



Readiness Report (Conformity Report) Biology Department



Al-Qadisiyah University

Al-Qadisiyah University is a distinguished Iraqi public university located in the center of Al-Qadisiyah Governorate, Diwaniyah, southern Iraq. Founded in 1987, it has played a significant role in providing knowledge, advancing scientific research, and serving the local community. The university is named after the famous Battle of Al-Qadisiyah, which took place there. Al-Qadisiyah University seeks to achieve academic and research development at the local and international levels.

Its vision is to be a leading academic institution that contributes to building a knowledge-based society, graduating qualified personnel capable of meeting labor market demands and actively participating in sustainable development. The university's mission focuses on advancing education, supporting scientific research that addresses challenges at the local and regional levels, and expanding academic partnerships with national and international institutions.

Al-Qadisiyah University includes many colleges with different scientific and humanities specializations, including:

1. College of Medicine: Offers advanced curricula in medical sciences, anatomy, and forensic medicine, with modern facilities for practical training and scientific research.
2. College of Engineering: Offers a wide range of disciplines, including civil, mechanical, electrical, computer, and chemical engineering.
3. College of Science: Includes departments of Life Sciences, Chemistry, Medical Physics, Medical Analysis, and Environment.
4. College of Education: Focuses on preparing teachers and instructors and offering advanced educational programs in the fields of languages, biology, chemistry, physics, mathematics, history, and literature.
5. College of Law: Focuses on teaching international and scientific laws and judicial systems, while strengthening students' legal skills.

6. College of Management and Economics: It offers specializations in management, economics, accounting, and banking, and aims to graduate cadres who contribute to economic development and the management of banks and financial institutions.

Al-Qadisiyah University is one of the distinguished Iraqi universities that strives to provide distinguished education, advance scientific research, and serve the local community. Through its diverse colleges, distinguished teaching staff, and growing commitment to continuous development, it efficiently fulfills its educational and scientific mission, contributing to the building of an educated and cultured generation capable of facing future challenges and supporting the development process in Iraq.

College of Science

The College of Science at Al-Qadisiyah University is a scientific and educational institution established with the goal of preparing generations of students armed with science and technology in Iraqi society and providing high-quality education in line with the scientific and cultural development witnessed worldwide. Founded in 2002, the college has since developed its academic and research programs to keep pace with scientific progress and graduate qualified personnel capable of effectively contributing to community service, growth, development, and prosperity.

The College of Science's vision is to be a distinguished educational center that encourages scientific research in the fields of applied and theoretical sciences, contributing to the development of society locally and regionally. Its mission is to produce a generation equipped with scientific knowledge and technical skills, while utilizing critical and creative thinking among students. It also aims to encourage scientific research that contributes to solving environmental, industrial, and agricultural problems in Iraq.

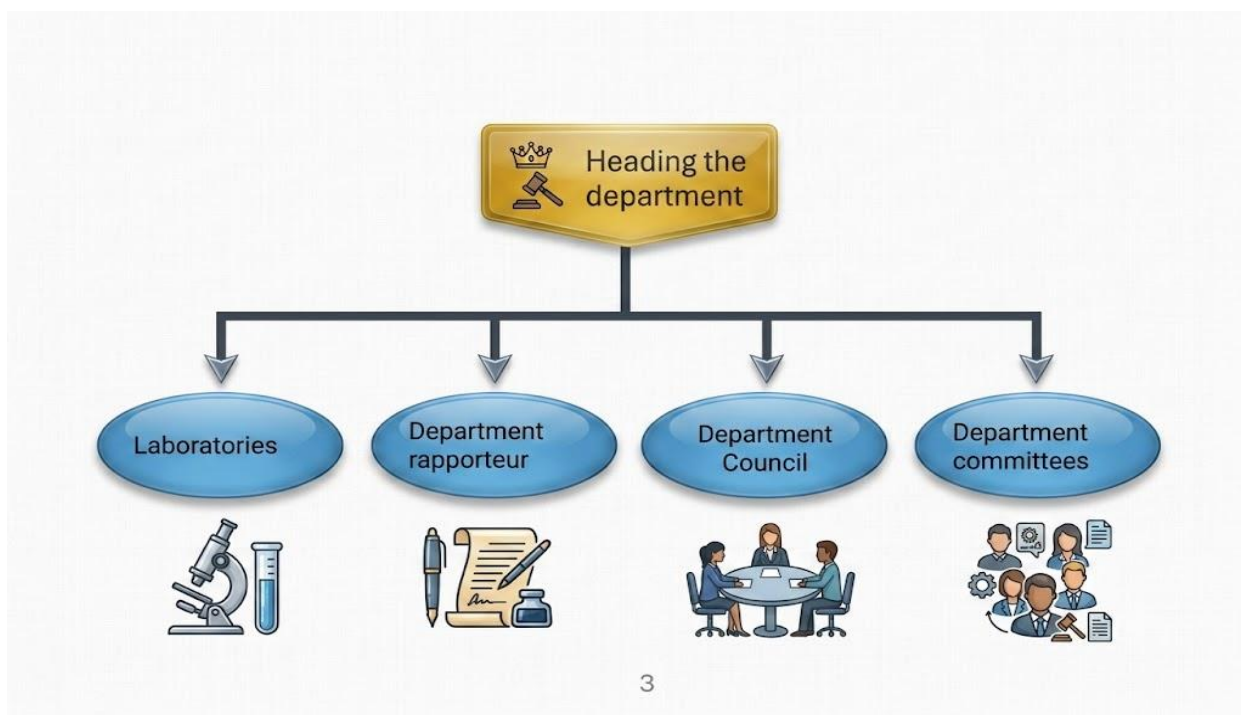
The College of Science comprises a number of specialized departments, offering comprehensive academic programs at all levels, including bachelor's, master's, higher diploma, and doctoral degrees in various specializations. Its departments include: Life Sciences, Chemistry, Environmental Sciences, Mathematics, Medical Physics, and Pathological Analysis. The College of Science emphasizes the importance of scientific research, as it includes modern laboratories

