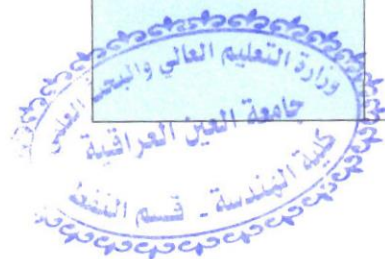


Module Information			
معلومات المادة الدراسية			
Module Title	Casing Design and Cementing		Module Delivery
Module Type	Core	☒ Theory ☒ Lecture ☒ Tutorial ☒ Practical ☐ Seminar	
Module Code	PE325		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	3		
Administering Department	Petroleum Engineering	College	Engineering college
Module Leader	Dr. Mortda DGAM	e-mail	
Module Leader's Acad. Title	Doctor	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Mohammed Y. Hweree	e-mail	Mohammed.yaseen@alayen.edu.iq
Peer Reviewer Name		e-mail	E-mail
Scientific Committee Approval Date		Version Number	1.0

Relation with other Modules			
Prerequisite module	PE 215, PE 222	Semester	Third
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents	
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Module Objectives	Overview of casing design, functions of casing, types of casing strings, classification of casing, and liners, Parameters of casing design, selection of casing and bit types, Burst, Collapse and axial load calculations, ranges of typical API design factors, Mud window and selecting casing setting depths, graphical design of casing, Casing String Accessories, Main reasons for cementing wells,
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	classification and properties of cements, Primary and secondary cementing steps, classification of cementing operations, Cement types and additives, and cementing equipment, Calculating cementing properties including cement density and yield Week, Hydraulics of primary cementing operations		
Module Learning Outcomes	Knowledge	A2	A2.1 Define modern knowledge in Casing operation, and cement. A2.2 recognize the classify the type of casing and oil well cement. A2.3 apply modern techniques to casing design. A2.4 analyze the results and determined the problem solation.
		A3	A3.1. determined different casing stress in hole. A3.2. Perform standard calculation and design all well casing.
	Skills	B1	B1.1 Function efficiently as an individual. B1.2 Function as a member of multidisciplinary and multicultural teams.
		B3	B3.1 Acquire and apply new knowledge. B3.2 Practice the strategies of searching for information in life long self-learning
		C2	C2.1 Respecting the opinions of others and acknowledging societal diversity
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: - Overview of casing design, functions of casing, types of casing strings, classification of casing, and liners, (6 h) - Parameters of casing design, selection of casing and bit types,(6 h). - Burst, Collapse and axial load calculations, ranges of typical API design factors, (6 h). - Mud window and selecting casing setting depths, graphical design of casing,(3 h). - Casing String Accessories, (3 h). - Main reasons for cementing wells, classification and properties of cements, (3 h). - Primary and secondary cementing steps, classification of cementing operations, (3 h). - Cement types and additives, and cementing equipment,(3 h). - Calculating cementing properties including cement density and yield (6 h). - Hydraulics of primary cementing operations (6 h).		
	Learning and Teaching Strategies		

Strategies	✓ Presentations. ✓ Discussions. ✓ Tutorial and graphics. ✓ Problem solving. ✓ Brain storming. ✓ Research and reporting. ✓ Problem Solving. ✓ Report & discussion assessment.
	The overall assessment for this course is as follows: Annual pursuit of 50 points from the total mark, which includes assignments, oral examinations and quarterly in addition to lab. *50 marks for the final exam

Student Workload (SWL)			
Structured SWL (h/sem)	63	Structured SWL (h/w)	4.2
Unstructured SWL (h/sem)	62	Unstructured SWL (h/w)	4

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	3	10% (15)	5,10	A2,A3
	Assignments	3	10% (15)	2 and 12	A2, A3, C2
	Report	1	10% (10)	13	A3
	Midterm Exam	2 hr	10% (10)	8	A2,A3,B1,C2
Total SWL (h/sem)		125			
Summative assessment	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)		
	Material Covered	LOs
Week 1,2	Overview of casing design, functions of casing, types of casing strings, classification of casing, and liners	A2 , C2
Week 3,4	Parameters of casing design, selection of casing and bit types	A2, A3,B1, B3, C2
Week 5,6	Burst, Collapse and axial load calculations,	A2, A3,B1, B3, C2

	ranges of typical API design factors	
Week 7	Mud window and selecting casing setting depths, graphical design of casing	A2, A3, B1, B3, C2
Week 8	Casing String Accessories	A2, B1, B3, C2
Week 9	Main reasons for cementing wells, classification and properties of cements	A2, B1, B3, C2
Week 10	Primary and secondary cementing steps, classification of cementing operations	A2, B1, B3, C2
Week 11	Cement types and additives, and cementing equipment	A2, B1, B3, C2
Week 12,13	Calculating cementing properties including cement density and yield	A2, B1, B3, C2
Week 14,15	Hydraulics of primary cementing operations	A2, B1, B3, C2

Learning and Teaching Resources

	Text	Available in the Library?
Required Texts	Text book "Drilling Engineering I "	Yes
Recommended Texts	1- drilling mud technology 2- Halliburton-Petroleum-Well Construction.	Yes
Websites	https://eng.alayen.edu.iq//colleges/e/42	

Grading Scheme

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