Ministry of Higher Education & Scientific Research

Scientific Supervision and Evaluation Body

Department of Quality Assurance and Academic Accreditation

Academic program Description form for the Department of Mining Engineering 2021-2022

University: University of Mosul

College: Petroleum and Mining Engineering College

Department: Mining Engineering Department

Date: 1/Aug/2020

Signature **Signature**

Head of Department: **Assist. Dean for Scientific Affairs:**

Azealdeen Salih Hassan Al-Jawadi **Mohammad Ali Al-Rashidi**

Date: 1/9/2021 **Date: 1/9/2021**

The file was checked by the **Division of Quality Assurance and University Performance**

The Director of the Division of Quality Assurance and University Performance: Dr. Asmaa Muaffaq Al Hasani

Date: 15/9/2021

Signature:

The Dean Ratification

Description of the academic program

This academic program description provides a necessary summary of the most important characteristics of the program and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the available opportunities. It is accompanied by a description of each course within the program:

1	**Educational institution**	Petroleum and Mining Engineering College/University of Mosul
2	**Scientific Department / Center**	Mining Engineering Department
3	**The academic or professional program**	Iraqi Council Accreditation for Engineering Education
4	**The final certificate**	Bachelor's degree in Petroleum and Mining Engineering
5	**Academic system: Annual/courses/others**	Annual
6	**The adopted accreditation program**	
7	**Other external influences**	
8	**Date of preparing the description**	1/9/2021

9. Aims of the academic program:

The Department of Mining Engineering aspires to be a local, regional, and global pioneer in graduating qualified engineers specializing in mining engineering and under the latest approved international curricula, to implement the various engineering projects that the country currently needs, and this is done by providing a high-quality engineering, educational and research environment in the field of mining engineering and serving their country. Also contributing to the development of scientific research to contribute to growth and technical progress and positively impact the local community of Nineveh Governorate in particular and the whole country.

10. Required program outcomes and teaching, learning, and evaluation methods:

The outcomes of the academic program of the Mining Engineering Department depend on two main axes:

First: Knowledge resulting from the basic module

The graduated mining engineer is expected to have sufficient knowledge of the basics of the mining profession based on a complete knowledge of minerals, ore processing, oil extraction, and petroleum geology. We expect the curriculum to provide the mining engineer with the necessary knowledge of surface and subsurface mine engineering, the skill of tunnel engineering, and the mechanism of drilling oil wells, in addition to the mining engineer learning the skill of working in the following basic extractive and transformational industries: the mining and mining industry, the petroleum production industry, and the mineral industries. All of these industries require a special type of worker to face unusual working conditions, and this is what the mining department engineer knows and learns to confront.

11. a. The Cognitive aims:

Knowledge resulting from scientific and applied lessons

The mining engineer is expected to have sufficient knowledge of the aspects of practical application through field visits to several regions, quarries, and oil refineries to link the aspects with theoretical and practical lessons for the maximum benefit that the mining engineer obtains to acquire the skill of working in the private and public sectors in addition to conducting laboratory tests.

11.b. Skills aims of the program:

The basic skills that a newly graduated mining engineer is expected to know

Training and qualifying students who have the ability after graduation as mining engineers to achieve the following goals:

1. The ability to develop their technical and personal skills to adapt to the technological developments they face in their professional lives.
2. The ability to carry out the duties assigned to them with high professionalism and adherence to applicable laws and regulations and professional ethics.
3. The ability to continue their postgraduate studies in mining engineering or any other field related to their field of specialization.
4. Ability to employ their communication, teamwork, and leadership skills to serve their profession
5. Full awareness of the important role played by the mining engineer in maintaining the health and safety of society by preserving the environment and implementing safety systems while working.
6. Optimal investment of mineral wealth and support of the national economy by supplying the industrial sector and mining companies associated with it with specialized and qualified cadres capable of applying scientific and engineering concepts in solving the engineering problems they face.
7. Design and conduct engineering experiments and analyze their results Design and conduct engineering experiments and analyze their results.
8. Design and implement engineering systems that effectively achieve the desired objectives.

