1. Oil and Gas engineering speciality

This program delivers the necessary knowledge and skills required for an integrated study and evaluation of a prospect, leading to a viable oil and gas field development plan.

The ***Degree Program in Oil & Gas Engineering*** develops your skills, so you will be able to appraise and select the appropriate technologies for safe production recovery of hydrocarbon oil and gas and includes hands-on experience of using industry-standard simulation software in all aspects of petroleum engineering.

There are hundreds of energy companies in Azerbaijan and the surrounding regions, including world leaders such as Baker Hughes, BP, Chevron, Halliburton, Royal Dutch Shell, Schlumberger, Total Energies, Technip Energies, SOCAR, Weatherford. Our degree programs benefit from direct industry involvement, including industry advisory panels, guest lectures, field trips, site visits, networking and careers events, and industry supported student projects.

Also, Graduate Career Center is operating at ASOIU to establish students' relationships with different state and private companies to meet their requirements. The center organizes a large exhibition for students and graduates of the University in May and December every year.

2. Objectives of the degree program

The educational objectives of the Degree Program in Oil & Gas Engineering reflect the mission of Azerbaijan State Oil & Industry University.

The aims of the Department of Oil & Gas Engineering are; bringing up experienced and knowledgeable individuals equipped with theoretical and practical information related to the discipline, and at the same time, bring up competent individuals who are able to contribute to the development and research studies in the field and to be managers and instructors to continue bringing up qualified people who can effectively serve in this field.

The department aims to raise specialists and instructors for the field of Oil & Gas Engineering discipline and by this way, help to meet the demands in relevant industries, job centres and higher education institutions.

The degree program aims at equipping our students with the abilities needed to face with confidence the challenges of the domestic and foreign professional sector or of post-graduate academic programs at home or abroad. Our graduates acquire the professional skills that rapidly shift to technological environment demands, including complex reasoning, critical thinking, and problem solving. They are able to assume leading roles in the industry. In addition, our graduates are in position to succeed in the private industrial sector, in the government sector, as well as in the academic and research environment.

CURRICULUM OF DEGREE PROGRAM

First Year, Fall Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
ENG1101	English I	3	6	ECS	
MATH101	Calculus I	3	6	MT	
OGEN1101	Intro to Petroleum Engineering	2	3	OGOE	
CHEM1101	General Chemistry I	3	6	BS	
LAB1101	Introduction to Laboratory Safety & Hazardous Materials	2	3	BS	
ECON1101	Industrial Economics & Finance	3	6	BS	

First Year, Spring Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
ENG1201	English II	3	5	ECS	ENG1101
MATH1201	Calculus II	3	6	MT	MATH101
CHEM1201	General Chemistry II	3	6	BS	CHEM1101
LAB1201	General Chemistry II Lab	2	4	BS	CHEM1201
PHYS1201	General Physics	3	5	BS	
TECH1201	Statics & Mechanics	2	4	BS	

Second Year, Fall Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
ENG2101	Technical English I	3	6	ECS	ENG 1201
EXP2101	Exposition And Argumentation	3	6	ECS	
MATH2101	Analitical Geometry & Linear Algebra	3	6	MT	MATH1201
OGEN2101	Reservoir Fluid Flow	3	5	OGOE	OGEN 1101
LAB2101	Reservoir Fluid Flow Lab	2	3	OGOE	OGEN2101
NTE	Elective	3	4	ECS	

Second Year, Spring Semester 30 Credits

Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
ENG2202	Technical English II	3	5	ECS	ENG2101
MATH2202	Differential Equations	3	6	MT	MATH2101
OGEN2202	Drilling Fluids	3	6	OGOE	OGEN1101
LAB2201	Drilling Fluids Laboratory	2	4	OGOE	OGEN2201
OGEN2201	Petrolphysics & Formation Eval.	3	6	OGOE	
LAB2202	Petroleum & Formation Eval Lab	2	3	OGOE	OGEN2201

