Republic of Iraq

Ministry of Higher Education and Scientific Research

University of Mosul

College of Science

Self-Assessment Report

Department of Chemistry

College of Science

University of Mosul

For the Academic Year (2024-2025)

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http://uomosul.edu.iq/pages/ar/science/39901

Introduction

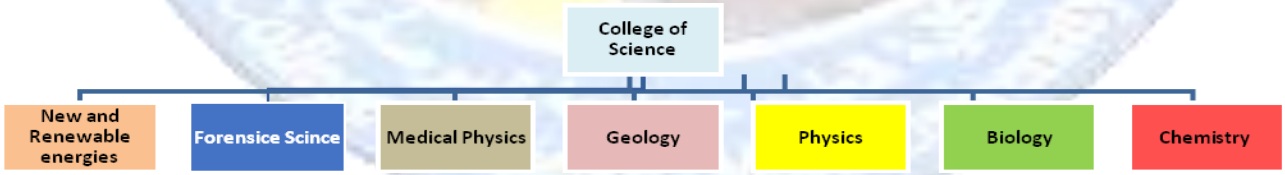
The University of Mosul is one of the most prominent universities in Iraq, located in the city of Mosul in northern Iraq. Established in 1967, it is one of the largest universities in Iraq in terms of the number of colleges and students. The university includes more than 20 colleges covering various fields such as engineering, medicine, pharmacy, science, arts, law, economics, agriculture, and education, in addition to several research institutes and centers.

The university is distinguished by its advanced academic programs and research activities in various disciplines. It is considered a leading center for higher education in northern Iraq, playing a pivotal role in serving the local community. Despite the significant challenges the university has faced in recent years, particularly during periods of occupation and armed conflict, it has continued to provide educational and research services. Today, it is recognized as one of the distinguished universities in Iraq and the region.

College of Science — University of Mosul

The College of Science is one of the foundational colleges at the University of Mosul, established in 1967. It is considered one of the leading colleges in the university. The college includes several scientific departments covering multiple scientific fields, and it is continuously developed to meet the needs of the labor market.

Currently, the college includes the following departments:



It is worth noting that the Mathematics and Computer Science departments were separated to establish an independent college named "College of Computer Science and Mathematics".

The College of Science is distinguished by its advanced educational programs and diverse research activities in natural and applied sciences. The college aims to provide high-quality education, promote scientific research, and create an encouraging academic environment that contributes to preparing qualified scientific cadres capable of meeting the needs of society and the labor market.

Department of Chemistry — College of Science — University of Mosul

The Department of Chemistry is one of the oldest departments in the College of Science, established in 1963. Studies began on 1/9/1963, making it the nucleus for the rest of the college's departments. The first batch of students graduated in the academic year 1966–1967. The department offers comprehensive study programs covering organic, inorganic, analytical, biochemical, physical, and industrial chemistry. The bachelor's program spans four years, after which students receive a Bachelor of Science in Chemistry.

Since its establishment, the department has been active in scientific research, with numerous studies published in reputable scientific journals. Research activity has significantly evolved with the launch of graduate programs, as the Master's program was opened in the academic year 1967–1968, followed by the Ph.D. program in 1985–1986, contributing to a major scientific renaissance.

In the academic year 2022–2023, evening studies were introduced in the department, achieving notable success by attracting an initial batch of students, with numbers rising to around 120 students in the following year, 2023–2024.

The department includes six main branches:

- Physical Chemistry
- Organic Chemistry
- Inorganic Chemistry
- Analytical Chemistry
- Biochemistry

- Industrial Chemistry

The department has adopted modern research projects in all these branches, many of which are directly linked to applications in medical, pharmaceutical, industrial, and oil fields, addressing Iraq's current needs. The number of published research papers locally, regionally, and internationally exceeds 1,500, in addition to a large number of patents contributing to solving Iraqi societal problems.

The department has a teaching staff of (105) faculty members, including:

- 18 Professors
- 27 Assist. Professors
- 49 Lecturers
- 11 Assistant Lecturers
- 5 Senior Professors

The department also distinguished infrastructure, including:

- 31 Equipped Laboratories
- 19 Research Laboratories
- 12 Undergraduate Laboratories
- 9 Classrooms

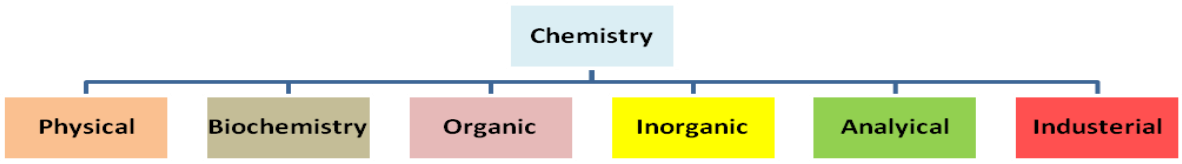
A specialized scientific library supporting educational and research activities

The department strives to prepare qualified scientific cadres for work in educational and research fields, while also providing consultative and analytical services to the community and various institutions. The department is keen to keep up with scientific developments through applied research and participation in disseminating scientific knowledge locally and globally.

Graduates of the Chemistry program have multiple career opportunities in pharmaceutical, chemical, cosmetic, soap and detergent, oils and fats, water treatment, batteries, raw material analysis, scientific research, medical analysis, and clinical pharmacy fields.

Today, the Department of Chemistry represents one of the fundamental pillars of education and scientific research at the university and national levels, striving to achieve a leading position among chemistry departments in Iraqi universities.

department's scientific structure includes six branches:



The department's most notable achievements since its establishment:

i. International conferences (3), local conferences (4).

ii. Seminars (29).

iii. Number of research papers since the department's establishment (1,718).

iv. Number of books authored and translated (38).

v. Number of exhibitions (57).

vi. Number of continuing education courses and workshops for the self-assessment year (2020-2021) (24).

vii. Department library: Includes 57,000 books and 253 periodicals.

viii. Free education: Number of books (7,800).

ix. Patents (26).

