

University of Mosul جامعة الموصل



Bachelor's degree (B.Sc.) – petroleum Reservoir Engineering

بكالوريوس – علوم هندسة المكامن النفطية



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1. Mission & Vision Statement

Vision Statement

The department aspires to graduate qualified petroleum reservoir engineers who will be contribute to the achievement of various engineering projects in Iraq.

Mission Statement

For many years Nineveh govern ate has been among the top three governorate in the production of crude oil. Thus, it has been important that Mosul University , maintain a strong nationally recognized department of petroleum reservoir engineering designed to provide undergraduate education of high quality to meet the current and future needs for engineers, managers and researchers associated with the petroleum producing industry; to serve as a regional center for graduate education, research, and technology transfer concerning the safe and efficient utilization of subsurface natural resources by processes involving well systems; and to provide continuing education programs designed to meet the training needs of professional engineers currently associated with the petroleum producing industry.

2. Program Specification

Programme code:	PRE	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

Petroleum reservoir engineers design and develop methods for extracting oil and gas from deposits below the Earth's surface. Petroleum engineers generally work in offices or at drilling and well sites. Travel is frequently required to visit these sites or to meet with other engineers, oilfield workers, and customers.

Level1,2 : Students in these two levels study the basic requirements of engineering science which will be useful in petroleum reservoir program. All program content are non-elective, at the end of these two levels, the student is qualified to study oil reservoir engineering program.

At 3,4 level the students will be professionals to understand and effectively utilize the workflow concepts now prevailing in the oil industry, and prepares them fully for work in multidisciplinary teams. The program provide a 1,2,3 and 4 levels conversion from other engineering and sciencebased foundations into the specialties of petroleum engineering, and is designed for both those with industrial experience and recent graduates

3. Program Objectives

- 1- Teach and train students with the most modern theoretical and practical curricula and resources from approved, reputable universities around the globe in order to prepare engineers for the energy industry using the most up-to-date techniques.
- 2- Provide students with the ability to comprehend the most advanced terminology used in the oil industry sector and the opportunity to acquire skills that match the modern technology to be utilized and employed in the minor scientific specialization.
- 3- Providing scientific and engineering support and consultations to all departments, institutions, and entities working in the oil field, as well as contributing to the resolution of various related scientific problems and issues and adopting them in graduation and research projects to foster a spirit of innovation among students and teachers for the benefit of the nation and society.
- 4- Preparing innovative postgraduates capable of preparing and establishing scientific frameworks in the petroleum and mining industries in order to directly meet the requirements of society. This also addresses future challenges by investing in the exploratory capabilities of national and foreign companies through training, testing, and supervision in order to serve the national oil industry by providing qualified staff to the national oil companies (Oil Exploration Company, North Oil Company, Missan Oil Company, South Oil Company, and Nineveh Oil Authority).

Scientifically and technically in this field, as well as the mineral exploration industry. An integrated program of modern and focused curricula, comparable to the best available in universities and international scientific research centers, was prepared for this purpose by a committee of professors specializing in this field, after a six-month review of everything published on the Internet and the members' personal and arduous efforts.

4. Student Learning Outcomes

The Petroleum Reservoir Engineering Department at the University of Mosul relies on the reference framework issued by the Iraqi Council for Accreditation of Engineering Education (ICAEE) as well as the standards of the Accreditation Board for Engineering and Technology (ABET) in formulating and achieving its Student Learning Outcomes.

1. An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science and mathematics.
2. An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
3. An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
4. An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
5. An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments taking into account the consequences in worldwide financial, ecological and societal considerations.
6. An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble and apply it properly.
7. An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty

5. Academic Staff

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6. Credits, Grading and GPA

Credits

(Name) University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

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:				
Number 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.				

Calculation of the Cumulative Grade Point Average (CGPA)

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [(1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots] / 240$$

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE 111	Geology for engineers I	93	82	7.00	S	
PRE 112	Engineering mechanics I	63	87	6.00	S	
PRE 113	Mathematics I	78	72	6.00	B	
UOM102	English I (Reading & Writing)	33	17	2.00	B	
PRE 114	Engineering Drawing	93	82	7.00	S	
UOM102	Human Rights & Democracy	31	19	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE123	Mathematics II	71	54	5.00	B	
PRE124	Engineering drawing using AUTOCAD	93	32	5.00	S	
PRE125	Principals of Petroleum Engineering	48	77	5.00	C	
UOM101	Arabic	33	17	2.00	B	
UOM103	Computer	33	42	3.00	B	
PRE121	Geology for engineers II	93	57	6.00	S	
PRE122	Engineering mechanics II	80	20	4	S	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE211	Structural Geology	41	59	4.00	C	
PRE212	Fundamentals of Petroleum Engineering	78	47	5.00	C	
PRE213	Petroleum Properties	63	37	4.00	C	
PRE214	Mathematics III	48	52	4.00	B	
PRE215	Thermodynamics	63	37	4.00	C	
PRE216	Fluid Mechanics	63	37	4.00	C	
UOM2032	Computer 2	33	42	3.00	B	
UOM2022	English 2	33	17	2.00	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE221	Petroleum Geology	93	57	6.00	C	
PRE222	Strength of Materials	63	37	4.00	C	
PRE223	Mathematics IV	48	77	5.00	C	
PRE225	Occupational Safety and Health	41	59	4.00	B	
UOM2012	Arabic 2	33	17	2.00	B	
UOM2050	Crimes of the Baath regime in Iraq	33	17	2.00	B	
PRE224	Petrophysical Rocks Properties	93	82	7.00	C	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE311	Applied reservoir engineering 1	63	62	5.00	C	
PRE312	Drilling Fluid & Hydraulics	63	62	5.00	C	

PRE313	Production Engineering	48	52	4.00	C	
PRE314	Engineering Analytics	63	37	4.00	C	
PRE315	Geophysics	48	52	4.00	C	
PRE316	Well Logging and Formation Evaluation	63	62	5.00	C	
PRE317	Gas Technology	48	27	3.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE321	Applied reservoir engineering II	63	62	5.00	C	
PRE322	Rock Mechanics for Petroleum Engineers	48	52	4.00	C	
PRE323	Casing Design and Cementing	63	62	5.00	C	
PRE324	Petroleum Economics	48	52	4.00	C	
PRE325	Applied Mathematics and Geostatistics	63	62	5.00	C	
PRE326	Nodal Analysis	48	52	4.00	C	
PRE327	Artificial Intelligence	48	27	3.00	C	

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