Program Specification

(Bachelor)

Program: **Bachelor of Science in Biology**
Program Code (as per Saudi university ranking): **051000**
Qualification Level: 6
Department: **Biology**
College: **Science**
Institution: Imam Mohammad Ibn Saud Islamic University (IMSIU)
Program Specification: New ☐ updated* ☒
Last Review Date: **29/9/2024**

*Attach the previous version of the Program Specification.

Table of Contents

A. Program Identification and General Information

1. Program's Main Location :

Imam Mohammad Ibn Saud Islamic University (IMSIU):
Main campus for the Male Section
King Abdullah City for the Female Section

2. Branches Offering the Program (if any):

None

3. Partnerships with other parties (if any) and the nature of each:

None

4. Professions/jobs for which students are qualified

2 Specialist
21 Science and engineering professionals
213 Life sciences professionals
2131 Biology, plant and animal specialists and their disciplines
213101 Biology Specialist
213102 Biochemistry Science Specialist
213103 Biophysical Sciences Specialist
213104 Biotechnologist
213105 Plant Science Specialist
213106 Animal Science Specialist
213107 Biology Specialist
213108 Entomology Specialist
213109 Pharmaceutical Sciences Specialist
213110 Genetics Specialist
213111 Embryology Specialist
213112 Bacteriology Specialist
213113 Epidemiologist
213114 Microbiology
213115 Medical Laboratory Specialist
213116 Clinical Laboratory Specialist

5. Relevant occupational/ Professional sectors:

Field (01): Education
Field (05): Natural Sciences
Field (08): Agriculture, Forestry, Fisheries And Veterinary
Field (09): Health and Welfare

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
Not Applicable		

7. Exit Points/Awarded Degree (if any):	
exit points/awarded degree	**Credit hours**
Exit point: The student must complete a total of **64** credits as follows: **60** credits in the first two years, including **4** credits University Requirements (QUR 1001 [Quran, University Requirement 1] and ARB 1001 [Linguistic Skills, University Requirement 3]) **Awarded degree:** Diploma in Biology	**64**

8. Total credit hours: (136)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

Leading quality education and research in biological sciences as well as community service.

2. Program Goals:

G1. Taking care of the classroom and laboratory as the most important place in the biology department space, which provides a modern educational and research environment that stimulates excellence and innovation.
G2. Providing academic programs in a wide range of biological disciplines at various levels designed to provide adequate knowledge and skills and experimental laboratory research to contribute to meeting the needs of the labor market and to serve the community.
G3. Providing a distinguished university education to develop students' abilities to think critically and solve problems using the experimental method and scientific analysis.
G4. Enhancing the use of technology in improving the quality and managing the educational process.
G5. Improving the quality of teaching and scientific research by relying on professional development, directed scholarships, and attracting distinguished faculty members, with providing excellent opportunities for students and graduates to participate in scientific research for community service.
G6. Building qualitative and effective partnerships with institutions of the private and public sectors to enhance the department's position and open broader horizons for students and faculty members through cooperation activities and services that enhance education and the spreading of knowledge, thereby serving the community.

3. Program Learning Outcomes*	
Knowledge and Understanding	
K1	Recognize a comprehensive and consistent structure of knowledge and understanding of the theories, principles and concepts involved in the science of biology needed to enter the job force.
K2	Outline knowledge and understanding of processes, tools, methods, and practices based on recent developments in modern biology.
Skills	
S1	Explain the concepts, principles and theories involved in addressing issues and problems in a range of complex contexts in biology.
S2	Analyze a variety of digital technology, information, communication technology tools, and appropriate biological software tools to process, analyze and produce data and information; to support and promote specialized research and projects related to science of biology and related branches.
S3	Summarize different ways of understanding theoretical knowledge, transferring knowledge and specialized skills, and sharing complex ideas within a variety of audience.
Values, Autonomy, and Responsibility	
V1	Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some societal issues, and a commitment to responsible citizenship.
V2	Evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.
V3	Use teamwork with functional flexibility and effectiveness, and take responsibility for professional development, participating in developing the group's performance, and enhancing the quality of life.