Members of the Self-Assessment Report Writing Team

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Academic Staff:

No.	Name	Academic title	Field	Fine Subject
1.	Dr. Salem Jassim Mohammed Saleh Al-Juhaishi	Prof.	Chemistry	Organic Chemistry
2.	Dr. Imad Younis Hassan Al-Nasser	Lecturer	Chemistry	Analytical Chemistry
3.	Dr. Nabil Sobeih Othman Khader Tahafi	Prof.	Chemistry	Analytical Chemistry
4.	Dr. Rabah Ali Khalil Mahmoud Al-Hamdani	Prof.	Chemistry	Physical Chemistry
5.	Dr. Asaad Faisal Khattab Omran Al Omran	Prof.	Chemistry	Industrial Chemistry
6.	Dr. Salem Ali Muhammad Saleh Qassab	Prof.	Chemistry	Analytical Chemistry
7.	Dr. Adnan Othman Omar Maami Hasakah	Prof.	Chemistry	Organic Chemistry
8.	Dr. Thikra of Ali Fathi Alloush Aloush	Prof.	Chemistry	Biochemistry
9.	Dr. Louay Abd Ali Ismail Al-Hilali	Prof.	Chemistry	Biochemistry
10.	Dr. Fawzi Habib Gabriel Ibrahim Ibrahim	Prof.	Chemistry	Industrial Chemistry
11.	Dr. Abdul Rahman Basil Fadel Amin Al-Obaidi	Prof.	Chemistry	Industrial Chemistry
12.	Dr. Zeina Abdel Moneim Muhammad Al-Jawadi	Prof.	Chemistry	Biochemistry
13.	Dr. Zahraa Muhammad Ali Ahmed Mustafa Hamouda	Prof.	Chemistry	Biochemistry
14.	Dr. Amer Thanon Abdul Rahman Ahmed Al-Taie	Prof.	Chemistry	Physical Chemistry
15.	Dr. Ammar Hussein Abdullah Fares Al-Sabaawi	Prof.	Chemistry	Organic Chemistry
16.	Dr. Ammar Abdulsattar Ibrahim Yahya Al Dabbagh	Prof.	Chemistry	Physical Chemistry
17.	Dr. Shaima Khazal Younis Omar Al-Azzawi	Prof.	Chemistry	Organic Chemistry
18.	Dr. Hana Shukr Mahmoud Ahmed Al-Omari	Prof.	Chemistry	Analytical Chemistry
19.	Dr. Sahbaa Ali Ahmed Hassan Al-Sabaawi	Prof.	Chemistry	Inorganic Chemistry
20.	Dr. Laila Abdullah Mustafa Abdullah	Assistant Prof.	Chemistry	Biochemistry
21.	Dr. Saba Zaki Mahmoud Khader Al-Abaji	Assistant Prof.	Chemistry	Biochemistry

22.	Dr. Muhammad Bahri Hassan Abdel Saadoun	Assistant Prof.	Chemistry	Biochemistry
23.	Dr. Wasan Khairallah Ali Hussein Al-Dulaimi	Assistant Prof.	Chemistry	Biochemistry
24.	Dr. Iman Ismail Ahmed Majdhab Al-Akidi	Assistant Prof.	Chemistry	Industrial Chemistry
25.	Dr. Fatima Abdul Hamid Muhammad Al-Atrushi	Assistant Prof.	Chemistry	Biochemistry
26.	Dr. Sakina Hussein Rashid Ali Al-Rawi	Assistant Prof.	Chemistry	Biochemistry
27.	Dr. Iman Adel Hadi Hamdoun Ramadan	Assistant Prof.	Chemistry	Biochemistry
28.	Dr. Khansa Shaker Nemat Allah Al-Nima	Assistant Prof.	Chemistry	Inorganic Chemistry
29.	Dr. Khaleda Muhammad Omar Daed Al-Tai	Assistant Prof.	Chemistry	Analytical Chemistry
30.	Dr. Amra Fares Muhammad Darwish Al-Sarraj	Assistant Prof.	Chemistry	Inorganic Chemistry
31.	Dr. Munira Youssef Raouf Al-Naqshbandi	Assistant Prof.	Chemistry	Organic Chemistry
32.	Dr. Laila Juma Zaher	Assistant Prof.	Chemistry	Inorganic Chemistry
33.	Dr. Farah Tariq Saeed Muhammad Al-Tikriti	Assistant Prof.	Chemistry	Inorganic Chemistry
34.	Dr. Omar Adel Sharif	Assistant Prof.	Chemistry	Physical Chemistry
35.	Dr. Safaa Abdel Aziz Taha Amin Al-Amin	Assistant Prof.	Chemistry	Biochemistry
36.	Dr. Saeed Abdel Qader Saeed Al-Bighamberly	Assistant Prof.	Chemistry	Organic Chemistry
37.	Dr. Alaa Muhammad Tayyab Hussein Al Laila	Assistant Prof.	Chemistry	Physical Chemistry
38.	Dr. Saad Hassani, Sultan of Zarzis Allawi	Assistant Prof.	Chemistry	Analytical Chemistry
39.	Dr. Fanar Muhammad Ismail Muhammad Al-Hayali	Assistant Prof.	Chemistry	Physical Chemistry
40.	Dr. Shaima Hashem Abdel Rahman Mustafa Al-Hilali	Assistant Prof.	Chemistry	Physical Chemistry
41.	Dr. Haifa Younis Hussein Darwish Al-Jubouri	Assistant Prof.	Chemistry	Organic Chemistry
42.	Dr. Atallah Muhammad Sheet Mahmoud Al-Sharifi	Assistant Prof.	Chemistry	Organic Chemistry

