

University of Mosul



College of Petroleum and Mining Engineering

Bachelor's degree (B.Sc.) in Petroleum and Refining Engineering



Table of Contents | جدول المحتويات

1. Mission & Vision Statement	بيان المهمة والرؤية
2. Program Specification	مواصفات البرنامج
3. Program (Objectives) Goals	أهداف البرنامج
4. Program Student learning outcomes	مخرجات تعلم الطالب
5. Academic Staff	الهيئة التدريسية
6. Credits, Grading and GPA	الاعتمادات والدرجات والمعدل التراكمي
7. Modules	المواد الدراسية
8. Contact	اتصال

1. **Mission & Vision Statement**

Vision Statement

Here are a few points,:

- To be the leading center of excellence in refining and gas processing engineering, renowned for producing highly skilled graduates, groundbreaking research, and innovative solutions that shape the future of the energy industry.
- To pioneer sustainable refining and gas processing technologies, minimizing environmental impact and maximizing resource efficiency, while educating future generations of engineers committed to responsible energy practices.
- To drive innovation in refining and gas processing through cutting-edge research and development, fostering a culture of creativity and entrepreneurship, and preparing engineers to lead the industry's transformation.
- To be the premier resource for refining and gas processing expertise in Iraq, contributing to economic growth and energy security through world-class education, research, and industry partnerships.
- To shape the future of energy through advancements in refining and gas processing engineering.

Mission Statement

Here are some examples, highlighting different aspects:

- To provide high-quality education and conduct cutting-edge research in refining and gas processing engineering, preparing graduates to excel in the energy industry and contribute to technological advancements.
- To equip students with the practical skills and theoretical knowledge necessary to succeed in the refining and gas processing industry, fostering strong industry partnerships and promoting experiential learning.
- To advance sustainable refining and gas processing technologies through innovative research and education, addressing the evolving energy needs of society while minimizing environmental impact.
- To serve as a hub for collaborative research and education in refining and gas processing, fostering a vibrant learning community and engaging with industry and government partners to address critical energy challenges.
- To educate and inspire the next generation of refining and gas processing engineers, driving innovation and shaping the future of energy.

2. **Program Specification**

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

Program Overview : The Petroleum and Refining Engineering program focuses on providing students with a comprehensive understanding of petroleum exploration, production, refining, and processing. It equips students with the knowledge and skills necessary for a career in the oil and gas industry.

Duration: The program typically spans four years, divided into eight semesters

3. **Program Objectives**

Objectives for a Refining of Oil and Gas Engineering define the specific, measurable, achievable, relevant, and time-bound (SMART) goals that the department aims to accomplish. They describe what graduates are expected to be able to do after completing the program. Here are some points of program objectives, categorized for clarity:

- **Develop Professional Competence**
Graduates will be capable of applying engineering knowledge, modern tools, and problem-solving skills to design, operate, and optimize oil and gas refining processes in line with industry standards.
- **Foster Ethical and Responsible Practice**
Graduates will uphold professional ethics, prioritize safety, and integrate environmental and social responsibility into their engineering decisions and workplace practices.
- **Enhance Communication and Leadership Skill**
Graduates will demonstrate effective communication, teamwork, and leadership abilities, enabling them to collaborate successfully across multidisciplinary teams and take on leadership roles.
- **Promote Lifelong Learning and Career Growth**
Graduates will remain committed to continuous learning, professional development, and adaptability to new technologies, preparing them for career advancement or further graduate studies.

4. **Student Learning Outcomes**

have introductory information about petroleum and refinery. learn the history of refinery development and composition of petroleum. learn the refinery products, test methods and petroleum properties. recognize the characteristics of petroleum refinery process. recognize the distillation processes. learn solvent treating and extraction processes. learn fluid mechanics. learn combustion, vaporization and condensation. learn fractionation and towers. have information about heat and cracking. learn heat transfer and exchangers. learn Thermal cracking. learn catalytic cracking and reforming. learn typical design calculation and economics of design.

Knowledge and Understanding:

1. An ability to apply knowledge of petroleum and refining engineering principles to solve complex problems in the petroleum industry.

2. An ability to design and develop solutions that meet the needs of the petroleum industry, with consideration for safety, environmental, and economic factors.
3. An ability to conduct experiments, analyze data, and interpret results to inform decision-making in the petroleum industry.
4. An ability to communicate effectively with both technical and non-technical stakeholders in the petroleum industry.
5. An ability to recognize and apply ethical and professional responsibilities in the petroleum industry.
6. An ability to recognize the need for lifelong learning and to stay current with industry developments and advancements.
7. An ability to function effectively as a member of a multidisciplinary team in the petroleum industry.

5. Academic Staff

Muneef Mahjoob Mohamed | PhD in Petroleum Geology | Assistant Professor

Email: m.m.mohammed@uomosul.edu.iq

Mobile no.: 009647728213415

Majid Majdi Abed Al-Majeed Al-Mutwali | Ph.D. Geology/Stratigraphy and Paleontology | Professor

Email: majidmutwaly@uomosul.edu.iq

Mobile no.: 07705255017

Nabhan Abdulkareem Hamdon | Ph.D - Plasma physics | Assistant Professor

Email: nabhanabdul@uomosul.edu.iq

Mobile no.: 07722045423

Raqeeb Hummadi Rajab | M.Sc. in Mechanical Engineering/Thermal Power | Assistant Professor

