University of Mosul
College of Science
Chemistry Department

Program Catalogue
2024-2025

First Cycle – Bachelor's degree (B.Sc.) – Chemistry

University of Mosul
College of Science
Chemistry Department

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1. About the Department

The Department of Chemistry in the College of Science offers a four-year academic program leading to a Bachelor's degree in General Chemistry. This program is designed to provide students with a solid scientific and methodological foundation that enables them to keep pace with technological advancements in scientific research and contribute effectively to both the public and private sectors, such as the Ministry of Health.

Through this program, students develop a comprehensive understanding of chemical knowledge, concepts, and practical skills. A variety of teaching and learning methods are employed, including lectures, interactive sessions, educational programs, guided reading sessions, seminars, and workshops. These formats encourage student engagement in scientific discussions and hands-on learning. Additionally, long-term projects and practical lessons are integrated into the curriculum to reinforce applied understanding of chemical principles.

The department is also equipped with specialized laboratories featuring instruments such as Atomic Absorption Spectroscopy (AAS), Fourier-Transform Infrared Spectroscopy (FTIR), and Ultraviolet (UV) Spectroscopy. These facilities support

graduate students (Master's and Ph.D. levels) in analyzing and identifying their chemical compounds with precision.

Academic Degrees Offered by the Department of Chemistry

Bachelor's Degree in General Chemistry:

The Bachelor's program spans four academic years, divided into eight semesters. To earn a Bachelor's degree in General Chemistry, students must successfully complete all eight semesters.

Master's Degree in Chemistry:

The Master's program is structured into two main phases:

- **Preparatory Phase (First Year):**
  This phase consists of two semesters. The first semester covers core courses, including Analytical Chemistry, Biochemistry, Physical Chemistry, Organic Chemistry, and Inorganic Chemistry. The second semester focuses on specialized subjects within particular fields, along with some elective courses.
- **Research Phase (Second Year):**
  During this calendar year, the student conducts a scientific research project in either a theoretical or applied chemistry discipline. The program culminates in a thesis defense before a specialized committee, which evaluates the student's eligibility for the degree.

Doctoral Degree in Chemistry:

The PhD program is also divided into two phases:

- **Preparatory Phase:**
  This includes two semesters. The first semester covers foundational courses similar to those in the Master's program, while the second semester offers advanced specialized and elective courses.
- **Research Phase:**
  Progression to this phase requires passing a comprehensive examination after the completion of the preparatory phase. This research stage lasts no less than two years, during which the student undertakes original research. The program concludes with the submission and defense of a doctoral dissertation before a panel of experts.

2. Mission & Vision Statement

Mission and Vision Statmente

The Department of Chemistry strives to lead the advancement of chemical sciences toward a sustainable future by focusing on cutting-edge fundamental research in the design of novel materials and chemical processes. Our goal is to graduate students who are not only scientifically competent and technologically skilled but also disciplined, well-mannered

individuals who serve as exemplary citizens. We are committed to cultivating knowledgeable thinkers with empathy and a strong sense of responsibility, capable of contributing to the development of a strong and progressive nation.

Vision Statement

We envision a future shaped by dedicated educators employing effective teaching methodologies to disseminate modern technological knowledge and education. Our goal is to nurture young minds into morally and professionally upright adults, thereby enhancing productivity and value-based living standards through ethical and rational strategies. The Department of Chemistry aspires to lead the field toward a sustainable future by emphasizing key areas of fundamental research, including the discovery and design of new materials and chemical processes. By integrating teaching, research, and personal growth across the curriculum, we aim to transform the student experience.

Mission Statement

A primary objective of the college is to prepare students academically and scientifically in alignment with the demands of scientific advancement, particularly in the fundamental sciences that form the basis of our understanding of the universe. The mission of the Department of Chemistry is to equip students professionally and scientifically through a rigorous academic program tailored to their educational needs and skill development. Committed to promoting human health, the department paves the way for the exploration of potential therapies. Advances in diagnostics and mechanistic understanding are driven by the development of innovative tools for investigation and diagnosis.

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3. Program Specification

Program code:	BSc-Che	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

4. Educational and Program Goals

1. Offer chemistry majors' current curriculum in each of the five major sub-disciplines of chemistry: organic, inorganic, physical, analytical, and biochemistry to give them a solid foundation in each field.
2. Give biochemistry majors a solid foundation in organic, analytical, and biochemistry while placing an emphasis on the intersection of chemistry and biology.
3. Give students hands-on lab and research experiences that are pertinent to their studies of chemistry while also instructing them in safe, ethical laboratory procedures.
4. Give students the chance to learn about the chemical industries, careers, and daily duties of working chemists and biochemists.
5. By highlighting the interdisciplinary character of chemistry and utilizing concrete examples to highlight links between it and other scientific disciplines, you may give pupils a more comprehensive understanding of the subject.

5. Program Objectives

1. Introduce learners to the main subfields of chemistry.
2. Assist students in understanding fundamental chemical principles.
3. Provide students with a strong foundation for a rewarding career in chemistry.
4. Help develop analytical, quantitative, and critical thinking skills in chemistry.
5. Enable students to acquire laboratory knowledge and skills by engaging them in diverse chemical processes.
6. Enhance students' ability for self-directed learning.
7. Support students in gaining a deeper understanding of the theories underlying chemical concepts.
8. Prepare advanced degree scientists capable of supervising industrial projects.
9. Graduate experienced scientific personnel qualified to manage universities and research institutions both scientifically and administratively

Student Learning Outcomes:

The Department of Chemistry aims to prepare qualified professional and academic personnel capable of contributing effectively to various vital sectors of the country, particularly in medical, agricultural, and industrial fields. The program is designed to provide students with a solid foundation in the main branches of chemistry, while enhancing their intellectual and research skills and enabling them to keep pace with modern technological advancements. Emphasis is also placed on familiarizing students with contemporary scientific software and technologies to strengthen their ability to apply theoretical knowledge in practical settings.

