

## Academic Program Description Form

**University Name:** University of Warith AL-Anbiya

**Faculty/Institute:** College of Engineering

**Scientific Department:** Oil And Gas Department

**Academic or Professional Program Name:** Bachelor of Science degree (B.Sc.) in Oil and Gas Engineering

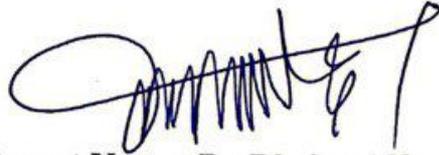
**Final Certificate Name:** Bachelor of Science degree (B.Sc.) in Oil and Gas Engineering

**Academic Degree System:** Bologna Process

**Description Preparation Date:** 2024/3/20

**File Completion Date:** 2024/3/20

**Signature:**

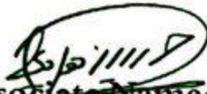


**Head of Department Name:** Dr. Dheiaa Alfarge

**Date:**

23/3/2024

**Signature:**



**Scientific Associate Name:**

أ.م.د. حسين هادي حسين

عميد كلية الهندسة

**Date:**

23/3/2024

**The file is checked by:**

Ast. Lect. Walaa. Nasser Abbas

**Department of Quality Assurance and University Performance**

**Director of the Quality Assurance and University Performance Department:**

**Date:** 23/3/2024

**Signature:**



**Approval of the Dean**

أ.م.د. حسين هادي حسين

عميد كلية الهندسة

23/3/2024

## 1. Program Vision

The gas and petroleum engineering department is the main source for preparing qualified graduates to develop the oil and gas industries in Iraq. The Gas and petroleum engineering department seeks to achieve leadership and excellence in its field of specialization locally and regionally.

## 2. Program Mission

The University of Warith AL-Anbiya is committed to:

Graduate numbers of applied engineers and scientific research cadre efficient and unique level of knowledge and technological innovation to achieve quality assurance and academic accreditation in accordance with the discreet standards universally adopted in engineering and scientific curriculum with a commitment to ethics engineering and scientific.

The department of Oil and Gas Engineering is committed to:

Upgrading the theoretical and applied educational concepts for gas and petroleum graduates to keep pace with the global petroleum revolution through the development of scientific research fields and educational means to develop the capabilities of graduates and their active participation in building the gas and petroleum sector in Iraq.

## 3. Program Objectives

1. To provide a comprehensive education in biology that stresses scientific reasoning and problem solving across the spectrum of disciplines within biology

2. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of biology
3. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
4. To provide thorough training in written and oral communication of scientific information
5. To enrich students with opportunities for alternative education in the area of biology through undergraduate research, internships, and study-abroad

#### 4. Program Accreditation

nothing

#### 5. Other external influences

nothing

#### 6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	6	17		Basic course
College Requirements	18	87		Basic course
Department Requirements	27	136		Basic course
Summer Training				
Other				

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

## 7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
2024-2023/One	UOW111	English Language	2	
2024-2023/One	OGE112	Principle to Petroleum Engineering	4	
2024-2023/One	ENG113	Calculus I	5	
2024-2023/One	ENG114	Engineering Mechanics and Strength of Material	4	2
2024-2023/One	UOW115	Computer Programming I	2	2
2024-2023/One	ENG116	Workshops I		6
2024-2023/One	OGE117	General Geology I	2	2
2024-2023/One	UOW121	Chemistry	4	2
2024-2023/One	OGE122	General Geology II	2	2
2024-2023/One	ENG123	Calculus II	3	
2024-2023/One	ENG124	Engineering Practices	2	
2024-2023/One	ENG125	Engineering Ethics	2	
2024-2023/One	ENG116	Workshops II	0	6
2024-2023/One	UOW126	Rights and Human Democracy	2	
2024-2023/Two	UOW211	Academic English writing	2	
2024-2023/ Two	ENG212	Ordinary differential equations	3	
2024-2023/ Two	ENG213	Fluid Mechanic I	3	
2024-2023/ Two	ENG214	Computer Programming II	2	2
2024-2023/ Two	OGE215	Structural geology	2	2
2024-2023/ Two	ENG216	Statistics and Optimization	3	
2024-2023/ Two	UOW226	Crimes of the Baath regime in Iraq	2	
2024-2023/ Two	OGE221	Petroleum Geology	3	
2024-2023/ Two	OGE222	Properties and transportation of crude oil and gas	3	2
2024-2023/ Two	ENG223	Fluid Mechanic II	3	2

