14	Types of Faults, Summary of Fault Types, Dip-Slip Faults and Strike-Slip Faults, Types of Strike-Slip Faults , Fault-Associated Folding
Week 15	Geological time , The Geologic Time Scale, Methods of Dating Rocks, Relative Dating: Principles of Geology, Law of Original Horizontality, Principle of Superposition, Principle of Lateral Continuity and Principles of Unconformities.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	**Introduction and Crystallography.**
Week 2	**Types of crystal system and their properties.**
Week 3	**Types of minerals , silicates and non silicate and study their physical properties.**
Week 4	**Igneous rocks , their types and composition and textures.**
Week 5	**Metamorphic rocks , their types, textures, and types of metamorphism.**
Week 6	**Sedimentary rocks , their types and classification, detrital sedimentary rocks.**
Week 7	**Chemical sedimentary rocks and their types.**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**1- Essentials of Geology (Lutgens and Tarbuck, 10th Edition).** **2- Sedimentary Basins Evolution, Facies, and Sediment Budget , By Gerhard Einsele , Springer Science & Business Media, Jul 27, 2000 - Science - 792 pages.** **3- 5- Zumberge's Laboratory Manual for Physical Geology (Robert Rutford and James Carter, 14th Edition.)**	Not sure
Recommended Texts	**The Concise Geologic Time Scale , By james G. Ogg, Gabi Ogg , Felix M. Gradstein , Cambridge University Press, Sep 4, 2008 - Science - 177 pages.**	Not sure
Websites	**The Encyclopedia of Field and General Geology , Charles W. Finkl , Springer Science & Business Media, Apr 30, 1988 - Science 1912 pages.**	

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.