

**Ministry of Higher Education and Scientific Research  
Scientific Supervision and Scientific Evaluation Apparatus  
Directorate of Quality Assurance and Academic Accreditation  
Accreditation Department**



**Academic Program Description  
Department of Petroleum Engineering  
College of Engineering  
Al-Farabi University**

**2025-2024**

## Academic Program Description

University Name: Al-Farabi University

Faculty/Institute: College of Engineering

Scientific Department: Petroleum Engineering

Academic or Professional Program Name: Bachelor of Petroleum Engineering

Final Certificate Name: Bachelor's degree in petroleum engineering

Academic System: " Semester

Description Preparation Date: 2/ 7 /2025

File Completion Date: 16/7 / 2025

Signature:

Head of Department Name:

Date: - -2025

*[Handwritten signature]*

Signature:

Scientific Associate Name:

16/7/2025

Date: - -2025

أ.د. مازن سمير علي

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

July 17th, 2025

Signature:

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Approval of the Dean

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### 1. Program Vision

Petroleum Engineering Department looks Forward to be a local and regional leader in preparing competent and innovative petroleum engineers who are effective contributors to the development of the field of oil exploration and extraction in the fields.

### 2. Program Mission

**Providing highly qualified education and an academic environment, as well as linking the practical aspect of the study with field work in oil companies, thus graduating batches of petroleum engineers with high qualifications distinguished by respect for the work environment. Our graduates are prepared to face obstacles and advance to become competitors in the oil field.**

### 3. Program Objectives

- **Modifying the curriculum of the under graduate study to be in continuous attachment with the latest development of the petroleum technology.**
- **Providing highly efficient practical laboratories equipped with the latest technology**
- **Providing a suitable academic environment, such as providing large sports fields and psychological counseling centers for students.**
- **Providing a link between academic studies and the oil sector through summer training with major oil companies and the Iraqi Engineers Syndicate.**
- **Develop scientific research in the Petroleum Engineering Department to keep pace with global developments in the field of petroleum engineering**
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### 4. Program Accreditation

No

### 5. Other External Influences

We are twinned with the University of Baghdad – College of Engineering,  
Department of petroleum Engineering

## 6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	–	–		<b>Basic</b>
College Requirements	<b>6</b>	<b>14</b>		<b>Basic</b>
Department Requirements	<b>30</b>	<b>103</b>		Basic
Summer Training	The duration of the summer training is 30 days during the summer vacation in the month of July or August			
Other				–

\* This can include notes whether the course is basic or optional.

## 7. Program Description

Credit hours		Course name	Course code	year / Level
practical	theoretical			
2	3	General Geology	PE100	First Semester / First
	4	Mathematics I	GE102	
2	2	Computer Programming I	GE104	
3	1	Engineering Drawing and Descriptive Geometry	GE106	
	3	Statics and Dynamics	GE108	

	1	English Language I	GE110	
	2	Physics	GE114	
2	2	Analytical Chemistry	GE101	
	2	Arabic	GE112	
2	2	Electrical Technology/ secod Semester	GE103	
2	2	Structural and Petroleum Geology	PE200	First semester/. Second
	4	Mathematics II	GE202	
2	1	Computer Programming II	GE204	
	3	Fundamentals of Petroleum Engineering	PE206	
2	4	Fluid Mechanics	GE208	
	2	English Language II	GE210	
2	2	Petroleum Properties	PE201	
	4	Eng. Thermodynamics	PE203	
	2	Human Rights	GE212	
	4	Strength of Materials	GE203	second semester/. Second
2	4	Petroleum Reservoir Eng. I	PE300	Third
2	4	Petroleum Drilling Eng. I	PE302	
	3	Petroleum Production	PE304	

		Eng. I		
	4	Well Logging	PE306	
	2	Petroleum Engineering Economics	PE308	
	4	Engineering Mathematics	GE302	
	1	Technical English	GE310	
	3	Geophysics	PE301	
Third stage/ second semester				
	3	Engineering Statistics	GE303	
	5	Petroleum Reservoir Eng. II	PE400	Fourth
	5	Petroleum Drilling Eng. II	PE402	
	5	Petroleum Production Eng. II	PE404	
	3	Secondary Oil Recovery	PE406	
2	2	Numerical Methods and Reservoir Simulation	PE408	
	2	Engineering Project	PE410	
	3	Gas Technology	PE401	
	3	Integrated Reservoir Management	PE405	
	1	English Language IV		
Fourth stage/ second semester				
	3	Optimization	PE403	

