# University of Baghdad
# جامعة بغداد

*First Cycle – Bachelor's Degree (B.Sc.) - Petroleum Engineering*

بكالوريوس - هندسة نفط


**Table of Contents**

# 1. Overview

This catalogue is about the courses (modules) given by the program of petroleum Engineering in University of Baghdad to gain the Bachelor of Science degree. The program delivers (48) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

**نظره عامه**

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج هندسة النفط في جامعة بغداد للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (48) مادة دراسية، مع (٦٠٠٠) إجمالي ساعات حمل الطالب و ٢٤٠ إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على نظام بولونيا.

# 2. Undergraduate Courses 2023-2024

**Module 1**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| PENG116 | General geology | 8 | First |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 3 | 4 | 109 | 91 |
| **Description** | | | |
| General Geology is a foundational module in petroleum engineering that introduces students to the fundamental principles of geology and its relevance to the exploration and production of oil and gas. The module provides an overview of the Earth's structure, composition, and geological processes, focusing on topics essential for understanding petroleum systems.<br>The General Geology module provides petroleum engineering students with a solid foundation in geological principles, allowing them to understand the geological characteristics of oil and gas reservoirs and make informed decisions during exploration and production activities. It serves as a basis for further specialized studies in areas such as reservoir characterization, formation evaluation, and seismic interpretation. | | | |

**Module 2**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| PENG 115 | Engineering Mechanics | 5 | 1st |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 3 | 1 | 63 | 62 |
| **Description** | | | |
| Engineering Mechanics: This module focuses on the fundamental principles of engineering mechanics and the behavior of materials under various loads and conditions. It provides a solid foundation for understanding the mechanical aspects of petroleum engineering.<br>The module "Engineering Mechanics" provides students with a strong understanding of the fundamental principles that govern the behavior of materials and structures. This knowledge is essential for designing and analyzing various components and systems in petroleum engineering, such as wellbore casings, offshore structures, and pipelines | | | |

**Module 3**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| CENG114 | Mathematics I | 6 | 1st |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | 2 | 63 | 87 |
| **Description** | | | |
| The Mathematics module in a Petroleum Engineering department focuses on providing students with a solid foundation in mathematical concepts and tools that are essential for solving engineering problems in the field of petroleum engineering.<br>The Mathematics module provides students with the necessary mathematical tools to analyze, model, and solve engineering problems encountered in the petroleum industry. It helps students develop quantitative skills and critical thinking abilities, enabling them to apply mathematical concepts to real-world scenarios in petroleum engineering. | | | |

**Module 4**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| CENG113 | Workshop Technology | 3 | 1st |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| | 2 | 33 | 42 |
| **Description** | | | |
| | | | |

**Module 5**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| GE112 | Computer Science I | 4 | 1st |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | 2 | 63 | 37 |
| **Description** | | | |
| This module introduces students to the fundamental principles of computer programming and its applications in the field of petroleum engineering. It aims to equip students with programming skills to solve engineering problems, analyze data, and develop software tools for various petroleum engineering tasks.<br>The Computer Programming module provides petroleum engineering students with a strong foundation in programming concepts and techniques, enabling them to leverage computational tools and algorithms to solve industry-specific problems efficiently. By acquiring programming skills, students enhance their problem-solving abilities and become well-equipped to navigate the digital landscape of the petroleum industry. | | | |

**Module 6**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| GE 111 | English Language I | 4 | 1st |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 4 | | 63 | 37 |
| **Description** | | | |
| English Language Module: The English language module is designed to enhance students' communication skills in English, specifically tailored to the needs of petroleum engineering professionals. It aims to develop their language proficiency, both in written and spoken English, to effectively communicate technical concepts and ideas in the field of petroleum engineering.<br>The English language module aims to equip petroleum engineering students with the necessary language skills to thrive in an international and technical environment. By improving their English proficiency, students can effectively communicate their ideas, research findings, and technical knowledge within the petroleum engineering industry. | | | |

