

Al-Baha University

Faculty of Science

Bachelor's Degree in Chemistry

Program Handbook



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Introduction

The Faculty of Science at Al-Baha University was established by Royal Decree No. 9682/M, dated 5/8/1426 H. It began its academic activities in 1427 H with the aim of effectively contributing to expanding the higher education base in the Kingdom of Saudi Arabia in the fields of basic and applied sciences and meeting the needs of the public and private sectors' job market. Currently, the Faculty of Science at Al-Baha University has developed study programs to equip students with scientific and practical skills and knowledge, primarily focusing on the use of modern technology in four main departments: Chemistry, Mathematics, Physics, and Chemistry. These programs aim to qualify graduates for employment in governmental and private institutions in the provinces.

The Chemistry Department offers a bachelor's degree in Chemistry and provides numerous career opportunities in teaching, healthcare, industrial research centers, and environmental sectors. Students also have the opportunity to pursue postgraduate studies and conduct research in various areas of life sciences. We are pleased to present this Handbook, which contains information about the program.



Faculty Vision

A distinguished faculty in basic sciences education and scientific research to serve the community.

Faculty Mission

Providing distinguished educational and research programs in basic sciences to prepare graduates that contribute the community service through motivating academic environment and efficient use of the resources.

Faculty Objectives

1. Creating an excellent academic environment to enhance the competitiveness of faculty students.
2. Achieving excellence among the faculty staff.
3. Developing and improving the faculty's scientific research infrastructure
4. Establishing postgraduate programs that are in line with labor market demands.
5. Developing and improving faculty community service activities.
6. Contributing to the development of the university's resources.



Program Vision

Distinguished Chemistry Program, both educationally and in research, aimed at contributing to community service.

Program Mission

Providing a distinguished educational program in chemistry to prepare qualified graduates who can meet labor market demands and serve the community through a stimulating academic environment and scientific research.

Program Objectives

1. Providing students with the necessary scientific knowledge and practical skills in the field of chemistry.
2. Preparing scientifically and professionally qualified graduates of the program to meet the requirements of the labor market in the field of chemistry.
3. Providing a stimulating environment to achieve academic and research excellence.
4. Enhancing the system of scientific research and innovation in the chemical sciences.
5. Contributing to the enhancement and development of community service programs and sustainable development.



Program Learning Outcomes

Knowledge and understanding	
K1	Define the concepts, terms and basic principles in Chemistry.
K2	Recall symbols, formulas and chemical equations.
K3	Explain key principles, laws and theories related to chemistry.
Skills	
S1	Use laws and calculations in solving chemical problems.
S2	Apply scientific thinking in providing innovative solutions to the chemical challenges.
S3	Use different techniques and methods in chemical analysis and interpretation of results.
S4	Conduct laboratory experiments safely using different techniques.
Values, Autonomy, and Responsibility	
V1	Bear self-learning responsibility, decision making and ability of serving the community.
V2	Adhere in writing scientific reports and using different techniques to collect and analyze information and presenting it to others.
V3	Cooperate effectively with his colleagues in teamwork.



Professions/jobs for which students are qualified

The labor market for holders of Bachelor's degree in Chemistry is expanding day by day, opening doors to many career opportunities. The program offered by the Faculty of Science at Al-Baha University is designed to equip male and female students with the technical and professional skills they need to become successful and distinguished in their fields of work.

There are many career fields available to graduates holding a Bachelor of Science degree in Chemistry, including:

- Environmental Protection Inspector (325702)
- Practicing Teacher (23300102)
- Water Quality Specialist (213303)
- Environmental Protection Specialist (226301)
- Scientific Laboratory Specialist (213112)
- Industrial Chemist (211302)
- Medical Laboratory Specialist (13115)
- Science Laboratory Technician (311907)
- Academic Researcher (235906)
- Water Chemist (21111044)
- Teaching Assistant (2310111)