9. Working with the group, team spirit, communication, and leadership.
10. Their awareness of the ethics and responsibilities of the profession.
11. Paying attention to continuing education in developing the skills of the basic scientific disciplines in the department. Such as engineering, mining and applied geology, mining engineering, planning and technology, mine surveying, ore concentration and processing engineering, engineering and design of tunnels and subsurface facilities, rock mechanics and tests, ventilation and industrial security in mines and tunnels, mineral ore geology, petroleum geology, drilling oil, gas and groundwater wells, extraction. Metallic and non-metallic mineral ores, processing of applied mineral ores, formation and casting of metals, corrosion, and protection of metals, non-metallic materials and their applications, evaluation and examination of engineering materials, and environmental studies.

11. Details of the academic program (curriculum):

First Year (1st Class)									
2nd Semester			1st Semester			Units	Subject	Symbol	No.
D	P	T	D	P	T				
1	---	3	1	---	3	6	Mathematics	ME 111	1
---	3	2	---	3	2	7	Physics	ME 112	2
---	3	2	---	3	2	7	Chemistry	ME 113	3
---	3	---	---	3	---	3	Engineering Drawing	ME 114	4
---	3	1	---	3	1	5	Programming (1)	ME 115	5
---	3	2	---	3	2	7	Geology	ME 116	6
---	--	1	---	--	1	2	English	ME 117	7
---	--	2	---	--	2	4	Engineering mechanics	ME 118	8
---	---	1	---	---	1	2	Democracy and human rights	ME 119	9
---	---	1	---	---	1	2	Chemical Safety and Security	ME 120	10
1	15	15	1	15	15	45	Sum		
31			31						

Second Year (2nd Class)									
2nd Semester			1st Semester			Units	Subject	Symbol	No.
D	P	T	D	P	T				
1	--	3	1	---	3	6	Numerical and Engineering Analytics	ME 211	1
1	2	2	1	2	2	6	Thermodynamics	ME 212	2
-	--	2	---	---	2	4	Engineering and mine management	ME 213	3
1	--	2	1	---	2	4	Mechanics of Materials	ME 214	4
--	3	1	---	3	1	5	Programming (2)	ME 215	5
1	1	2	1	1	2	5	Fluid mechanics	ME 216	6
--	2	2	---	2	2	6	Surveying Engineering	ME 217	7
4	8	14	4	8	14	36	Sum		
26			26						

Third Year (3rd Class)									
2nd Semester			1st Semester			Units	Subject	Symbol	No.
D	P	T	D	P	T				
1	---	1	1	---	1	2	Transportation and trading of ore	ME 311	1
1	2	1	1	2	1	4	Industrial chemistry	ME 312	2
---	2	1	---	2	3	8	Ore processing	ME 313	3
---	2	1	---	2	1	4	Well logging	ME 314	4
1	---	1	1	---	3	6	Mining engineering	ME 315	5
-	2	2	-	2	2	6	Applied rock mechanics	ME 316	6
1	2	1	1	2	1	4	Petroleum product engineering	ME 317	7
1	2	2	1	2	2	6	** Sulphur production processes engineering	ME 318	8
5	12	14	5	12	14	40	Sum		
31			31						

Forth Year (4th Class)									
2nd Semester			1st Semester			Units	Subject	Symbol	No.
D	P	T	D	P	T				
---	3	2	--	3	2	7	Computer Application in Mining Engineering	ME 411	1
---	--	3	--	---	3	6	Environmental and safety of mines	ME 412	2
1	--	2	1	---	2	4	Economics and analysis of mining data	ME 413	3
1	2	2	1	2	2	6	Fundamentals of mining engineering and technology	ME 514	4
			1	---	3	3	Design of mine machinery	ME 415	5
1	--	2				2	Rock blasting	ME 416	6
-	2	1	-	2	1	4	Tunnel engineering	ME 417	7
3	7	13	3	7	13	32	Sum		
23			23						
1	3	1	1	3	1	5	Final Year Projects (annual)	ME 4112	
37							Total sum		