43.	Dr. Asim Salman Abdullah Fathi Al-Boutani	Lecturer	Chemistry	Inorganic Chemistry
44.	Dr. Amira Muhammad Faraj Saleh Suleiman	Lecturer	Chemistry	Organic Chemistry
45.	Dr. Heba Amin Ibrahim Dhanoun Al-Alaf	Lecturer	Chemistry	Organic Chemistry
46.	Dr. Nada Bashir Sharif Hamid Al Nuaimi	Lecturer	Chemistry	Physical Chemistry
47.	Dr. Ala aldin M. Hani Darghouth	Lecturer	Chemistry	Physical Chemistry
48.	Dr. Samir Saadallah Azza Nasser Al-Hayali	Lecturer	Chemistry	Inorganic Chemistry
49.	Dr. Azzam Ahmed Muhammad Hudayd Al-Hadidi	Lecturer	Chemistry	Organic Chemistry
50.	Dr. Rafd Rabie Saadoun Muhammad Al-Taie	Lecturer	Chemistry	Biochemistry
51.	Dr. Rana Abdul Malik Suleiman Ali Al Qa'ba	Lecturer	Chemistry	Inorganic Chemistry
52.	Dr. Saleh Awaid Aboud Muhammad Al-Obaidi	Lecturer	Chemistry	Organic Chemistry
53.	Dr. Harith Muhammad Salman Abdul Ajili	Lecturer	Chemistry	Organic Chemistry
54.	Dr. Rana Hassan Ahmed	Lecturer	Chemistry	Physical Chemistry
55.	Dr. Firas Ahmed Thanon Al-Lolage	Lecturer	Chemistry	Physical Chemistry
56.	Dr. Alaa Hussein Jalil Muhammad Al-Taei	Lecturer	Chemistry	Physical Chemistry
57.	Dr. Amal Taha Yassin Ramla Al Jeraisy	Lecturer	Chemistry	Biochemistry
58.	Dr. Ehab Salem Ahmed Mahal Al-Jubouri	Lecturer	Chemistry	Industrial Chemistry
59.	Dr. Shaima Sultan Abo Al-Mutlaq Al-Aqidi	Lecturer	Chemistry	Industrial Chemistry
60.	Dr. Aseel Namir Abdul-Jabbar Obaid Agha	Lecturer	Chemistry	Analytical Chemistry
61.	Dr. Maha Thanoun Hussein Abdullah Al-Obaidi	Lecturer	Chemistry	Analytical Chemistry
62.	Dr. Heba Farouk Muhammad Amin Yahya Al-Kateb	Lecturer	Chemistry	Inorganic Chemistry
63.	Dr. Tahani Walid Jihad Yacoub Qato	Lecturer	Chemistry	Organic Chemistry
64.	Dr. Ahmed Salem Mahmoud Muhammad Al-Taie	Lecturer	Chemistry	Inorganic Chemistry
65.	Dr. Heba Abdul Salam Muhammad Abdullah	Lecturer	Chemistry	Organic Chemistry
66.	Dr. Ibrahim Muhammad Hayes Saleh Al-Khafaji	Lecturer	Chemistry	Physical Chemistry
67.	Manal Abdel Fattah Mohammed Abdullah	Assistant Prof.	Chemistry	Inorganic Chemistry
68.	Israa Ali Hassan Ali Haj Hussein	Assistant Prof.	Chemistry	Inorganic Chemistry
69.	Basemah Ahmed Abdel Hadi Salim Al-Taha	Assistant Prof.	Chemistry	Analytical Chemistry
70.	Neaam Muhammad Tayyab Hussein Al Laila	Assistant Prof.	Chemistry	Industrial Chemistry

71.	Wael Abdul Qader Abdullah Abdul Qader Al Qazzaz	Lecturer	Chemistry	Analytical Chemistry
72.	Amal Ghazi Abd Rahawi Al-Sarraj	Lecturer	Chemistry	Physical Chemistry
73.	Inaam Ahmed Hamdoun Al-Gargis	Lecturer	Chemistry	Analytical Chemistry
74.	Luma Ahmed Mubarak Jarallah	Lecturer	Chemistry	Inorganic Chemistry
75.	Kawakeb of Abdul Aziz Muhammad Majeed Al-Tai	Lecturer	Chemistry	Inorganic Chemistry
76.	Hanan Hamid Ahmed Suleiman Al-Ali	Lecturer	Chemistry	Analytical Chemistry
77.	Zeina Talal Shaker Mahmoud Bakr	Lecturer	Chemistry	Analytical Chemistry
78.	Sariya Walid Zidan Thanoun Al-Taie	Lecturer	Chemistry	Inorganic Chemistry
79.	Israa Adnan Saeed Ahmed Al-Shukarji	Lecturer	Chemistry	Inorganic Chemistry
80.	Asmaa Natiq Abdul Qadir Mahmoud Al Arhaim	Lecturer	Chemistry	Analytical Chemistry
81.	Amna Farouk Sanallah Abdullah Al-Omari	Lecturer	Chemistry	Industrial Chemistry
82.	Mawada Muhammad Suleiman Hassan Al-Ghabsha	Lecturer	Computer Science	Artificial intelligence
83.	Saba Mumtaz Saleh Taha Al-Asali	Lecturer	Chemistry	Inorganic Chemistry
84.	Noha Abdel Qader Sharif Omar Al Talib	Lecturer	Chemistry	Biochemistry
85.	Afia Muayyed Younis Mustafa Al-Dabbagh	Lecturer	Chemistry	Inorganic Chemistry
86.	Mafaz Khaled Saeed Tawfiq Al-Sayegh	Lecturer	Chemistry	Biochemistry
87.	Lama Taha Daoud Sharif Al-Bakr	Lecturer	Chemistry	Analytical Chemistry
88.	Naseem Maysar Abdel Hamid Al-Hamdani	Lecturer	Chemistry	Analytical Chemistry
89.	Safa Abdel Aleem Ahmed Younis Zakaria	Lecturer	Chemistry	Analytical Chemistry
90.	Ibrahim Muhammad Ahmed Al-Halima	Lecturer	computer Sciences	Network security
91.	Anfal Raad Mahmoud Ahmed Al-Barhawi	Lecturer	Chemistry	Physical Chemistry
92.	Sana Abdel-Ilah Ahmed Girgis Abdel-Mawjoud	Lecturer	Chemistry	Biochemistry
93.	Saba Hazem Siddiq Hassan Al-Sarati	Lecturer	Chemistry	Synthetic Chemistry
94.	Raghad Abdel Mawjoud Muhammad Al-Abadi	Lecturer	Chemistry	Biochemistry
95.	Fayhaa Kamal Hussein Ali Al-Jarrah	assistant Lecturer	Chemistry	Inorganic Chemistry
96.	Khaled Nazir Hamid Abdullah Al-Sarraf	assistant Lecturer	Chemistry	Inorganic Chemistry
97.	Lana Abdel Hamid Rashid	assistant Lecturer	Chemistry	Inorganic Chemistry