Program's Graduate Attributes

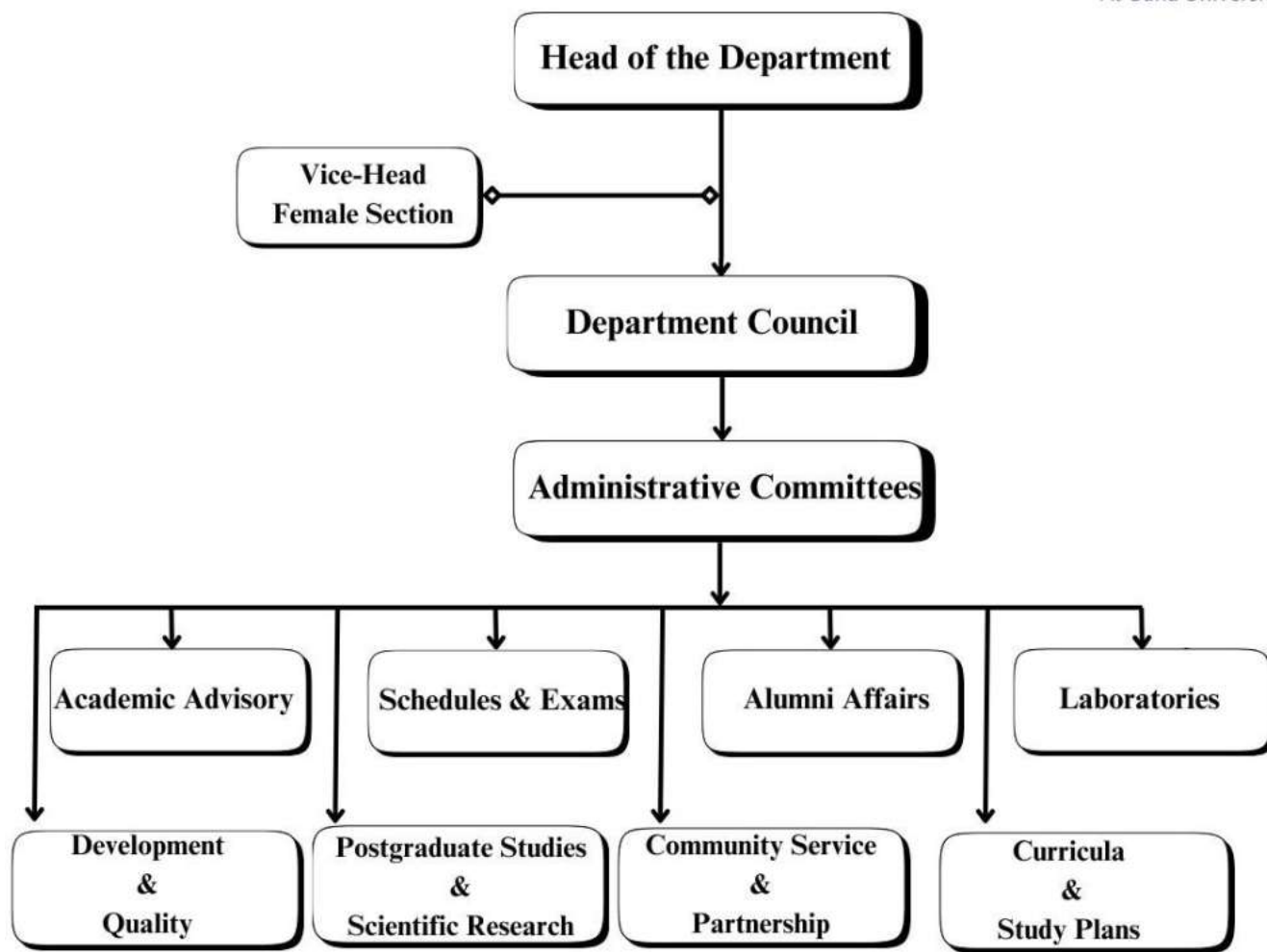
Chemistry program adopted same university's graduate attributes. The following table illustrates University Graduate Attributes with correspondent codes.