equipped with advanced equipment to support the research projects of students and faculty members.

Department of Life Sciences

The Department of Life Sciences in the College of Science is one of the core academic departments that plays a fundamental role in developing applied and theoretical sciences. It seeks to spread awareness in the fields of life sciences, pathology, and environmental sciences by providing the country with researchers and professors capable of dealing with the changes and developments taking place in the developed world, as well as contributing to the development of scientific and health institutions. The department offers a variety of academic programs.

The department includes microbiology, zoology, histology, immunology, entomology, botany, plant physiology, and animal physiology, providing students with the opportunity to specialize in various fields. The department began its studies in 2001 to obtain a bachelor's degree, followed by the establishment of higher diploma, master's, and doctoral studies. The department's administrative structure consists of the following:



Department message

The Department of Life Sciences adopts a mission that aims to prepare competent graduates who possess the skills and knowledge in various fields of life sciences, such as physiology, genetics, biotechnology, and genetic engineering, which qualify them to work in state scientific and health institutions and serve community issues. The department also seeks to keep pace with the latest developments and innovations in academic curricula, educational methods, and research trends in all fields of life sciences and medicine.

View section

Since its establishment, the department has been keen to prepare a distinguished type of graduate at a high level who has an academic background that combines the basic knowledge and skills required to enable them to meet the needs of contemporary society. The Department of Life Sciences is also keen to consolidate intellectual excellence among students and to emphasize modern knowledge in the various fields of life sciences while adhering to the preservation of ethics and professional values at the same time. Therefore, the department focuses on developing students' individual skills and experiences to achieve a better career future. In this way, the Life Sciences Department

contributes to the academic mission of the College of Science at Al-Qadisiyah University.

Objectives of the Life Sciences Department

1. To study biological sciences, their applications, and their uses in society from a theoretical, practical, and applied perspective.
2. To prepare undergraduate and graduate scientific cadres to work in the medical, health, and agricultural fields.
3. To provide students with experience in the use of laboratory equipment and materials.

Infrastructure

University Leadership Offices: These include the department chair, examination committees, and department rapporteurs. These offices are equipped with the latest office equipment and supplies, as well as heating and cooling equipment and computers.

Faculty Offices: Each faculty member has an office equipped with office supplies and heating and cooling equipment, providing a convenient space for students and researchers to answer their inquiries and conduct academic discussions.

Administrative Staff Rooms: There are also rooms designated for administrative staff, equipped with office supplies, computers, printers, and copiers, in addition to cooling and heating systems to facilitate administrative tasks.

Classrooms: The department has several classrooms designated for students, equipped with data projectors. The rooms are equipped with cooling and heating systems, blackboards, and new study chairs.