Email: raqeeb.hummadi@uomosul.edu.iq

Mobile no.: 07740867555

Liqaa Idress saeed | Ph.D / Industrial Chemistry | Assistant Professor

Email: l.idrees.saeed@uomosul.edu.iq

Mobile no: 077018964554

Ahmad Abdulsalam Aabid | Ph.D. in Chemical Engineering | Lecturer

Email: ahmadchemical1991@uomosul.edu.iq

Mobile no.: 07707465791

Muhammed Aswad Jassim | Ph. D Geochemistry | Assistant Professor

Email: muhammed.aswad@uomosul.edu.iq

Mobile no: 07717010695

Mohammed Ali Malallah Alrashedi | Ph. D., Geology /Sedimentology | Lecturer

Email: dr.mohammed.ali@uomosul.edu.iq

Mobile no: 07703070118

Semaa Ibraheem Khaleel | Ph.D / Industrial Chemistry| Lecturer

Email: dr.semaibraheem@uomosul.edu.iq

Mobile no: 07704123176

Maher Obaid Ahmed | MSc. Chemical Engineering| Assistant Lecturer

Email: maher.obeed@uomosul.edu.iq

Mobile no: 07708484556

Zahraa Ghanim Younis Al-alaf | MSc. Dams Engineering and Water Resources / Irrigation| Assistant Lecturer

Email: zahraaalmajidi@uomosul.edu.iq

Mobile no: 07507093065

Zaid Salahaldeen Thanoon| MSc. Civil Engineering| Assistant Lecturer

Email: zeadsalahaldeen@uomosul.edu.iq

Mobile no: 07736976951

Ghufran faris abdullah | MSc. water resource engineering/Hydraulic| Assistant Lecturer

Email: ghufranalrahhawi@uomosul.edu.iq

Mobile no: 07736977048

Arqam Bashar Younus | MSc. Civil Engineering | Assistant Lecturer

Email: arqam.bashar@uomosul.edu.iq

Mobile No: 07715552030

6. Credits, Grading and GPA

Credits

Mosul 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
PRE111	Principles of process engineering I	87	88	6.00	B	
PRE112	Analytical chemistry	59	66	4.00	B	
PRE113	Mathematics I	59	91	4.00	B	
UOM1031	Computer I	45	30	4.00	S	
PRE115	Engineering mechanics and strength of materials	59	41	6.00	B	
PRE116	Engineering drawing	45	30	6.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE121	Principles of process engineering II	87	88	7.00	B	
PRE122	Organic chemistry	59	66	5.00	B	
PRE123	Mathematics II	59	91	6.00	B	

PRE124	Introduction to petroleum technology	59	91	6.00	S	
UOM1040	Human rights and democracy	31	19	2.00	B	
PRE126	Workshops	31	19	2.00	B	
UOM1011	Arabic language I	31	19	2.00	S	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE 211	Engineering mathematics I	59	91	5.00	B	
PRE 212	Fluid flow I	59	66	5.00	C	
PRE213	Thermodynamic I	59	66	5.00	C	
UOM2032	Computer II	45	30	3.00	S	
PRE 215	Petroleum chemistry	59	91	6.00	C	
PRE 216	Material engineering and Corrosion	45	55	4.00	B	
UOM2022	English Language II	27	23	2.00	S	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE221	Engineering mathematics II	59	66	5.00	B	
PRE 222	Fluid flow II	87	63	6.00	B	
PRE 223	Thermodynamic II	59	66	5.00	B	
UOM2012	Arabic language II	26	24	2.00	S	
PRE 224	Properties of Petroleum & Products	63	87	6.00	B	
PRE 225	Electrical Technology	40	60	4.00	B	
UOM2050	regime crimes	20	30	2.00	S	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
------	--------	------	-------	------	------	-------------

PRE 311	Engineering Analysis I	59	41	4.00	C	
PRE 312	Mass transfer I	59	66	5.00	C	
PRE 313	Petroleum refining process I	73	77	6.00	C	
PRE 314	Reactor design	59	66	5.00	C	
PRE 315	Heat transfer I	59	41	4.00	B	
PRE 316	Petrochemical engineering	59	91	6.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE 321	Engineering Analysis II	59	41	4.00	B	
PRE 322	Mass transfer II	59	66	5.00	C	
PRE 323	Petroleum refining process II	73	77	6.00	C	
PRE 324	Catalysts in petroleum refinery	59	66	5.00	C	
PRE 325	Heat transfer II	87	63	6.00	C	
PRE 326	Numerical methods and optimization	59	41	4.00	B	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE 411	Special petroleum process	59	66	5.00	C	
PRE 412	Plant design and utilities	73	77	6.00	C	
PRE 413	Process dynamic	73	52	5.00	C	
PRE 414	Unit operation I	87	63	6.00	C	
PRE 415	Petroleum pollution	59	66	5.00	C	
PRE 416	Project I	45	30	3.00	C	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
PRE 421	Gas technology	59	66	5.00	C	
PRE 422	Equipment design	73	77	6.00	C	

PRE 423	Process control	73	52	5.00	C	
PRE 424	Management and economics of petroleum projects	59	66	5.00	C	
PRE 425	Unit operation II	87	63	6.00	C	
PRE 426	Project II	45	30	3.00	C	

8. **Contact**

Program Manager:

Ahmad Abdulsalam Aabid | Ph.D. in Chemical Engineering | Lecturer

Email: ahmadchemical1991@uomosul.edu.iq

Mobile no.: 07707465791

Program Coordinator:

Ghufran faris abdullah | MSc. water resource engineering/Hydraulic | Assistant Lecturer

Email: ghufranalrahhawi@uomosul.edu.iq

Mobile no: 07736977048