Program's Graduate Attributes	
Code	Description
PGA1	Critical thinking and problem solving
PGA2	Creativity and innovation
PGA 3	Collaboration and teamwork
PGA 4	Communication skills
PGA 5	Information technology and proficiency skills
PGA 6	Information skills
PGA 7	Flexibility and adaptability
PGA 8	Initiative sand self-direction skills
PGA 9	Productivity skills



Program Organizational Structure

Organizational Structure



Administrative committee

First: Schedules and Exams Committee

Its tasks are as follows:

- Preparing class schedules and examination timetables for each academic semester in coordination with the relevant departments.
- Distributing courses in a manner that ensures transparency and fairness among faculty members.
- Announcing class schedules and examination timetables to receive and address feedback.
- Following up on any amendments to class schedules and exam timetables and finding appropriate solutions.
- Allocating classrooms and exam halls according to the number of students and the nature of the courses.
- Preparing lists of exam invigilators and assigning them to committees to ensure proper conduct of examinations.
- Monitoring the progress of examinations on site and addressing any urgent issues.
- Documenting all procedures related to class schedules and examination timetables.

Second: Laboratories Committee

Its tasks are as follows:

- Identifying laboratory needs and regularly monitoring their readiness.
- Supervising the operation and maintenance of equipment and ensuring its functionality.
- Preparing schedules for laboratory technicians/assistants for each academic semester.
- Establishing guidelines and instructions for the proper use of laboratories to ensure safety and security.
- Ensuring compliance with public health, safety, and occupational standards inside laboratories.
- Providing manuals for using experiments, equipment, and materials.
- Training technicians and students on the proper use of laboratory tools and materials.
- Preparing awareness materials on safety procedures inside laboratories.
- Documenting all procedures and data related to laboratories.

Third: Alumni Affairs Committee

Its tasks are as follows:

- Creating a comprehensive and updated database of graduates and their fields of employment.



- Maintaining continuous communication with alumni and employers through various means (website – email – meetings).
- Organizing activities and meetings with alumni to support them and gather their feedback.
- Preparing career guidance programs and workshops to develop graduates' skills in line with labor market needs, in coordination with the Deanship of Admission and Registration.
- Documenting all procedures and collecting data related to alumni.

Fourth: Academic Advisory Committee

Its tasks are as follows:

- Conducting orientation sessions for newly admitted students.
- Publishing academic advising guides and awareness materials.
- Educating students about academic regulations, rules, rights, and university responsibilities.
- Monitoring the performance of academic advisors and ensuring they fulfil their duties toward students.
- Identifying outstanding students, academically struggling students, and students with disabilities, and providing appropriate support in coordination with relevant entities.
- Organizing programs and workshops to enhance self-confidence and develop time-management skills.
- Documenting all procedures and data related to academic advising and guidance.

Fifth: Curricula and Study Plans Committee

Its tasks are as follows:

- Preparing study plan guides and course specifications.
- Proposing new academic programs that meet community and labor market needs.
- Reviewing and updating study plans regularly according to labor market requirements.
- Following up on improvement plans included in course reports.
- Reviewing course specifications and learning outcomes to ensure alignment with quality standards and accreditation requirements issued by the Education and Training Evaluation Commission.
- Documenting all procedures and data related to curricula and study plans.

Sixth: Community Service and Partnership Committee

Its tasks are as follows:

- Developing a timeline for activities and programs that can be offered to the community.



- Strengthening partnerships between the department and governmental, private, and charitable sectors through cooperative training.
- Proposing community initiatives that contribute to addressing community issues and promoting development.
- Organizing events and activities that serve the community in collaboration with relevant entities.
- Evaluating the participation of students and faculty in community service programs and measuring the satisfaction of beneficiary organizations.
- Highlighting the department's role in national and international occasions (Foundation Day – National Day – Flag Day – International Days).
- Documenting all procedures and data related to community partnership and service.