The Department of Life Sciences has six laboratories, each of which can accommodate approximately twenty-one students. All laboratories are furnished with laboratory furniture and contain glass and plastic laboratory tools, in addition to many laboratory devices, as follows:

1- The Advanced Research Laboratory in the Department of Life Sciences is a specialized scientific unit that aims to conduct advanced research and studies for graduate students from all government departments in various fields of life sciences, such as molecular biology, genetics, microbiology, and cell biology. This laboratory contributes to providing a distinguished research environment that contributes to improving scientific understanding of biological processes in living organisms and their applications, and the most important devices found in the laboratory

1- PCR (Polymerase Chain Reaction): Used to amplify DNA and conduct genetic studies.

2- High-performance liquid chromatography (HPLC): Used to analyze the chemical components in biological samples.

3- DNA sequencing device: Used to examine and determine DNA sequences.

4- ELISA (Enzyme-Linked Immunosorbent Assay) device: Used to detect antigens and antibodies in biological samples.

2- The Histology Laboratory in the Life Sciences Department is a laboratory specialized in the study and analysis of tissues and living cells for scientific and experimental purposes. This laboratory aims to provide a deeper understanding of cellular and tissue structure, in addition to studying potential damage.:

These tissues are affected by diseases or environmental influences. The laboratory is also a focal point for research in cell biology, tissues, and genetics. The most important experiments conducted in the tissue laboratory include: tissue preparation and fixation, which are used to study cellular and tissue structures using a light microscope; and centrifuges, which are used to separate the components of materials.

3- The Plant Laboratory in the Life Sciences Department is a scientific unit concerned with the study of plants from all their biological and physiological aspects. The laboratory includes conducting research experiments related to growth, reproduction, development, and the interactions of plants with their environments, in addition to studying plant diseases and how to control them. Activities and experiments in the laboratory, such as plant cultivation: Different

types of plants are cultivated in the laboratory. Under carefully controlled conditions of light, humidity, and temperature, to study the effect of these factors on plant growth. Analysis of cells and plants: Studying plant cells through a microscope to examine the structure of cells and the composition of different tissues. Tissues can also be examined under the influence of different environmental factors. Equipment available in the laboratory: light microscopes, thermometers, humidity meters, and plant breeding devices.

4- The Microbiology Laboratory in the Department of Life Sciences is a laboratory specialized in the study of microorganisms such as bacteria, fungi, viruses, and parasites using advanced techniques. This laboratory aims to understand the characteristics of microorganisms and their role in the environment and human and animal health, in addition to studying methods for diagnosing microbial diseases and developing

5-Immunology Laboratory in the Department of Life SciencesThe Immunology Laboratory in the Department of Life Sciences is a fundamental facility that contributes to enhancing scientific understanding of immune system interactions in living organisms. The laboratory's goal is to study the immune system's response to foreign bodies, viruses, bacteria, and cancer cells, as well as to analyze how to develop immunotherapy and vaccine technologies. The laboratory relies on a variety of tools. Modern experiments and devices that allow for accurate analysis of the activity of the immune system. The most important experiments conducted in the immunology laboratory are the analysis of the immune response to foreign bodies, antibody testing, and studies of immune cells. The most important devices in the laboratory are the light microscope, centrifuges, analysis devices, tissue culture equipment, and regular and vibrating incubators.

6-The Entomology Laboratory in the Department of Life Sciences is an academic laboratory specializing in the study of insects from various biological and environmental perspectives. This laboratory is located within the Life Sciences Department at several universities and aims to provide in-depth knowledge about the role of insects in the ecosystem and their impact on humans and the environment. The most important experiments are studying the life cycle of insects, insect behavior experiments, insect dissection, collecting

insect samples, and the most important devices in the laboratory: light microscopes, centrifuges, analysis devices, tissue culture equipment, and regular incubators.

Education and Learning

As previously mentioned, the Department of Life Sciences includes four academic programs: Bachelor's, Higher Diploma, Master's, and Doctoral.

Students and Graduation Requirements: To obtain a Bachelor's degree in Life Sciences, a Higher Diploma in Life Sciences, a Master's degree, or a Doctorate in Life Sciences, the student must pass several exams to move from one year of study to the next. Students are evaluated through:

Monthly and daily exams: There are monthly and daily exams determined by the instructor in coordination with the students and the department head. Students are evaluated based on their performance in the exams. In addition, there is a grade for classroom and extracurricular activities that is added to the effort grade (out of 40%). The department and instructors also have the authority to make additional choices to improve results and give students the opportunity to perform better.