* Add a table for each track or exit Point (if any)

3. Exit Point Learning Outcomes	
Knowledge and Understanding	
K1	Recall knowledge and understanding of basic biological sciences.
Skills	
S1	Explain the concepts, principles and theories involved in addressing issues and problems in basic biology.
S2	Summarize different ways of demonstrating and understanding of basic knowledge.
Values, Autonomy, and Responsibility	
V1	Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some general issues, and a commitment to responsible citizenship.
V2	Evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently.

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	2	4	2.94%
	Elective	8	16	11.76%
College Requirements	Required	6	20	14.7%
	Elective			
Program Requirements	Required	26	76	58.82%
	Elective	2	4	
Capstone Course/Project		1	4	2.94%
Field Training/ Internship		1	6	4.41%
Others (Free courses)		3	6	4.41%
Total		49	136	100%

* Add a separated table for each track (if any).

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	BIO 1101	General Biology	Required	-	4	College
	CHM 1101	General Chemistry (1)	Required	-	4	College
	MAT 1101	Calculus (1)	Required	-	4	College
	ENG 1140	English (1)	Required	-	2	College
	QUR 1001	Quran (University Requirement 1)	Required	-	2	Institution
		University Requirement 2	Elective	-	2	Institution
Level 2	BIO 1111	Animal Taxonomy	Required	BIO 1101	3	Program
	BIO 1113	Cell Biology	Required	BIO 1101	3	Program
	BIO 1121	Plant Taxonomy	Required	BIO 1101	4	Program
	PHY 1101	General Physics (1)	Required		4	College
	ENG 1195	English (2)	Required	ENG 1140	2	College
		Free course*	Elective	-	2	Institution
Level 3	BIO 1231	Genetics	Required	BIO 1113	3	Program
	BIO 1237	Biochemistry	Required	BIO 1101 and CHM 1101	3	Program
	BIO 1241	General Microbiology	Required	BIO 1101	3	Program
	BIO 1251	Ecology and Biodiversity	Required	BIO 1121	2	Program
	STA 1217	Biostatistics	Required	MAT 1101	3	Program
	ARB 1001	Linguistic Skills (University Requirement 3)	Required	-	2	Institution

		University Requirement 4	Elective	-	2	Institution
Level 4	BIO 1212	Immunology	Required	BIO 1113	3	Program
	BIO 1218	Microtechniques	Required	BIO 1101	3	Program
	BIO 1232	Molecular Biology	Required	BIO 1231	3	Program
	BIO 1242	Bacteriology	Required	BIO 1241	3	Program
	BIO 1252	Environmental Impact Assessment	Required	BIO 1251	2	Program
		University Requirement 5	Elective	-	2	Institution
		University Requirement 6	Elective	-	2	Institution
Level 5	BIO 1314	Animal Physiology	Required	BIO 1237	3	Program
	BIO 1322	Plant Anatomy and Physiology	Required	BIO 1251	3	Program
	BIO 1343	Parasitology	Required	BIO 1111	3	Program
	BIO 1353	Entomology	Required	BIO 1111	3	Program
	CHM 1307	Analytical Chemistry	Required	CHM 1101	4	Program
	COMH 1311	Community Health & Epidemiology	Required	BIO 1101+ BIO 1241	2	Program
Level 6	BIO 1324	Plant Pathology	Required	BIO 1322	3	Program
	BIO 1333	Genetic Engineering & Biotechnology	Required	BIO 1231+ BIO 1232	4	Program
	BIO 1345	Virology	Required	BIO 1241	3	Program
	XXXX	Elective Course (1)	Elective	-	2	Program
		University Requirement 7	Elective	-	2	Institution
		University Requirement 8	Elective	-	2	Institution
		Free course*	Elective	-	2	Institution
Level 7	BIO 1415	Embryology	Required	BIO 1314	3	Program
	BIO 1434	Bioinformatics	Required	STA 1217	2	Program
	BIO 1454	Microbial Pollution	Required	BIO 1242 + BIO 1345	3	Program
	BIO 1455	Animal Behavior	Required	BIO 1252	2	Program
	XXXX	Elective Course (2)	Elective	Upon specifying the course	2	Program
		University Requirement 9	Elective	-	2	Institution
		University Requirement 10	Elective	-	2	Institution
		Free course*	Elective	-	2	Institution
Level 8	BIO 1497	Field Training	Required	The student must complete a minimum of 126 credit hours.	6	Program
	BIO 1499	Graduation Project	Required	- The student must complete a	4	Program

				minimum of 126 credit hours. - Upon specifying the title of the Project - STA 1217		