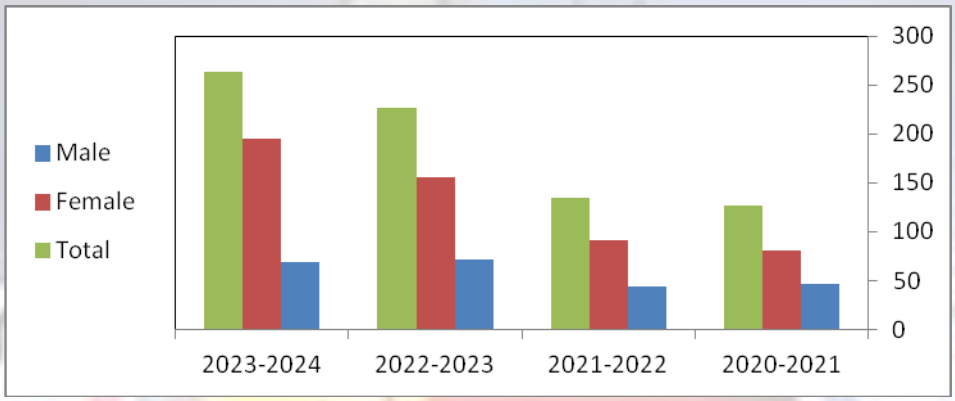
98.	Enas Samir Thanoun Mahmoud Mulla Hamo	assistant Lecturer	Chemistry	Analytical Chemistry
99.	Muhammad Adnan Muhammad Ali Al-Qaba	assistant Lecturer	Chemistry	Organic Chemistry
100.	Dr. Muhammad Qahtan Hassan Ali Siala	assistant Lecturer	Chemistry	Physical Chemistry
101.	Amna Adnan Muhammad Shihab Al Fares	assistant Lecturer	Chemistry	Inorganic Chemistry
102.	Iman Bahjat Bashir Tawfiq Mulla Jarjis	assistant Lecturer	Chemistry	Analytical Chemistry
103.	Sahba Younis Majeed Abdul Ghani Al-Taie	assistant Lecturer	Chemistry	Inorganic Chemistry
104.	Shahla Ahmed Younis	assistant Lecturer	Chemistry	Organic Chemistry
105.	Shaima Younis Ibrahim Dhanoun Al-Taie	assistant Lecturer	Chemistry	Organic Chemistry

Administration Authorities Staff:

no.	Name	Position
1.	Bushra Hassan Sultan	Department Head Office Director
2.	Prof. Shaima Khazal	Library
3.	Mays Abdul Nafi	Student Affairs
4.	Huda Talib Abboud	Registration
5.	Hassan Ali Hussein	Text-Books Distribution unit
6.	Hussein Abdul Ilah	Chemical Materials Store
7.	Amira Younus	Glassware and Equipment Store
8.	Ahmed Abdul Khaliq	Information and Follow-up Officer

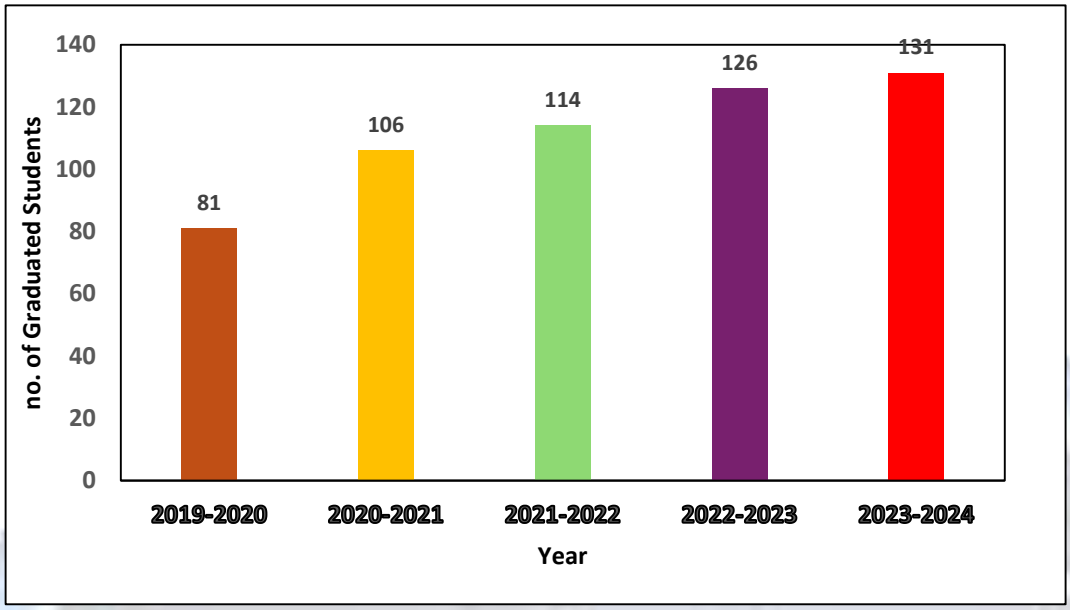
- **Numbers of Chemistry Department students for the last four years**

Fourth			Third			Second			First year			year
all	female	Male	all	Female	Male	all	female	Male	all	Female	Male	
133	84	49	138	86	52	203	150	53	127	81	46	2021-2020
124	92	32	140	86	54	203	142	61	135	91	44	2021-2022
137	86	51	185	37	48	148	83	65	227	156	71	2022-2023
185	37	48	148	83	65	227	156	71	264	195	69	2023 -2024