Final Exam: The final exam weighs 60%. The exam is conducted based on a schedule developed in collaboration between the department, faculty, and students. Special exam notebooks are used, and names are removed from the notebooks prior to marking. After marking by the faculty, the notebooks are returned to the examination committee, which then combines the effort score with the final exam score.

Graduation research: Graduation research is one of the requirements for obtaining a Bachelor of Life Sciences degree. The research title is determined during the summer vacation for successful students from the third to the fourth year. After the college council approves it, the necessary data is collected in hospitals or health centers' medical laboratories, or in the industrial sector. After that, the data is analyzed to know the results and determine their conclusions and importance. After that, the student presents the research to the discussion

committee, which poses questions and discusses with the student to know the extent of the student's knowledge of the research and benefit from it.

A table showing the number of students and the certificates awarded by the scientific department.

Degree	Number of students
Bachelor's	٦٥٠
Higher Diploma	١١
Master's	١٩
Doctorate	١١

Table of the number of teachers according to academic titles

number	Academic Title
١٦	Professor
٩	Assistant Professor
٢	Lecturer
١٦	Assistant Lecturer
٤٣	Total number

Identify strengths, weaknesses, and an improvement plan for each criterion

First Criterion: Educational program objectives

Weaknesses	Strengths
4. Lack of direct practical applications: Although the Life Sciences Department provides students with a strong theoretical understanding of living organisms and biological systems, some degree programs may lack direct practical experiences. This gap may affect students' ability to apply their knowledge in practical contexts, limiting their overall readiness for the job market. 5. Complex Curriculum: Some Life Sciences programs can be quite complex, especially when students are required to learn advanced biological concepts such as molecular biology and genetics. Some students may find it difficult to keep up with these curricula, leading to challenges in understanding some scientific topics. 6. Reliance on advanced technology and tools: The Life Sciences Department requires the use of modern and advanced research techniques, such as advanced microscopy tools and genetic analysis. This can pose a challenge for some academic institutions that	1. Scientific Interdisciplinarity: The Department of Life Sciences is a highly interdisciplinary department, offering a wide range of subjects such as molecular biology, cell biology, and ecosystems, helping students gain a comprehensive understanding of life and biological systems. This diversity allows students to explore diverse fields within the biological sciences, enhancing their research capabilities. 2. Research Opportunities: The Department of Life Sciences provides an ideal environment for scientific research, where students and faculty can collaborate to conduct scientific experiments and in-depth studies in multiple fields. This research provides an opportunity to discover solutions to contemporary environmental and health challenges, contributing to the development of medical,

lack sufficient resources to provide these tools to students on an ongoing basis. This can negatively impact the quality of education and scientific research in some cases.

7. Funding Challenges: Given the research-intensive nature of this field, the Life Sciences Department may face challenges in securing the necessary funding for scientific research. This may hinder the ability to conduct new and innovative research related to complex health or environmental problems, especially in countries or institutions with limited financial resources.
8. Competitiveness in the job market: With the increasing number of graduates from this department worldwide, students may face challenges in standing out in the job market, as competition in fields such as scientific research and the pharmaceutical industry can be intense. Students may need to develop additional skills or pursue graduate studies to enhance their career opportunities.

agricultural, and environmental sciences.

3. Contributions to health and the environment: Life sciences play a significant role in addressing environmental and health issues. Through research in medicine and the environment, this department can significantly contribute to the development of medicines, the understanding of diseases, and efforts to solve environmental problems such as pollution and climate change. This prepares the department's students for careers in important fields such as public health, medicine, and environmental research.

Improvement Plan

Improving the life sciences department at any educational institution, whether a school or a university, requires focusing on several key aspects aimed at developing the educational process, improving academic efficiency, and providing a modern and effective learning environment

Second Standard: Educational program outcomes and their evaluation

Strengths Weaknesses	Strengths Weaknesses
Weakness in linking the learning outcomes mentioned above with the objectives of the educational program announced and approved in advance by the colleges of science and their councils	*Praise for the educational program outcomes by graduates and employers
Improvement Plan .	
Forming a committee to work on linking the learning outcomes of the Life Sciences Department with the educational program objectives previously announced and approved by the colleges of science and their councils	

Third and Fourth Standards: Continuous Improvement Approaches

Weaknesses	Strengths
The department lacks accurate records of problems and obstacles, as well as a comprehensive evaluation of the academic program. The department lacks a hidden system for managing quality, and there is no electronic documentation or online evaluation of the program. The department lacks real partnerships with peer departments.	Describing academic courses and programs. Implementing multiple and diverse teaching and learning strategies. Implementing e-learning in undergraduate and graduate studies and conducting various tests. Continuously updating curricula and syllabuses. Most educational programs have achieved their desired outcomes .
Improvement Plan	
Establish a database of problems and obstacles facing the academic program and conduct a comprehensive evaluation every four years.	