**Second Semester**
**Module 1**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| PENG 126 | Strength of Materials | 5 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | 2 | 63 | 62 |
| **Description** | | | |
| Strength of materials is a module within petroleum engineering that deals with the behavior of materials when they are subjected to forces, stresses, and strains. This area of study is critical in designing and constructing safe and reliable structures for the petroleum industry, ranging from oil rigs to pipelines. The course material typically covers concepts such as stress and strain analysis, deformation, and failure of materials such as metals, ceramics, and composites, along with the various mechanical properties of these materials.<br>By understanding the principles of strength of materials, petroleum engineers can design efficient and effective equipment for extracting and processing oil and gas. Overall, the strength of materials course is an essential foundation for any petroleum engineer, providing the knowledge necessary to design, analyze, and optimize | | | |

**Module 2**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| CENG 125 | Physics and Thermodynamic | 7 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 3 | 3 | 93 | 82 |
| **Description** | | | |
| The Physics and Thermodynamics module in a Petroleum Engineering department focuses on the fundamental principles of physics and thermodynamics as they apply to the oil and gas industry. It provides students with a solid understanding of the physical properties of fluids and the behavior of energy in various systems.<br>The Physics and Thermodynamics module provides the foundational knowledge necessary for petroleum engineers to analyze and solve engineering problems related to fluid flow, heat transfer, and energy conversion. It serves as a basis for more advanced modules in areas such as reservoir engineering, production engineering, and well design. | | | |

**Module 3**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| PENG 124 | Chemistry | 5 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | 2 | 63 | 62 |
| **Description** | | | |
| Analytical Chemistry: Analytical Chemistry is a module within the petroleum engineering department that focuses on the principles and techniques used to analyze and characterize various substances related to the oil and gas industry. It provides students with a strong foundation in chemical analysis methods that are essential for understanding and solving problems in petroleum engineering.<br>The Analytical Chemistry module equips petroleum engineering students with the necessary skills to analyze and interpret chemical data relevant to the oil and gas industry. It enables them to evaluate the quality of petroleum products, assess environmental impacts, and make informed decisions based on analytical results. | | | |

**Module 4**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| CENG 123 | Mathematics II | 6 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | 2 | 63 | 87 |
| **Description** | | | |
| The Mathematics module in a Petroleum Engineering department focuses on providing students with a solid foundation in mathematical concepts and tools that are essential for solving engineering problems in the field of petroleum engineering.<br>The Mathematics module provides students with the necessary mathematical tools to analyze, model, and solve engineering problems encountered in the petroleum industry. It helps students develop quantitative skills and critical thinking abilities, enabling them to apply mathematical concepts to real-world scenarios in petroleum engineering. | | | |

**Module 5**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| CENG122 | Engineering Drawing and AutoCad | 5 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 1 | 3 | 63 | 62 |
| **Description** | | | |
| The engineering drawing module is designed to provide students with the necessary skills and knowledge to create and interpret technical drawings related to petroleum engineering, Students learn about the different drawing tools, instruments, and software used in creating engineering drawings. They are introduced to concepts such as scales, lines, dimensions, and symbols commonly used in technical drawings.<br>Through the engineering drawing module, petroleum engineering students gain the necessary skills to visualize, communicate, and document engineering designs and concepts effectively. These skills are crucial for various aspects of their future careers, such as equipment design, facility planning, and project management in the petroleum industry | | | |

**Module 6**

| Code | Course/Module Title | ECTS | Semester |
|---|---|---|---|
| GE 121 | Democracy and Human Rights | 2 | 2nd |
| **Class (hr/w)** | **Lect/Lab./Prac./Tutor** | **SSWL (hr/sem)** | **USWL (hr/w)** |
| 2 | | 33 | 17 |
| **Description** | | | |
| | | | |

## Contact

Program Manager:
Name | Ph.D. in | Assistant Prof.
Email:
Mobile no.:

Program Coordinator:
Name | Ph.D. in | Assistant Prof.
Email:
Mobile no.:

---