<b>Knowledge</b>	
<b>1- Acquire the ability to deal with -2 work problems and challenges through the practical and theoretical application of engineering principles and analytical mathematics.</b>	<b>3. The possibility of employing knowledge of mathematics and engineering to find solutions in field work in oil fields.</b>
<b>The possibility of employing knowledge of mathematics and engineering to find solutions in field work in oil fields.</b>	<b>4. Assume responsibility for managing fields and adhere to professional ethics in matters of managing the work environment and the proper application of work ethics</b>
<b>6. Understanding the impact of environmental factors and the work environment on field operations.</b>	
<b>7. Understanding drilling, production and field management techniques in line with field work requirements</b>	
<b>Skills</b>	
Ability to work in a team spirit, commit to achieving goals, and implement field work improvement plans within the specified deadlines.	
1. Conduct basic and applied engineering and scientific research to develop new, safer, and more economical methods for extracting petroleum and natural gas from rock formations.	
3. Apply scientific and engineering principles to formulate solutions to petroleum and natural gas engineering problems.	
-4Use modern engineering techniques, skills, and tools in the field of petroleum and natural gas.	
<b>Ethics</b>	
<b>1. The ability to recognize ethical and professional responsibilities in engineering situations and making informed judgments, which must take into account the impact of engineering solutions in global, economic, and social contexts</b>	<b>3.Recognize the need to protect and preserve the environment as much as possible by preventing pollution during exploration, production, and development operations</b>

**2. Recognize the importance of teamwork and sharing experiences and information to achieve the best work results.**

## **9. Teaching and Learning Strategies**

**1 - Arrange effective groups during educational lectures and in laboratories to familiarize students with the team atmosphere and teach them how to cooperate with each other to achieve the best results.**

**2- Hold lively classroom discussions**

**3- Student presentation strategy and presentation of ideas**

## **10. Evaluation methods**

**1- Daily and monthly exams**

**2. Oral discussion**

**3. Forming creative groups and holding a competition between them by presenting specialized topics.**

**4.-4- Preparing scientific reports**

**5. Preparing projects and reports**

## **11. Faculty**

### **Faculty Members**

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
<b>Prof. Dr. Ali Mohsin Salih</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>			<b>Staff</b>	
<b>Prof. Dr. Zuhair Dawood Ahmed</b>	<b>Geology</b>	<b>Geophysics</b>			<b>Staff</b>	
<b>Prof. Dr. Muzahim Aziz Basi</b>	<b>Geology</b>	<b>Sedimentary Rocks</b>			<b>Staff</b>	
<b>Assist Prof. Adnan Abass Alwan</b>	<b>Mechanical engineering</b>	<b>Machines and cars</b>			<b>Staff</b>	
<b>Assist prof. Amel Habib Asi</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>				<b>Lecturer</b>



<b>Dr. Shamil Ibrahim Mohammed</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>			<b>Staff</b>	
<b>Dr. Ahmed Jubair Mahmood</b>	<b>Petroleum Engineering</b>	<b>Reservoir engineering</b>			<b>Staff</b>	
<b>Dr. Shalal Nief Mahdi</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>			<b>Staff</b>	
<b>Dr. Layla Sideeq Mohammed</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>			<b>Staff</b>	
<b>Dr. Haider Abood Salih</b>	<b>Computer science</b>	<b>Information security</b>				<b>Lecturer</b>
<b>Dr. Ahmed Karim Hassan</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>				<b>Lecturer</b>
<b>Dr. Abdullah Jala Mohammed</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>				<b>Lecturer</b>
<b>Assist. Mohammed Sadiq Adnan</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>				<b>Lecturer</b>
<b>Assist Lect. Mohammed Qassab Shamikh</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>			<b>Staff</b>	
<b>Assist Lect. Jaafar Kadhimi Ali</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>				<b>Lecturer</b>
<b>Assist Lect. Masara Salam Hameed</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>				<b>Lecturer</b>
<b>Assist Lect. Hussain Hussam Abd Al Muhi</b>	<b>Chemical bio engineering</b>	<b>Chemical bio engineering</b>				<b>Lecturer</b>
<b>Assist Lect. Mohammed Qasim Abd Talib</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>			<b>Staff</b>	
<b>Assist Lect. Yasir Bashir Mohammed</b>	<b>Geology</b>	<b>Geochemistry</b>			<b>Staff</b>	
<b>Assist Lect. Hiba Ali Hassan</b>	<b>Petroleum Engineering</b>	<b>Petroleum Reservoir engineering</b>			<b>Staff</b>	