Seventh: Graduate Studies and Scientific Research Committee

Its tasks are as follows:

- Conducting orientation sessions for postgraduate students regarding regulations and policies.
- Organizing regular courses and workshops to develop research skills.
- Introducing new postgraduate programs that meet community and labor market needs.
- Monitoring the implementation of postgraduate programs and ensuring their alignment with development and quality requirements.
- Reviewing research proposals and theses plans and recommending supervisors.
- Following up on the affairs of sponsored/externally funded students in coordination with the College Vice-Deanship for Graduate Studies, Research, Innovation, and Quality.
- Monitoring the progress of postgraduate students and addressing challenges they face.
- Developing a departmental research plan aligned with university priorities and national directions.
- Proposing mechanisms to encourage research, creativity, and innovation.
- Tracking and updating the department's research output and citation rates regularly.
- Reviewing applications for academic appointments, promotions, and excellence awards for faculty members.
- Documenting all procedures and data related to graduate studies and scientific research.

Eighth: Development and Quality Committee

Its tasks are as follows:

- Promoting quality and academic accreditation culture by organizing meetings and workshops in relevant fields.



- Following up on the timeline for development, quality, and program accreditation processes issued by the Deanship of Development and Quality.
- Supervising the update and revision of course and program specifications and reports.
- Developing operational plans for academic programs, monitoring their indicators, and setting improvement plans.
- Collecting and analysing program performance indicators regularly.
- Communicating with departmental committees to gather necessary data for the annual report.
- Following up on updates to academic and administrative policies and procedures in accordance with quality standards.
- Documenting all procedures and data related to quality and accreditation activities.



Study plan

Curriculum structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Contact Hours	Percentage
Institution Requirements	Required	6	12	12	8%
	Elective	-	-	-	-
College Requirements	Required	5	19	25	13%
	Elective	-	-	-	-
Program Requirements	Required	36	107	125	71%
	Elective	3	9	9	6%
Capstone Course/Project	-	1	3	6	2%
Total	-	51	150	177	100

Program courses

Level	Course Code	Course Title	Required or Elective	Pre- Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	CHEM1001	General Chemistry	Required	--	4	College
	MATH1001	Calculus (1)	Required	--	4	College
	ISLM1001	Islamic Culture (1)	Required	--	2	Institution
	ARAB1001	Language Skills	Required	--	2	Institution
Level 2	BIO1001	General Biology	Required	--	4	College
	PHYS1001	General Physics	Required	--	4	College
	ISLM1003	Quranic recitation and Guidance	Required	--	2	Institution
	HIST1001	History of KSA	Required	--	2	Institution
Level 3	ENG1005	English Language	Required	--	3	College
	CS1002	Fundamentals of Digital Transformation	Required	--	2	Institution
	ISLM1002	Islamic Culture (2)	Required	--	2	Institution
	CHEM1002	Organic Chemistry (1)	Required	--	4	Program
	CHEM1003	Organic Chemistry Practical (1)	Required	--	1	Program
Level 4	CHEM1250	Chemistry of Main Group Elements	Required	--	4	Program
	CHEM1251	Chemistry of Solutions	Required	CHEM1001	3	Program
	CHEM1252	Safety and Security in Laboratories	Required	--	2	Program
	STAT1251	General Statistics	Required	--	3	Department
Level 5	CHEM1253	Chemistry of Transition Elements	Required	CHEM1250	4	Program
	CHEM1254	Organic Chemistry (2)	Required	CHEM1002	3	Program
	CHEM1255	Organic Chemistry Practical (2)	Required	--	2	Program
	CHEM1256	Physical Chemistry	Required	--	3	Program
Level 6	CHEM1257	Principles of Analytical Chemistry	Required	--	4	Program
	CHEM1358	Coordination Chemistry	Required	CHEM1253	3	Program
	CHEM1359	Kinetic Chemistry	Required	--	3	Program
	CHEM1260	Principles of Industrial Chemistry	Required	--	2	Program