Fourth and Fifth Standards: Continuous Improvement and Students

Weaknesses	Strengths
The lack of transparent and fair procedures and methods for student assessment and monitoring, and reliance solely on classical assessment methods. The lack of clear and announced procedures for students related to curriculum planning, distinguishing between compulsory and optional courses, and restricting students to only the options determined by the department. The lack of courses specifically for students to expand their knowledge of industrial and applied aspects. The lack of a clear policy regarding alternative resources.	The department has a clear and specific admissions policy. The department provides safe and comfortable spaces for students. Feedback is provided through centralized exams and professor evaluations. The department provides buildings, spaces, and playgrounds for student activities, as well as classrooms and laboratories. The department provides scholarships and financial aid to needy students by agreeing to reduce tuition fees for needy and underprivileged students.
Improvement Plan	
Forming a committee to develop transparent and fair procedures and methods for evaluation and monitoring, using modern international methods.	

Sixth Standard: Academics and Teachers

Weaknesses	Strengths
Lack of documentation of the time allocated to the academic program and workload. Lack of documentation of the quality of faculty interactions with students, including providing advice and motivation for activities.	Determine the department's needs for faculty members and their specializations based on the department's vision and objectives.

Lack of faculty involvement in curriculum development, modification, and evaluation. Documentation of faculty members' roles in reviewing program objectives and achieving learning outcomes.	The department's highly effective council selects faculty members for activities based on criteria that include their qualifications and abilities. The department maintains a database detailing the qualifications and experience of faculty members. Awarding rewards and prizes to those who excel in scientific publishing.
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Improvement Plan

Document the academic program's work schedules and publish them on the official page.

Hold periodic meetings with students by the educational guidance committees and faculty members, and provide contact information in case of any problems or consultations.

Develop a plan requiring the involvement of all department council members and faculty members in curriculum modification and evaluation. Document the role of faculty members in reviewing the program's educational objectives and achieving learning outcomes.

Seventh Standard: Administrative Support

Weaknesses

Strengths

The department's inability to transfer surplus staff or transfer someone it deems appropriate to the department's work. The lack of an effective plan to develop technical and administrative staff.	Provides comprehensive and partial organizational structures that are periodically reviewed. Provides a responsibilities and authority guide for administrative staff. Provides robust, database-based plans in the planning unit. Provides job descriptions that are implemented across the department.
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Improvement Plan Approach higher authorities regarding the need for staff and transfer those deemed appropriate. Develop an effective plan, in coordination with the college deanship, to train technical and administrative staff.

Eighth Criterion: Financial Support

Weaknesses	Strengths
The department's involvement in developing a financial budget to meet the requirements for implementing the academic program. The lack of a clear and documented mechanism for developing and maximizing sufficient financial resources to maintain, update, and operate the infrastructure, facilities, and laboratory equipment required by the program, in order to provide a scientific environment	Disbursing the department's members' dues, incentives, lecture fees, or any other fees on an ongoing basis and without any delay, in coordination with senior management, by attaching a special form for lectures for undergraduate and graduate studies, and for morning and evening studies, specifying the actual hours, the

through which the desired goals can be achieved.	tuition fee, and the amount to be paid.
The lack of financial support for developing teaching, administrative, and technical staff through external courses and participation.	

Improvement Plan

Approach higher authorities to establish a financial budget with freedom for implementation.

Establish a clear and documented mechanism for developing and maximizing sufficient financial resources to maintain, update, and operate the infrastructure, facilities, and laboratory equipment required by the program, to provide a scientific environment through which the desired goals can be achieved.

Approach higher authorities to provide financial allocations for the development of teaching staff.

Ninth Standard: Facilities and Services

Weaknesses	Strengths
Lack of an announcement of the academic program, the application process, and appropriate guidance for students regarding the use of tools, devices, equipment, and computers in laboratories and elsewhere.	The department is equipped with a large proportion of specialized and specialized devices that contribute to the completion of research for the teaching staff and graduate students.
Improvement Plan	
Academic Program Announcement, Application Mechanism, and Appropriate Guidance for Students Regarding the Use of Tools, Devices, Equipment, and Computers in Laboratories and Other Areas	