Upon completion of this program, students will be able to:

1. Demonstrate an understanding of the fundamental principles across various fields of chemistry, including organic, inorganic, physical, analytical, petrochemical, and biochemistry.
2. Employ modern scientific methods and software tools in data analysis and chemical research.
3. Apply theoretical knowledge and acquired skills to solve scientific problems in medical, agricultural, or industrial contexts.
4. Develop scientific research capabilities and critical thinking aligned with contemporary scientific and technological advancements.
5. Work effectively within multidisciplinary teams and communicate proficiently in academic and scientific environments.

6. 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	Chemistry	Physical Chemistry

		Prof.		
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

7. Credits, Grading and GPA

Credits

College of Science, 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:

Group	Grade	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	90 - 100	Outstanding Performance
	B - Very Good	80 - 89	Above average with some errors
	C - Good	70 - 79	Sound work with notable errors
	D - Satisfactory	60 - 69	Fair but with major shortcomings
	E - Sufficient	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	(45-49)	More work required but credit awarded
	F – Fail	(0-44)	Considerable amount of work required

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:

CGPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 24

8. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE1101	Fundamentals of Analytical Chemistry and Qualitative Analysis	109	66	7.00	C	
CHE1102	Fundamentals of inorganic chemistry	79	71	6.00	C	
CHE1103	Physics	109	66	7.00	S	
UoM104	Democracy and Human Rights	34	16	2.00	B	
CHE1104	Chemical Security and Safety	79	71	6.00	C	
UoM101	Arabic Language	34	16	2.00	B	

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Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE1215	Volumetric Analytical Chemistry	109	91	8.00	C	CHE1101
CHE1216	Ionic Compounds and Periodic table	109	91	8.00	C	CHE1102
Sci-101	Mathematics	34	16	2.00	B	
CHE1207	Geology	94	81	7.00	S	
UOM103	Computer	49	26	3.00	B	
UoM102	English Language	34	16	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE2308	Gravimetric Analysis Chemistry	94	56	6.00	C	
CHE2309	Chemistry of Representative Elements	94	56	6.00	C	
CHE23010	Thermodynamics	94	56	6.00	C	
CHE23011	Organic Chemistry 1	109	66	7.00	C	
CHE23012	Mathematics and Statistics	49	26	3.00	S	
U0M201	Baath Party crimes in Iraq	34	16	2.00	B	

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE24013	Classical Separation Methods	79	71	6.00	C	
CHE24014	Solid State Chemistry	94	56	6.00	C	
CHE24015	Phase equilibrium	94	56	6.00	C	
CHE24016	Organic Chemistry 2	94	56	6.00	C	
CHE24017	Nanochemistry	34	41	3.00	C	
CHE24018	Chemistry Software	49	26	3.00	C	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE35019	Coordination Chemistry 1	94	56	6.00	C	
CHE35020	Chemical Kinetics	94	56	6.00	C	
CHE35021	Organic Chemistry 3	94	56	6.00	C	
CHE35022	Principles of Biochemistry	94	56	6.00	C	
CHE35023	Industrial Chemistry and Pollution	49	51	4.00	C	
CHE35024	Elective 1(Heterocyclic -colloids - cytology)	19	31	2.00	E	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE36025	Coordination Chemistry 2	4	79	6.00	C	
CHE36026	Electrochemistry and Surface chemistry	4	109	6.00	C	
CHE36027	Organic Chemistry 4	4	94	6.00	C	
CHE36028	Biomolecules	4	94	6.00	C	
CHE36029	Application of Industrial Chemistry	4	49	4.00	C	
CHE36030	Scientific Research Methodology	4	19	2.00	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE47031	Instrumental Analysis	94	56	6.00	C	
CHE47032	Identification of Organic Compounds	79	71	6.00	C	
CHE47033	Metabolism of Carbohydrates	94	56	6.00	C	
CHE47034	Petroleum Chemistry and Petrochemicals	94	56	6.00	C	
CHE47035	Quantum Chemistry	64	36	4.00	C	
CHE47036	Elective 2(Reaction mechanics - clinical chemistry)	19	31	2.00	E	

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE48037	Chromatographic Methods	4	94	6.00	C	
CHE48038	Application of Organic Spectrum	4	79	6.00	C	
CHE48039	Metabolism of Lipids and proteins	4	79	6.00	C	
CHE48040	Polymers: Fundamentals and applications	4	94	6.00	C	
CHE48041	Spectroscopy	4	64	4.00	C	
CHE48042	Research Project	3	33	2.00	C	

9. Contact

Program Manager:

Salim Jasim Mohammed **07740871740** **salimjmohamed@uomosul.edu.iq**

Program Coordinator:

Imad younus Hasan **7518294498** **imad.younus@uomosul.edu.iq**

التوقيع:

أ.د. سالم جاسم محمد صالح

دقق الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مدير شعبة ضمان الجودة والأداء الجامعي: د. محمود عبد الحق