Level 7	CHEM1500	Organic Chemistry of Heterocyclic Compounds	Required	CHEM1254	3	Program
	CHEM1501	Principles of Spectroscopy	Required	CHEM1001	4	Program
	CHEM1502	Environmental Chemistry	Required	--	3	Program
	CHEM1503	Principles of Toxicology	Required	--	2	Department
Level 8	CHEM1504	Biochemistry 1	Required	CHEM1002	3	Program
	CHEM1505	Inorganic Preparations	Required	CHEM1259	3	Program
	CHEM1506	Chromatography and Separation Methods	Required	CHEM257	4	Program
	CHEM1507	Introduction to Polymer Chemistry	Required	CHEM1002	3	Program
Level 9	CHEM1508	Organic Synthesis	Required	CHEM1254	3	Program
	CHEM1509	Electrochemistry	Required	CHEM1256	3	Program
	CHEM1510	Organic Compounds Spectroscopy	Required	CHEM1501	3	Program
	CHEM1511	Advanced Inorganic Chemistry	Required	CHEM1253	1	Program
Level 10	CHEM1750	Petrol Chemistry	Required	--	2	Program
	CHEM1751	Surface Chemistry and Catalysis	Required	CHEM1256	2	Program
	CHEM1752	Electroanalytical Chemistry	Required	CHEM1257	3	Program
	CHEM1753	Water Treatment	Required	CHEM1257	3	Program
		Elective 1	Required	--	3	Program
Level 11	CHEM1754	Chemical Thermodynamics	Required	CHEM1256	3	Program
	CHEM1755	Organic Reactions	Required	CHEM1254	3	Program
	CHEM1756	Graduation Project	Required	Passing 120 hrs.	3	Program
		Elective 2	Required	--	3	Program
Level 12	CHEM1757	Quantum Chemistry	Required	CHEM1256	2	Program
	CHEM1758	Green Chemistry	Required	-	2	Program
	CHEM1759	Biochemistry (2)	Required	CHEM1504	3	Program
	CHEM1760	Material Science	Required	CHEM1256	3	Program
		Elective 3	Elective	--	3	Program

Elective courses					
No	Course code	Course name	Credit hours	Prerequisites	Types of requirements
1	CHEM1761	Chemistry of natural products	3	CHEM1254	Program
2	CHEM1762	Nuclear and radiochemistry	3	CHEM1256	Program
3	CHEM1763	Chemistry of metal extraction and corrosion	3	CHEM1253	Program
4	CHEM1764	Instrumental analysis	3	CHEM1501	Program
5	CHEM1765	physical chemistry For polymers	3	CHEM1256	Program
6	CHEM1766	Applied analytical chemistry	3	CHEM1501	Program
7	CHEM1767	Physical organic chemistry	3	CHEM1254	Program
8	CHEM1768	Organometallic chemistry	3	CHEM1258	Program
9	CHEM1769	Medicinal chemistry	3	CHEM1254	Program



List of academic staff

No	Name	Gender	Nationality	Degree	Academic rank	Specific specialty
1	Dr/ Abdulelah Alsulami	Male	Saudi	Ph.D	Assistant Professor	Physical chemistry
2	Dr/Anas Alfarsi	Male	Saudi	Ph.D	Associate Professor	Analytical Chemistry
3	Prof/ Hussien Ba-Yahia	Male	Saudi	Ph.D	Professor	Physical chemistry
4	Dr/Ali Al-Orabi	Male	Saudi	Ph.D	Associate Professor	Analytical Chemistry
5	Dr/Nawaf Al-Sanani	Male	Saudi	Ph.D	Associate Professor	Organic chemistry
6	Dr/Ahmed Al-Zahrani	Male	Saudi	Ph.D	Associate Professor	Organic chemistry
7	Dr/ Essam Al-Qurashi	Male	Saudi	Ph.D	Assistant Professor	Organic chemistry
8	Dr/ Mousa Mohamed	Male	Saudi	Ph.D	Assistant Professor	Inorganic chemistry
9	Dr/ Seif Althaqfi	Male	Saudi	Ph.D	Assistant Professor	Organic chemistry
10	Dr/Ali Alzahrani	Male	Saudi	Ph.D	Assistant Professor	Analytical Chemistry
11	Dr/Mansour Alsarani	Male	Saudi	Ph.D	Assistant Professor	Physical chemistry
12	Dr/ Fawy Elsaghier	Male	Egyptian	Ph.D	Associate Professor	Organic chemistry
13	Dr/ Sami Zaban	Male	Jordanian	Ph.D	Associate Professor	Inorganic chemistry
14	Dr/ Moussa Albalah	Male	Sudanese	Ph.D	Associate Professor	Physical chemistry
15	Dr/Malek Shamsi	Male	Indian	Ph.D	Associate Professor	Physical chemistry
16	Dr/ Mohamed Mahboub	Male	Indian	Ph.D	Associate Professor	Organic chemistry
17	Dr/ Antar Abdulhamid	Male	Egyptian	Ph.D	Assistant Professor	Organic chemistry
18	Dr/ Othman Abdulmoaty	Male	Egyptian	Ph.D	Assistant Professor	Analytical Chemistry
19	Dr/ Mohamed Abdelbaset	Male	Egyptian	Ph.D	Assistant Professor	Inorganic chemistry
20	Dr/ Ibrahim Ali Ibrahim	Male	Egyptian	Ph.D	Assistant Professor	Inorganic chemistry