<b>Assist Lect. Abd Al Aziz Basim Abd AlHussian</b>	<b>Chemical engineering</b>	<b>Nano technology</b>			<b>Staff</b>	
<b>Assist Lect. Elaf Yhya fadhil</b>	<b>Petroleum Engineering</b>	<b>Petroleum drilling engineering</b>			<b>Staff</b>	
<b>Assist Lect. Amani Adil Abass</b>	<b>Media</b>	<b>Journalism</b>				<b>Lecturer</b>

## **Professional Development**

### **Mentoring new faculty members**

The program is committed to creating an atmosphere of cooperation and academic and administrative integration for new members through the following:

1- Holding frequent meetings with them by the department head to familiarize them with the foundations and systems of the program and the academic curricula.

2. Their apprehension about how to deal with students and how to convey information and apply it practically.

-3- Guide them to the importance of laboratory work by introducing them to the department's laboratories and how to link theoretical information with the practical side.

### **Professional development of faculty members**

**1- Continuous follow-up by holding seminars to enhance the progress of the academic process by explaining how to use modern educational methods and academic communication with students.**

**2- Follow up on the academic development of faculty members and stimulate the research aspect by holding seminars on the research publishing process and increasing research citations.**

**3- Follow up on the academic evaluation of the teaching staff annually and address any weaknesses, if any**

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<b>12. Acceptance Criterion</b>
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academic qualifications that qualify applicants to apply to study in the Petroleum Engineering Department:
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1. Graduates of the applied preparatory branch
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2. Graduates of the scientific branch from previous years
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3. Graduates of a petroleum institute or any institute after the preparatory stage, provided that the applicant is a graduate of preparatory studies/the scientific branch. Admission to the department is based on the average of the sixth preparatory year, not on the level of post-preparatory studies.
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<b>13. The most important sources of information about the program</b>
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<a href="https://alfarabiuc.edu.iq/ar/petroleum-engineering/">https://alfarabiuc.edu.iq/ar/petroleum-engineering/</a>
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#### **14. Program Development Plan**

1-Improving students' employment opportunities and planning for their future career.

2-Updating curricula to match the labor market.

3-Equipping laboratories with the latest equipment to keep pace with developments in the oil sector at the global level



[illegible]



**(Stages 1 and 2 currently under the Bologna system) Appendix 3**

<b>7.Program Description</b>				
<b>Credit hours</b>		<b>Course name</b>	<b>Course code</b>	<b>year / Level</b>
<b>practical</b>	<b>theoretical</b>			
<b>2</b>	3	General Geology I	PENG116	<b>First/ first semester</b>
	3	Engineering Mechanics	PENG115	
	2	Mathematics I	CENG114	
<b>2</b>		Workshop Technology	CENG113	
<b>2</b>	1	Computer Science I	CENG112	
	2	English Language I	GE111	
	2	Democracy and Human Rights	GE110	
<b>2</b>	3	General Geology II	PENG126	<b>First/ second semester</b>
	3	Physics	CENG125	
<b>2</b>	2	Chemistry	PENG124	
	2	Mathematics II	CENG123	
<b>3</b>	1	Engineering Drawing	CENG122	
	2	Engineering Practices	PENG121	
	2	Arabic Language	GE120	
<b>2</b>	3	Structural Geology	PENG216	<b>Second/ first semester</b>
	2	Fundamentals of Petroleum Engineering	PENG215	
<b>2</b>	2	Petroleum Properties	PENG214	



	2	Mathematics III	CENG213
2	1	Computer Science II	CENG212
	2	Arabic LanguageII	GE211
	3	Thermodynamics	PE210
Second/ second semester			
2	3	Petroleum Geology	PENG226
	2	Fluid Mechanics	PENG225
2	2	Strength of Materials	PENG224
	2	Mathematics IV	CENG223
2	2	Petrophysical Rock Properties	PENG222
	2	English Language II	GE221
	2	Baath Regime Crimes in Iraq	GE220