

University of Baghdad

جامعة بغداد



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

بكالوريوس علوم - علوم الكيمياء



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1. **Mission & Vision Statement**

Vision Statement

The chemistry academic staff of the College of Science for Women at Baghdad University believes that students come to understand the discipline of chemistry through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by chemists to make observations, develop insights and create theories about the chemical reactions that control our live. Small class sizes within the chemistry program foster a close working relationship between academic staff and students in an informal and nurturing atmosphere.

Mission Statement

The chemistry academic staff pursues a multifaceted charge at Baghdad University. The Program seeks to provide all chemistry students with fundamental knowledge of chemistry, as well as a deeper understanding of a selected focus area within the chemical sciences. The curriculum and advising have been designed to prepare graduates for their professional future, whether

they choose to work as field chemists specializing in different fields of chemistry, or to pursue advanced degrees in organic, inorganic chemistry. The chemistry program also provides the necessary fundamental knowledge of the chemistry sciences to support the biochemistry, the organic studies, the inorganic studies, and industrial technology. In addition, chemistry courses provide a key laboratory science experience for those students seeking to complete the general education requirements

2. **Program Specification**

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

Chemistry is a wonderfully wide-ranging subject and is well equipped to deliver. The emphasis of the programme is the whole materials to which everything is related, be it the molecules of materials and their reactions. The degree is popular or some it's' the breadth of the subject that appeals, for others it's a path to specialization. All students have the opportunity to transfer onto our specialist degrees in inorganic chemistry, analytical chemistry, and principle subjects at the end of the first year.

Level 1 exposes students to the fundamentals of Chemistry, suitable for progression to all programmers within the chemistry programmer group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. The University Chemistry graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the important of chemistry from organic chemistry, through inorganic chemistry and biochemistry, to students to ensure the breadth of knowledge expected of a graduate with a chemistry degree. This allows students to develop their own

wide-ranging interests in different fields of chemistry. Decisions on what to study are made with input from personal tutors.

The research ethos is developed and fostered from the start via practicals, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Levels 2, 3 and 4. At Level 4 all students carry out an independent research project, which may be a xx credit library or data analysis project, or a xx credit field or laboratory based project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

3. Program Objectives

- 1.To provide a comprehensive education in chemistry that stresses scientific reasoning and problem solving across the spectrum of disciplines within chemistry
- 2.To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of chemistry
- 3.To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques
- 4.To provide thorough training in written and oral communication of scientific information

5.To enrich students with opportunities for alternative education in the area of chemistry through undergraduate research, internships, and study-abroad.

4. Student Learning Outcomes

Chemistry is the study of the molecules science including their reactions and applications in different fields of life. Graduates obtain information on the historical, technical and social aspects of chemistry and utilize basic knowledge toward realizing broader concepts. The Department offers a Bachelor of Science in Chemistry with a concentration in General Chemistry; and a minor in Secondary Education that leads to a Public Instruction License. Additionally, the Department offers courses to a large number of students from other departments and supports pre-professional programs. The chemistry curriculum and experiences are designed to prepare students, in part, for entry into professional health programs, graduate studies, technical careers and education

Outcome 1

Identification of Complex Relationships

Graduates will be able to illustrate the reactions of molecules and explain how they can be applicable in different fields of life.

Outcome 2

Oral and Written Communication

Graduates will be able to formally communicate the results of chemical investigations using both oral and written communication skills.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Scientific Knowledge

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 5

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6

Critical Thinking

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

The University of Baghdad 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)

- 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
CHE 1101	Qualitative Analytical Chemistry	109	91	8.00	C	
CHE 1102	Inorganic Chemistry I	63	137	8.00	C	
CHE 1103	Chemical Safety and Security	33	67	4.00	B	
COS 1104	General Physics	64	86	6.00	B	
UOB 1105	Arabic Language I	33	17	2.00	B	
UOB 1106	Democracy and Human Rights	33	17	2.00	B	

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 1217	Volumetric Analytical Chemistry	109	91	8.00	C	CHE 1101
CHE 1218	Inorganic Chemistry II	63	137	8.00	C	CHE 1102
COS 1209	Cytology	64	11	4.00	B	

COS 12010	Mathematics I	63	12	6.00	S	
COS 12011	Geology	64	11	2.00	B	
UOB 12012	Computer I	62	13	2.00	B	

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 23114	Gravimetric Analytical Chemistry	94	56	6.00	C	CHE 1217
CHE 23115	Inorganic Chemistry III	63	87	6.00	C	CHE 1218
CHE 23016	Organic Chemistry I	63	112	7.00	C	
CHE 23017	Thermodynamic	94	56	6.00	C	
UOB 23118	Computer II	62	13	3.00	B	UOB 12012
UOB 23019	The Crimes of the Baath Regime in Iraq	33	17	2.00	B	CHE 1217

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 24120	Separation Techniques	63	87	6.00	C	CHE 23114
CHE 24121	Inorganic Chemistry IV	94	56	6.00	C	CHE 23115
CHE 24122	Organic Chemistry II	94	56	6.00	C	CHE 23116
CHE 24123	Chemistry of Solutions	63	87	6.00	C	CHE 23117
COS 24124	Mathematics II	33	17	2.00	S	COS 12010
UOB 24125	Arabic Language II	33	17	2.00	B	UOB 1105

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 35127	Inorganic Chemistry V	94	56	6.00	C	CHE 24121
CHE 35128	Organic Chemistry III	94	56	6.00	C	CHE 24122
CHE 35129	Kinetic Chemistry	63	87	6.00	C	CHE 24123
CHE 35130	Biochemistry I	94	56	6.00	C	CHE 24122
CHE 35031	Industrial Chemistry	48	27	3.00	C	
CHE 35032	Nanochemistry	33	42	3.00	C	

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 36133	Inorganic Chemistry VI	63	87	6.00	C	CHE 35127
CHE 36134	Organic Chemistry IV	63	87	6.00	C	CHE 35128
CHE 36135	Electrochemistry	94	56	6.00	C	CHE 35129
CHE 36136	Biochemistry II	94	56	6.00	C	CHE 35130
CHE 36037	Elective Topic I	64	61	5.00	E	
COS 36038	Research Methodology	18	7	1.00	B	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 47139	Instrumental Analysis I	79	46	5.00	C	CHE 24120
CHE 47140	Organic Identification	94	56	6.00	C	CHE 36134
CHE 47141	Quantum Chemistry	63	62	5.00	C	CHE 35128
CHE 47142	Biochemistry III	94	56	6.00	C	CHE 36135
CHE 47143	Petrochemistry and Polymer I	48	77	5.00	C	CHE 36133
UOB 47144	Research Project I	48	27	3.00	C	COS 36037

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs.

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CHE 48145	Instrumental Analysis II	79	71	6.00	C	CHE 47139
CHE 48046	Spectroscopy	63	62	5.00	C	
CHE 48147	Biochemistry IV	94	56	6.00	C	CHE 47142
CHE 48148	Petrochemistry and Polymer II	109	41	6.00	C	CHE 47143
CHE 48149	Elective Topic II	33	67	4.00	E	CHE 36037
UOB 48150	Research Project II	33	42	3.00	C	UOB 47144

8. Contact

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