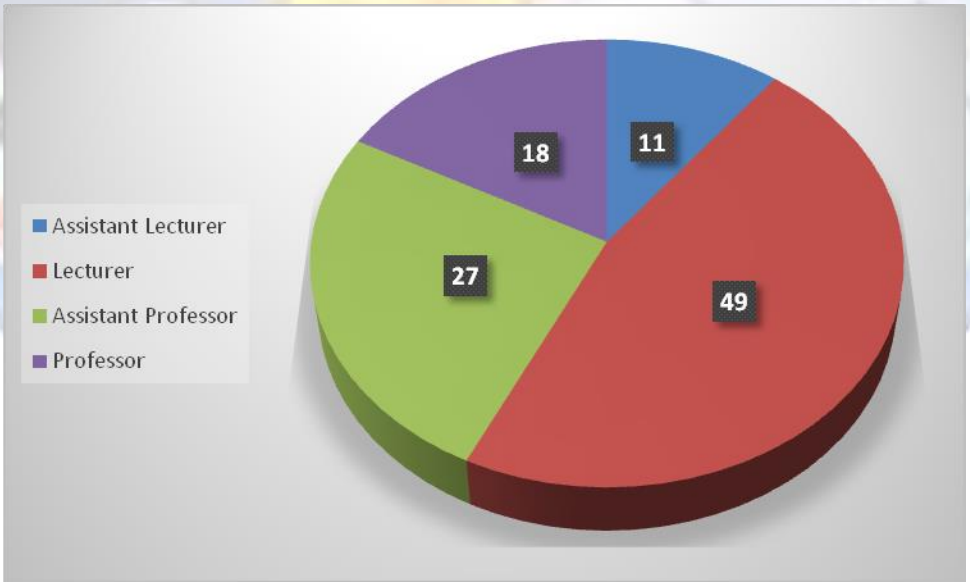


Numbers of Chemistry Department students for the last four years

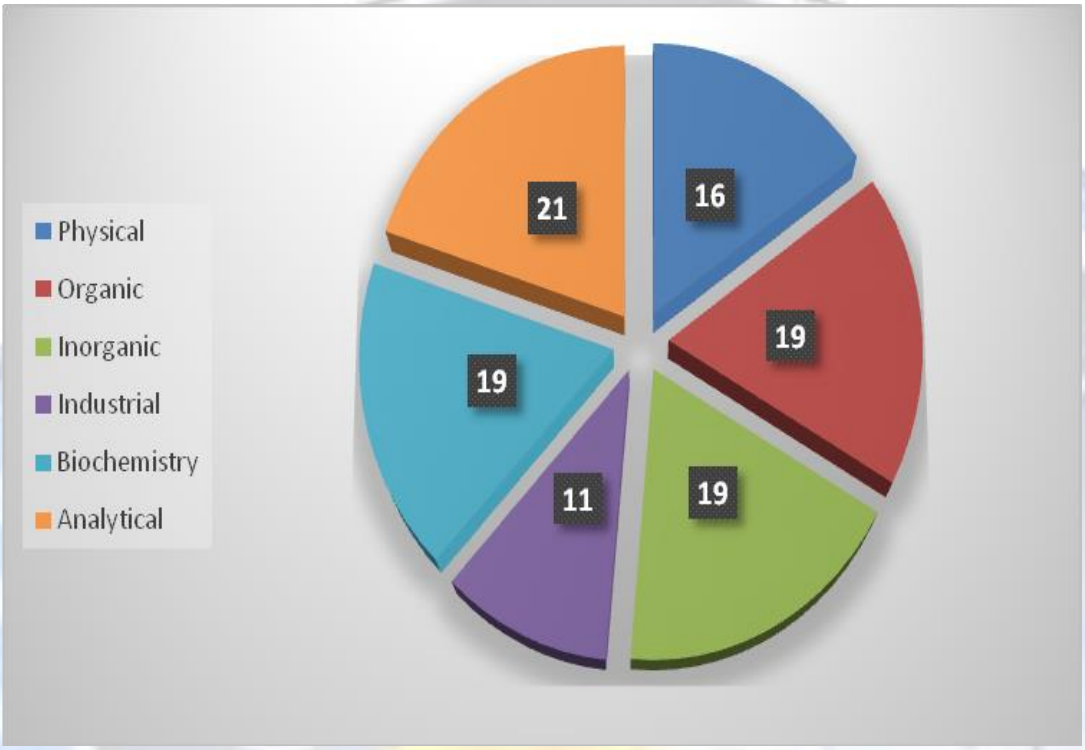
Year	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
no. of Graduated Students	81	106	114	126	131



Assistant Lecturer	Lecturer	Assistant Professor	Professor	Title
11	49	27	18	105 = Total



Physical	Organic	Inorganic	Industrial	Biochemistry	Analytical	Field
16	19	19	11	19	21	Numbers



Chapter One

Self Assessment

Program Objectives First criterion: Educational

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity: Wholly, partly, not applied	Evidence and documents
1	Strategic planning	1.1.1	There is a vision of the educational program.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		1.1.2	There is a message for the educational program.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		1.1.3	There are goals for the strategic educational program.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Strategic planning The objectives of the educational program correspond to the mission of the educational institution	1.2.1	The objectives of the educational program are connected with the mission of the faculties of Science and are well documented.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
3	The objectives of the educational program correspond to the mission of the educational institution	1.3.1	Periodic review of the objectives of the educational program with the participation of Target groups.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		1.3.2	Periodically review the objectives of the educational program and adjust them according to the requirements of the labor market.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		1.3.3	Periodically review and amend the objectives of the educational program while maintaining compliance with the mission of the educational institution.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Second criterion: The outputs of the educational program and their evaluation

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity: Wholly, partly, not applied	Evidence and documents
1	Approved learning outcomes	2.1.1	There is feedback that confirms the ability to distinguish, identify, define, formulate, and solve scientific problems by applying the principles of Science in all the scientific disciplines referred to in this manual.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.2	There is feedback confirming the ability to apply and use these Sciences in solving field problems and presenting them to society.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.3	There is feedback confirming the ability to create and implement appropriate scientific tests with quality assurance, analyze and interpret the results	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.4	There is feedback that confirms the ability to	**Existed**	**Effective**	**Wholly**	**Proved and documented**
			skillfully and smoothly communicate verbally with a group of people and write to various management levels	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.5	There is feedback that confirms the ability to realize moral and professional responsibilities towards society.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.6	There is feedback confirming the ability to work adequately within a scientific team, set goals, plan activities, meet due dates and manage risks from work.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		2.1.7	It is necessary to keep abreast of the development in the use of modern techniques, skills, and technology.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		2.1.8	Determine, enforce, and document graduation procedures so that students who graduate meet all the requirements	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Linking the learning outcomes with the objectives of the educational program	2.2.1	Linking the learning outcomes mentioned above with the objectives of the educational program announced and documented in advance by the faculties of Science and their councils	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Third criterion: curricula

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity Wholly, partly, not applied	Evidence and documents
1	The structure of the educational program and its content	3.1.1	The presence of a detailed study plan for the program clarifies the subjects, their classification, and sequence, and also clarifies the number of hours of study expected from the student for the subject.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		3.1.2	A flowchart or worksheet showing the structure of the basic requirements for the laboratories, workshops, and training required for the program should be available.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		3.1.3	The educational program meets the requirements in terms of hours and units so that it reflects the depth of study for each of the scientific disciplines referred to above.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		3.1.4	There is a description of the academic program of the course in a precise form, including a brief description of the course, learning outcomes, approved sources, and methods adopted in the course.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Linking the given curricula with the learning outcomes	3.2.1	The curriculum must be in line with the objectives of the educational program and meet the requirements of the labor market and its needs.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		3.2.2	The curriculum and the structure of the basic requirements associated with it should achieve learning results and develop the abilities and skills of graduates.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Fourth criterion: Continuous improvement