Third Year, Fall Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
OGEN3101	Improved Petroleum Recovery	3	5	OGOE	OGEN2101
OGEN3101	Phase Behavior	3	6	OGOE	
OGEN3101	Drilling Engineering	3	6	OGOE	
LAB3101	Drilling Engineering Lab	2	3	OGOE	OGEN3101
TECH3102	Senior Design I	2	4	CS	
TE	Technical Elective	3	6	EGOE	

Third Year, Spring Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
OGEN3202	Reservoir Engineering	3	6	OGOE	
OGEN3202	Transport Phenomenon	3	5	OGOE	
TECH3202	Senior Design II	2	4	CS	
OGEN3202	Production Engineering	3	5	OGOE	
LAB3201	Production Engineering Lab	2	4	OGOE	OGEN3202
TE	Technical Elective	3	6	EGOE	

Fourth Year, Fall Semester 30 Credits					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
OGEN4101	Natural Gas Engineering	3	4	OGOE	
OGEN4101	Well Design Control	3	4	OGOE	OGEN3101
OGEN4101	Well Comp; P & R	3	4	OGOE	
TE	Technical Elective	3	6	EGOE	

TE	Technical Elective	3	6	EGOE	
TE	Technical Elective	3	6	EGOE	

Fourth Year, Spring Semester					
Course Code	Course Name	(Hour) Credit	ECTS	Category	Prerequisite
	Practical training		21	PT	
	Bachelor Thesis with Final Presentation		9	BT	

MT: Mathematics, BS: Basic Science, ECS: English Composition and Social Sciences, CS: Computer Science, OGOE: Obligatory Oil-Gas Engineering Courses, EGOE: Elective Oil-Gas Engineering Courses, BT: Bachelor's Thesis, SI: Summer Internship.

Non-Tecnical Elective

- HIST 5001 History of Azerbaijan

Technical Electives

- OGEN 5001 Offshore Engineering
- OGEN 5002 Natural Gas Reservoir Engineering
- OGEN 5003 Natural Gas Production Engineering
- OGEN 5004 Statistics & Probability for Petroleum Engineers
- OGEN 5005 Directional Drilling Tools and Calculations
- OGEN 5006 Well Stimulation
- OGEN 5007 Special Operation in Drilling
- OGEN 5008 Well Test Analysis
- OGEN 5009 Reservoir Characterization
- OGEN 5010 Pressure Control
- OGEN 5011 Transportation & Storage of Natural Gas
- OGEN 5012 Oil Transportation & Storage
- OGEN 5013 Simulating of Geosystems
- OGEN 5014 Mathematical Modeling of Hydrocarbon Reservoirs

3.Learning outcomes of the degree program

The degree program intends to prepare students and help them to graduate with a number of abilities and skills. Learning outcomes are presented below and they are accessible on the ASOIU web site for all students, staff members, and all the other parties interested.

Learning outcomes of the Bachelor program include development of:

1. ***Ability to apply and deeply understand mathematical, technical and natural disciplines.***
2. ***The ability to conduct a deep analysis of the problem, aimed at identifying the necessary requirements and methods for solving it.***

3. ***The ability to combine knowledge of the mathematical foundations, algorithms and methods of the hydrocarbon field development process in reservoir modelling and reservoir system design.***
4. ***According to the knowledge and skills acquired during the training, develop innovative processes and components for systems that meet modern requirements from an economic, environmental and social point of view.***
5. ***Ability to interpret data, obtained as a result of planning and conducting various kinds of research and experiments, as well as the ability to predict the further development of the system.***
6. ***Ability to apply the skills and knowledge of engineering when working in a multidisciplinary team.***
7. ***Constant and continuous self-development and learning for a long time.***
8. ***Apply knowledge of information technology and oil and gas fields to propose appropriate solutions to oil and gas operations.***
9. ***Critically apply the essential tools available for finding and characterizing hydrocarbon accumulations using formation evaluation techniques.***
10. ***Ability to demonstrate detailed knowledge and application of operational and technical activities involved in exploration and production.***