2024–2023/ Two	OGE224	Petrophysics of Reservoir Engineering	3	2
2024–2023/ Two	ENG225	Physics and Thermodynamic	4	
2024–2023/ Two	ENG226	Partial differential equations	3	
2024–2023/ Three	OGE311	Drilling Engineering I	3	2
2024–2023/ Three	OGE312	Well Logging and Formation Evaluation I	3	2
2024–2023/ Three	OGE313	Production Engineering I	3	
2024–2023/ Three	OGE314	Reservoir Engineering I (Reservoir Fluids)	3	2
2024–2023/ Three	OGE315	Geophysics and Rock Mechanics	4	
2024–2023/ Three	ENG316	Numerical analysis	4	
2024–2023/ Three	OGE321	Drilling Engineering II (Casing design and Cementing)	3	2
2024–2023/ Three	OGE322	Well Logging and Formation Evaluation II	3	2
2024–2023/ Three	OGE323	Production Engineering II	3	
2024–2023/ Three	OGE324	Reservoir Engineering II (Gas Reservoir)	3	
2024–2023/ Three	ENG325	Health, Safety, and Environmental	2	
2024–2023/ Three	OGE326	Risk analysis and Petroleum Economics	3	
2024–2023/ Four	OGE411	Petroleum reservoirs engineering	3	
2024–2023/ Four	OGE412	Well Control	3	
2024–2023/ Four	OGE413	Well Testing	3	
2024–2023/ Four	OGE414	Natural Gas Engineering	2	
2024–2023/ Four	OGE415	Integrated Reservoir Management I	3	
2024–2023/ Four	ENG416	Engineering project	2	

2024–2023/ Four	OGE421	Directional drilling and Well Design	3	2
2024–2023/ Four	OGE422	Workover and Well Stimulation	3	
2024–2023/ Four	OGE423	Improved Oil Recovery	3	
2024–2023/ Four	OGE424	Reservoir Simulation	3	2
2024–2023/ Four	OGE425	Integrated Reservoir Management II	3	
2024–2023/ Four	ENG416	Engineering project	2	

## 8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Graduates should demonstrate a comprehensive understanding of the fundamental principles and concepts of petroleum engineering, including reservoir engineering, drilling and production operations, well design, fluid mechanics, and geology.
Skills	
Learning Outcomes 2	Graduates should be able to apply critical thinking and problem-solving skills to analyze complex engineering problems in the petroleum industry. This includes the ability to design and optimize oil and gas extraction processes, evaluate reservoir performance, and make informed decisions regarding drilling and production operations.
Learning Outcomes 3	Graduates should be proficient in conducting laboratory experiments and fieldwork related to petroleum engineering. This includes data collection, analysis, and 5 interpretation techniques, as well as hands-on experience with industry-standard equipment and technologies
Ethics	
Learning Outcomes 4	Graduates should have an understanding of ethical responsibilities and environmental considerations in petroleum engineering practice. This includes the ability to integrate sustainability principles into decision-making processes and promote responsible resource management.

## 9. Teaching and Learning Strategies

The department strives to provide a comprehensive and rigorous education to students pursuing petroleum engineering. It aims to equip them with the necessary knowledge and skills to excel in the field. Research and

**Development:** The department promotes cutting-edge research in petroleum engineering, focusing on innovative technologies, reservoir characterization, drilling techniques, production optimization, and environmental sustainability. It aims to contribute to the advancement of the industry through valuable research outcomes. **Industry Collaboration:** The department seeks to establish strong ties with the petroleum industry, fostering collaboration and partnerships. It aims to facilitate knowledge transfer, internships, and industry-sponsored projects to ensure students' exposure to real-world challenges and opportunities.

**Professional Development:** The department aims to nurture students' professional growth by encouraging participation in professional societies, conferences, and workshops. It provides guidance and support for students to pursue certifications and licensure, fostering their career readiness. **Environmental Responsibility:** Recognizing the importance of environmental stewardship, the department emphasizes sustainable practices in petroleum engineering. It aims to educate students about minimizing environmental impact, promoting energy efficiency, and exploring alternative energy sources.

**Diversity and Inclusion:** The department values diversity and aims to create an inclusive environment that welcomes individuals from diverse backgrounds. It promotes equal opportunities and encourages underrepresented groups to pursue petroleum engineering, fostering a diverse and vibrant community.