The performance indicators of this criterion are evaluated as follows

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity: Wholly, partly, not applied	Evidence and documents
1	Achieving teaching and learning outcomes	4.1.1	The presence of indicators to measure learning outcomes for all courses of the educational program	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.1.2	The presence of records documenting students 'completion of all program courses with students' theoretical and practical tests for reference when evaluating.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.1.3	The reports submitted about the program must be reviewed annually by the scientific committees and acted upon.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.1.4	Documentation and maintenance of evaluation procedures and results.	**Existed**	**Effective**	**Partly**	**Proved and documented**
2	Actions for continuous improvement	4.2.1	Document the actions taken to make improvements when problems are detected through comprehensive program evaluations, which should be conducted once every four years	**Existed**	**Effective**	**Partly**	**Proved and documented**

		4.2.2	The presence of feedback from and to all beneficiaries concerned with the outputs of the students of the undergraduate students to achieve the objectives of the educational program.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.2.3	The presence of feedback to benefit from the opinions of students and graduates on the extent to which the target learning outcomes have been achieved.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.2.4	Involve all faculty members in the program in self-evaluation processes, provided that weaknesses are identified by those responsible for the program, and take advantage of them in review processes and performance improvement.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		4.2.5	The existence of a quality management system with evidence and documentation on how to conduct a program quality assessment and improvement, how the results of improvement are re-evaluated, and how disparate results are handled.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Fifth criterion: students

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity Wholly, partly, not applied	Evidence and documents
1	Student admission	5.1.1	The existence of a wellthought-out and documented admission plan that includes the requirements to be met by students and the procedures followed.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.1.2	The actual number of Admitted Students should correspond to the planned number of students to be admitted based on the available qualified human resources (faculty and staff) and sufficient material resources (space, equipment, capacity of infrastructures).	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.1.3	Taking into account the requirements of the ministry, which affect admission and act upon.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Student Transition	5.2.1	The requirements and procedures for accepting transferred students must be ready and well documented in addition to the requirements imposed by the ministry, which affect the admission of transferred students.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.2.2	The presence of a resume of students transferred over the past five years.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		5.2.3	Determine the clearing instructions for the transfer of students to ensure compliance with the content of previous and recent educational programs and the mechanism for announcing and documenting requirements and instructions.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
3	Student performance and progress	5.3.1	Documenting the procedures for evaluating the student's performance and monitoring his progress.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.3.2	The existence of a documented mechanism to ensure that students meet the basic requirements and determine the procedures to be followed by the educational program when one of the previous requirements is not met.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.3.3	The existence of transparent, fair and consistent direct and indirect methods in the evaluation and monitoring procedures.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
4	Student activities and extracurricular activities	5.4.1	The existence of clear and announced procedures and guidelines for students related to the planning of compulsory and optional curricula.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.4.2	Students should be offered counseling in three main areas; psychological, academic, and professional.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		5.4.3	Participation in student representative entities, joint social and environmental, sports activities, and other campus activities provided to students for the development of moral awareness and character building apart from academic development.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
5	Developing students ' skills and graduation requirements	5.5.1	Training and laboratories for students to ensure obtaining the highest degrees of skill and professionalism needed by the graduate in the labor market	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.5.2	Graduation requirements must be documented and available to all students.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.5.3	There should be a clear policy for the educational program regarding the available alternative materials.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		5.5.4	Activating mechanisms to communicate with graduates and support them with the presence of an administrative formation to follow up with graduates and maintain communication with them.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Sixth criterion: Academics and teaching staff

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity Wholly, partly, not applied	Evidence and documents
1	Faculty qualifications	6.1.1	The presence of a scientific and administrative structure of faculty members and their specialties based on the vision and objectives of the educational program	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.1.2	The presence of special databases of qualifications and experience of faculty members with their CVs for each of them.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.1.3	The scientific specialization of the teaching staff must be appropriate for the courses they are studying.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.1.4	Encourage the spirit of participation to work in a team to achieve the educational program	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Workload	6.2.1	The time allocated for the educational program in terms of workload expectations and requirements should be well documented.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.2.2	The administrative and teaching duties of the teaching staff should be appropriately balanced to allow adequate participation in scientific research, applied, and fieldwork.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

3	Faculty size	6.3.1	The adequacy of the number of teaching staff should be documented.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.3.2	Determining the quality of faculty interactions with students, providing student counseling, counseling, university service activities, and professional development.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
4	Faculty development	6.4.1	Professional development activities including scientific research and contribution to postgraduate studies (if any) of each faculty member should be well documented, especially in modern teaching and learning methods, effective interactive communication, leadership and management skills, and others.	**Existed**	**Effective**	**Partly**	**Proved and documented**
5	Faculty and responsibility	6.5.1	Documenting the role played by faculty members in curriculum creation, modification, and evaluation.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.5.2	Documenting its role in defining and reviewing the educational objectives of the program.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		6.5.3	Documenting its role in achieving learning outcomes in addition to the roles of officials in the college administration.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Seventh criterion: Administrative support

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity Wholly, partly, not applied	Evidence and documents
1	Leadership, administrative services, and faculty support	7.1.1	The presence of a sufficient number of teaching staff with various scientific titles and specialties that work to implement the program with high efficiency	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.1.2	The existence of controls to attract competencies and teachers	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.1.3	Development of teaching staff	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.1.4	Support teachers to participate in scientific activities	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Technical and administrative staff support	7.2.1	Determine the size of the staff in each division and transfer the surplus to divisions or even to other faculties.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.2.2	The qualifications of managers should be consistent with their duties	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.2.3	The presence of a sufficient number of staff and administrators is commensurate with the preparation of students and teachers to provide services.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.2.4	Development of technical and administrative staff.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		7.2.5	Automation of administrative work	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Eighth criterion: Financial support