21	Dr/ Raafat Abdullah Mohamed	Male	Egyptian	Ph.D	Assistant Professor	Organic chemistry
22	Dr/ Mohamed Gomaa Ali Badry	Male	Egyptian	Ph.D	Assistant Professor	Organic chemistry
23	Dr/ Rania Ali Zain Elabedeen	Female	Saudi	Ph.D	Assistant Professor	Biochemistry
24	Dr/ Nada Mahmoud Ahmed	Female	Saudi	Ph.D	Associate Professor	Biochemistry
25	Dr/ Maha daifallah Elghamdi	Female	Saudi	Ph.D	Associate Professor	Physical chemistry
26	Dr/ Noha Mohamed Ahmed Elghamdi	Female	Saudi	Ph.D	Assistant Professor	Organic chemistry
27	Dr/ Aishah Awad Abdullah Alshahrani	Female	Saudi	Ph.D	Associate Professor	Analytical Chemistry
28	Dr/ Sameera Nasser Saleh Alghamdi	Female	Saudi	Ph.D	Assistant Professor	Organic chemistry
29	Dr/ Reem Alghamdi	Female	Saudi	Ph.D	Assistant Professor	Inorganic chemistry
30	Dr/ Khlood Al-Otaibi	Female	Saudi	Ph.D	Assistant Professor	Biochemistry
31	Dr/ Alia Al-Shamrani	Female	Saudi	Ph.D	Assistant Professor	Organic chemistry
32	Dr/Aza Alzahrani	Female	Saudi	Ph.D	Assistant Professor	Inorganic chemistry
33	Dr/Amal Alshehri	Female	Saudi	Ph.D	Assistant Professor	Physical chemistry
34	Dr/Hend Alharbi	Female	Saudi	Ph.D	Assistant Professor	Analytical chemistry
35	Dr/Arwa Alrouki	Female	Saudi	Ph.D	Assistant Professor	Organic chemistry
36	Dr/Manal Alzahrani	Female	Saudi	Ph.D	Assistant Professor	Biochemistry
37	Dr/ Sayed Nazereen	Female	Indian	Ph.D	Associate Professor	Organic chemistry
38	Dr/ Soada Elsaid	Female	Sudanese	Ph.D	Assistant Professor	Physical chemistry
39	Dr/ Seham Bashir	Female	Sudanese	Ph.D	Assistant Professor	Organic chemistry
40	Dr/ Enas Almanoubi	Female	Tunisian	Ph.D	Associate Professor	Analytical Chemistry
41	Dr/ Mona Abou Alqasem	Female	Sudanese	Ph.D	Assistant Professor	Analytical Chemistry
42	Dr/ Chahra Mehrez	Female	Tunisian	Ph.D	Assistant Professor	Inorganic chemistry