## 10. Evaluation methods

- Quizzes
- Assignments
- Projects
- Report

## 11. Faculty

### Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Ph.D.	Petroleum Engineering	Enhanced Oil Recovery and Reservoir Simulation			1	1
Ph.D.	Chemical Engineering	Technology of minerals oils			1	
Ph.D.	Mechanical Engineering					1
M.SC	Petroleum Engineering	Reservoir and Production engineering			1	
M.SC	Information Technology	Information networks			1	

## 12. Acceptance Criterion

**A– Conditions for admission to the college:**

**B– Approval of admission conditions for students in accordance with instructions issued by the Ministry of Higher Education and Scientific Research (central admission)**

**T– He must be medically fit for the specialty applied for**

**D– Conditions for admission to the scientific department.**

**C– Choosing the student's desire from more than one desire arranged according to preference**

**H– High school acceptance rate**

**X– Absorptive capacity of the scientific department.**

## 13. The most important sources of information about the program

1. Sources approved by international universities
2. Local trends
3. Market needs
4. Studies and questionnaires
5. Specialized seminars and workshops with beneficiaries

## 14. Program Development Plan

The focus in the Department of Oil and Gas Engineering is on continuous improvement. The department always seeks to improve the scientific and administrative process and overcome all the difficulties and obstacles that hinder the educational program by developing human resources to develop personality. The following procedures explain the steps implemented or in the process of implementation in this area:

1. Continuous improvement and development of faculty members through training programs and workshops inside and outside the department and university.

2. Increasing extracurricular activities, such as holding conferences, scientific seminars, and personal and sports creativity, locally, regionally, and internationally.

3. Encouraging faculty members to obtain the highest academic and administrative ranks.

4. Providing modern scientific sources and books for the department's library to keep pace with the rapid progress in engineering sciences.

5. Providing specialized software in petroleum engineering and the computers necessary for this, along with Internet lines, for all teachers.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2024-2023/One	UOW111	English Language	Basic	√	√	√	√	√	√		√	√	√	√	√
2024-2023/One	OGE112	Principle to Petroleum Engineering	Basic	√	√	√	√		√	√	√	√	√	√	√
2024-2023/One	ENG113	Calculus I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	ENG114	Engineering Mechanics and Strength of Material	Basic	√	√		√	√	√	√		√	√	√	√

2024-2023/One	UOW115	Computer Programming I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	ENG116	Workshops I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	OGE117	General Geology I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	UOW121	Chemistry	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	OGE122	General Geology II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	ENG123	Calculus II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	ENG124	Engineering Practices	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/One	ENG125	Engineering Ethics	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024–2023/One	ENG116	Workshops II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/One	UOW126	Rights and Human Democracy	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/Two	UOW211	Academic English writing	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/Two	ENG212	Ordinary differential equations	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/Two	ENG213	Fluid Mechanic I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/Two	ENG214	Computer Programming II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/Two	OGE215	Structural geology	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024-2023/ Two	ENG216	Statistics and Optimization	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Two	UOW226	Crimes of the Baath regime in Iraq	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Two	OGE221	Petroleum Geology	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Two	OGE222	Properties and transportation of crude oil and gas	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Two	ENG223	Fluid Mechanic II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Two	OGE224	Petrophysics of Reservoir Engineering	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024–2023/ Two	ENG225	Physics and Thermodynamic	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Two	ENG226	Partial differential equations	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE311	Drilling Engineering I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE312	Well Logging and Formation Evaluation I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE313	Production Engineering I	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE314	Reservoir Engineering I (Reservoir Fluids)	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024–2023/ Three	OGE315	Geophysics and Rock Mechanics	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	ENG316	Numerical analysis	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE321	Drilling Engineering II (Casing design and Cementing)	Basic	√	√	√		√	√		√	√	√	√	√
2024–2023/ Three	OGE322	Well Logging and Formation Evaluation II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE323	Production Engineering II	Basic	√	√	√	√	√	√	√	√	√		√	√
2024–2023/ Three	OGE324	Reservoir Engineering II (Gas Reservoir)	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024–2023/ Three	ENG325	Health, Safety, and Environmental	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Three	OGE326	Risk analysis and Petroleum Economics	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Four	OGE411	Petroleum reservoirs engineering	Basic	√	√	√	√	√	√	√		√	√	√	√
2024–2023/ Four	OGE412	Well Control	Basic	√	√		√		√	√	√	√	√	√	√
2024–2023/ Four	OGE413	Well Testing	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Four	OGE414	Natural Gas Engineering	Basic	√	√	√	√		√	√	√	√	√	√	√

2024–2023/ Four	OGE415	Integrated Reservoir Management I	Basic	√	√	√	√	√	√		√	√	√	√	√
2024–2023/ Four	ENG416	Engineering project	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Four	OGE421	Directional drilling and Well Design	Basic	√	√	√	√		√	√	√	√	√	√	√
2024–2023/ Four	OGE422	Workover and Well Stimulation	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024–2023/ Four	OGE423	Improved Oil Recovery	Basic	√	√	√	√	√	√	√		√	√	√	√
2024–2023/ Four	OGE424	Reservoir Simulation	Basic	√	√	√	√	√	√	√	√	√	√	√	√

2024-2023/ Four	OGE425	Integrated Reservoir Management II	Basic	√	√	√	√	√	√	√	√	√	√	√	√
2024-2023/ Four	ENG416	Engineering project	Basic	√	√	√	√	√	√	√		√	√	√	√