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity Wholly, partly, not applied	Evidence and documents
1	Funding resources	8.1.1	Having a financial budget to meet the requirements of implementing the academic program	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		8.1.2	The existence of a clear and documented mechanism to develop and maximize sufficient financial resources for the maintenance, modernization and operation of infrastructure, facilities, and laboratory equipment needed by the program to provide a scientific environment through which to achieve the desired goals for graduates.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Program budget	8.2.1	Allocate adequate financial support by the scientific institution to facilitate teaching and learning activities and the appropriate environment in terms of enabling students to obtain high-quality in learning outcomes well ،	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		8.2.2	Marketing the research outputs of graduate students through communication with other institutions adds additional financial sources supporting scientific research and enhancing the ability of graduates and their expertise.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		8.2.3	Provide adequate financial resources for the maintenance, modernization, and	**Existed**	**Effective**	**Wholly**	**Proved and documented**
			operation of infrastructure, facilities, and equipment suitable for the program to be well documented.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		8.2.4	Providing financial support for the development of teaching, administrative, and technical staff	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Ninth criterion: Facilities and services

The performance indicators of this criterion are evaluated as follows:

No.	Element	No.	Indicator	Existing	Effective	Degree of conformity: Wholly, partly, not applied	Evidence and documents
1	Facilities and equipment	9.1.1	Provides administrative offices, teachers, employees, technicians, and others, and their necessary equipment.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		9.1.2	The classrooms are equipped with modern supplies.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		9.1.3	Laboratories and workshops, their equipment, devices, tools, and supplies are provided that are necessary enough to achieve adequate learning results from a professional point of view and build good experiences in scientific specialization, provided that a special appendix is attached indicating the basic equipment of the basic laboratories.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		9.1.4	Smart halls are provided with their integrated physical and human requirements, which ensure the holding of lectures and video workshops in conjunction with the corresponding departments in international universities.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		9.1.5	Provides the campus infrastructure, supporting facilities and necessary equipment, such as student housing, Sports, Health and recreational centers and other requirements of the university environment.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
2	Computer equipment	9.2.1	The adequacy of the computer equipment used by the students of the program in various locations such as student dormitories, student centers, libraries and even outside the campus (terminals, servers, warehouses, networks, programs, etc.) other than those described in the paragraph of the program laboratories.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

		9.2.2	Clarify the mechanism of use by students of the educational program and the hours of its availability. And to indicate the extent of its adequacy to support the scientific and professional activities of students and teachers in the educational program, provided that this is well documented and announced to the beneficiaries	**Existed**	**Effective**	**Wholly**	**Proved and documented**
3	Student orientation and safety procedures	9.3.1	The announcement of the educational program is a mechanism to provide appropriate guidance to students regarding the use of tools, devices, equipment, and computers in laboratories and in others.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
		9.3.2	The program must ensure the safety of the facilities and equipment used for the intended purpose	**Existed**	**Effective**	**Wholly**	**Proved and documented**
			in the program, provided that this is well documented and declared to the beneficiaries.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

4	Maintenance and modernization of facilities	9.4.1	The adequacy of the policies and procedures followed for the maintenance and modernization of tools, devices, equipment, and computers in the scientific department used by students of the program and teaching staff is an important matter.	**Existed**	**Effective**	**Wholly**	**Proved and documented**
5	Library services	9.5.1		**Existed**	**Effective**	**Wholly**	**Proved and documented**
		9.5.2	The adequacy of the library services (or libraries) provided to the program's students and teachers, including the extent to which all the specialized needs of the program are covered, and the facilities provided by the library to meet the requests of teachers and students.	**Existed**	**Effective**	**Wholly**	**Proved and documented**

Chapter Two

Improvement plane

Improvement plane:

Standard 4

Weaknesses	Improvement Actions	Responsible Entity	Execution Period
Low clarity ratings for some theoretical lectures such as Biochemistry and Industrial Chemistry.	Organize periodic development workshops to enhance instructors' presentation and interaction skills, and promote the use of modern educational strategies based on motivation and active participation.	Development and Continuing Education Division in cooperation with the Scientific Department	**90 days**
Weak correlation between practical lab content and theoretical material.	Redesign laboratory experiments to align with theoretical lectures, develop lab manuals, and link them to targeted learning outcomes.	Scientific Committee and Laboratory Unit	**90 days**
Lack of readiness of some laboratory equipment, particularly in Inorganic and Industrial Chemistry.	Develop a comprehensive periodic maintenance plan, secure funding to purchase modern replacement devices, and establish a tracking system for equipment status.	Maintenance Committee and Laboratory Unit in coordination with Financial Affairs	**90 days**
Variability in pass rates across	Analyze exam results, compare question	Examination Committee in	**90 days**

semesters for the same subject.	formats, and unify grading mechanisms between semesters to reduce discrepancies.	coordination with the Department Head	
Weak implementation of analytical thinking skills in some courses.	Redesign assessment questions to include analytical and problem-solving questions requiring critical thinking.	Scientific Committee in coordination with the Department Head	**90 days**
Low clarity ratings for some theoretical lectures such as Biochemistry and Industrial Chemistry.	Organize periodic development workshops to enhance instructors' presentation and interaction skills, and promote the use of modern educational strategies based on motivation and active participation.	Development and Continuing Education Division in cooperation with the Scientific Department Head	**90 days**

Standard 6

Area	Development Strategy	Execution Period	Responsible Entity
Training Needs Assessment	Conduct regular training needs analysis based on academic performance, research output, and teaching practices; consider feedback from students and colleagues.	Department of Chemistry, College of Science, University of Mosul	90 days
Professional and Educational Development	Organize workshops and training sessions on: modern teaching strategies (active learning, interactive education); using technology in teaching (e.g., LMS); evaluating learning outcomes and academic quality control; encourage faculty to obtain professional teaching certifications.		
Scientific Research Enhancement	Provide financial and moral support for research through internal and external funding; build research partnerships with local and international universities and centers; organize departmental seminars and conferences; encourage publishing in peer-reviewed journals and applied research.		
Self and Leadership Development	Promote participation in academic leadership programs; provide opportunities to engage in college and university committees; encourage self-learning via platforms		

	such as Coursera.
Recognition and Motivation	Establish reward and recognition systems for outstanding faculty in teaching or research; foster positive competition and experience sharing within the department.
Academic Environment Enhancement	Improve lab and research infrastructure; reduce administrative burdens on faculty to allow more focus on development; promote a culture of teamwork and collaboration.

Chapter Three

Conformity and Readiness Report

Institution Information

Department Name	Chemistry Department / College of Science
Type	Public Educational Institution
Established	1963
Start of Academic Activities	1/9/1963
Website	https://uomosul.edu.iq/science
Address	Nineveh / Mosul / Cultural Group

Vision, Mission, and Objectives of the Institution:

Vision.

The Chemistry Department strives to be at the forefront of scientific departments that contribute to the development of scientific and technical competencies. It aims to become one of the leading and advanced departments in the fields of education and scientific research by creating a robust educational environment based on modern scientific curricula that combine fundamentals with continuous progress toward serving society and sustainable development. The department also seeks to qualify chemistry graduates to compete in the job market, enabling students to explore new horizons in science and develop innovative solutions to contemporary challenges. We believe that education should be a catalyst for change, and that graduates of the Chemistry Department will be leaders in their fields, keeping pace with the remarkable advancements in scientific and technical research, while fostering a culture of creativity and innovation in the field of chemistry. We are committed to meeting the high demands of the job market.

Mission.

The Chemistry Department is committed to providing a unique educational experience aimed at equipping students with the knowledge and practical skills necessary to address diverse scientific challenges. The department also seeks to prepare students academically and practically in all areas of chemistry, enabling graduates to become pioneers in their fields. This is achieved by enhancing their ability for scientific thinking and innovative problem-solving, contributing to sustainable development and supplying the job market

with qualified scientific personnel specialized in chemistry and trained in modern techniques.

Objectives.

The Chemistry Department aims to achieve the following objectives:

1. **Fostering Innovation:** Enabling students to identify and formulate scientific problems in new and unconventional ways, enhancing their skills in innovation and scientific thinking.
2. **Bridging Theory and Practice:** Providing students with opportunities to apply scientific knowledge in real-world situations, equipping them to effectively tackle field challenges.
3. **Improving the Quality of Scientific Research:** Teaching students how to design and conduct innovative scientific experiments, with a focus on comprehensive analysis of results and scientifically supported conclusions.
4. **Enhancing Creative Communication Skills:** Developing students' skills in effective communication, both verbally and in writing, using new methods that allow them to express their ideas clearly and persuasively.
5. **Promoting Ethical Awareness:** Instilling a sense of ethical and professional responsibility in students, emphasizing the importance of adhering to ethical principles in all their scientific activities.
6. **Encouraging Effective Teamwork:** Fostering a spirit of collaboration and teamwork among students, enabling them to set common goals and plan activities innovatively.
7. **Integrating Modern Technology:** Promoting the use of modern technologies in teaching and learning, enabling students to leverage advanced technological tools, including information technology, in their scientific and applied fields to achieve sustainable development goals.

Learning Outcomes.

1. **Ability to Identify Scientific and Practical Problems:** Students can recognize and clearly define various scientific and practical problems, using appropriate scientific concepts.
2. **Application of Scientific Knowledge:** Students can apply scientific principles to solve field problems, demonstrating the ability to provide effective solutions that meet societal and sustainable development needs.
3. **Conducting Scientific and Practical Tests:** Students acquire the skills to design and implement scientific tests in theoretical and practical aspects, ensuring quality, and can analyze and interpret results accurately.
4. **Effective Communication Skills:** Students can communicate smoothly and effectively, both verbally and in writing, with diverse groups and administrative levels.
5. **Ethical and Professional Awareness:** Students possess a deep understanding of ethical and professional responsibilities and demonstrate a clear commitment to society in all their scientific activities.
6. **Teamwork:** Students can work effectively in scientific teams, with the ability to set common goals, plan activities, and manage risks.
7. **Keeping Pace with Technological Advancements:** Students acquire the necessary skills to keep up with developments in modern technologies, enabling them to use technological tools effectively in their fields.

Final Self-Assessment Summary Table (or Readiness Report)

No.	Standard	No.	Item	Present	Effective	Degree of Compliance Fully, Partially, Not Applied	Evidence and Documents
1	Educational Program Objectives	1	Strategic Planning	Present	Effective	Fully	**Available and Documented**
		2	Alignment of Educational Program Objectives with the Mission of the Educational Institution	Present	Effective	Fully	**Available and Documented**
		3	Review Process of Educational Program Objectives	Present	Effective	Fully	**Available and Documented**
2	Educational Program Outcomes and Evaluation	1	Approved Learning Outcomes	Present	Effective	Fully	**Available and Documented**
		2	Linking Learning Outcomes with Educational Program Objectives	Present	Effective	Fully	**Available and Documented**
3	Curriculum	1	Program Structure and Content	Present	Effective	Fully	**Available and Documented**
		2	Linking Given Curricula with Learning Outcomes	Present	Effective	Fully	**Available and Documented**
4	Continuous Improvement	1	Achieving Teaching and Learning Results	Present	Effective	Partially	**Available and Documented**
		2	Procedures for Continuous Improvement	Present	Effective	Partially	**Available and Documented**
5	Students	1	Student Admission	Present	Effective	Fully	**Available and Documented**
		2	Student Transfer	Present	Effective	Fully	**Available and Documented**
		3	Student Performance and Progress	Present	Effective	Fully	**Available and Documented**
		4	Student Activities and Extracurricular	Present	Effective	Fully	**Available and**

			Activities				**Documented**
		5	Student Skills Development and Graduation Requirements	Present	Effective	Fully	**Available and Documented**
6	Academics and Lecturers	1	Faculty Qualifications	Present	Effective	Fully	**Available and Documented**
		2	Workload	Present	Effective	Fully	**Available and Documented**
		3	Size of the Teaching Staff	Present	Effective	Fully	**Available and Documented**
		4	Academic Staff Development	Present	Effective	Partially	**Available and Documented**
		5	Academic Staff and Responsibility	Present	Effective	Fully	**Available and Documented**
7	Administrative Support	1	Leadership, Administrative Services, and Academic Staff Support	Present	Effective	Fully	**Available and Documented**
		2	Technical and Administrative Staff Support	Present	Effective	Fully	**Available and Documented**
8	Financial Support	1	Funding Resources	Present	Effective	Fully	**Available and Documented**
		2	Program Budget	Present	Effective	Fully	**Available and Documented**
9	Facilities and Services	1	Facilities and Equipment	Present	Effective	Fully	**Available and Documented**
		2	Computer Equipment	Present	Effective	Fully	**Available and Documented**
		3	Student Guidance and Safety Procedures	Present	Effective	Fully	**Available and Documented**
		4	Maintenance and Upgrading of Facilities	Present	Effective	Fully	**Available and Documented**
		5	Library Services	Present	Effective	Fully	**Available and Documented**


Chemistry Department
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