* Include additional levels (for three semesters option or if needed).
** Add a table for the courses of each track (if any)

Elective courses

Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Elective Course (1)					
BIO 1417	Hematology	Elective	BIO 1314	2	Program
BIO 1419	Experimental Embryology	Elective	BIO 1314	2	Program
BIO 1457	Biological control	Elective	BIO 1353	2	Program
BIO 1458	Ecological Physiology	Elective	BIO 1252	2	Program
Elective Course (2)					
BIO 1459	Flora & Fauna of Saudi Arabia	Elective	BIO 1251	2	Program
BIO 1461	Endocrinology	Elective	BIO 1314	2	Program
BIO 1471	Applied Biology	Elective	BIO 1333	2	Program
BIO 1473	Scientific methodology	Elective	STA 1217	2	Program

University required courses

University required courses (1–10) should be chosen from the following packages based on the indicated rules:

Package	Course Code	Course Title	Credit Hours	Rules
Islamic knowledge and values	QUR 1001	Quran	2	The student chooses two courses, one of which should be the Quran course
	HAD 1001	Studies in the Sunnah	2	
	JRS 1001	Objectives of Shariah	2	
	IDE 1001	Creed	2	
	JR 1001	Jurisprudence of Worship and Family		
Historical, national, and social knowledge and values	HST 1001	Studies in the Prophet's biography	2	The student chooses two courses
	HST 1002	National History	2	
	SOS 101	Voluntary Work Skills	2	
	CUL 1001 CIS 101	Jurisprudence of Rights and Duties	2	
	GEO 1011	Environment and Sustainable Growth	2	
Professional skills and labor market	RHB 1001	Work Value and Ethics	2	The student chooses two courses
	BUS 1001	Innovation and Entrepreneurship	2	
	EDM 1001	Leadership Skills	2	
	FIN 1001	Financial Planning Skills	2	
	ENG 1001	English Language Skills	2	
Communicative and personal skills	BC 1001	Communications Skills	2	The student chooses two courses
	ARB 1001	Linguistic Skills	2	
	ART 1001	Editing and Speech Skills	2	
	PSY 1001	Mental Health	2	
	BIO 1001	General Knowledge of Health Care	2	
Academic skills	TCM 1001	University Education Skills	2	The student chooses two courses
	RHE 1001	Reading Skills	2	
	IT 1001	Technical Skills	2	
	EDP 1001	Thinking Skills	2	
	STA 1001	Basics of Statistics	2	

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

Course Specifications

4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses, according to the following desired levels of performance *(I = Introduced & P = Practiced & M = Mastered).*

Course code & No.	Program Learning Outcomes							
	Knowledge and understanding		Skills			Values, Autonomy, and Responsibility		
	K1	K2	S1	S2	S3	V1	V2	V3
BIO 1101	I	I		I	I	I		
CHM 1101	I	I		I	I	I	I	I
MAT 1101	I	I	I	I	I	I	I	I
ENG 1140			I		I	I	I	
QUR 1001 University Requirement (1)			I		I	I	I	
University requirement (2)			I		I	I		
BIO 1111	I	I	I	I	I	I		
BIO 1113	I	I	I	I	I	I	I	
BIO 1121	I	I	I	I	I	I	I	
PHY 1101			I	I	I	I	I	I
ENG 1195						I	I	I
Free course			I		I	I	I	I
BIO 1231	I	I	I	I	I	I	I	I
BIO 1237	I	I	I	I	I	I	I	
BIO 1241	I	I	I	I	I	I	I	
BIO 1251	I	I	I	I	I	I	I	
STA 1217	I	I	I	I	I	I	I	
ARB 1001 University Requirement (3)			I		I	I		
University requirement (4)			I		I	I	I	I
BIO 1212	I	I	I	I	I	I	I	
BIO 1218	I	I	I	I	I	I	I	
BIO 1232	I	I	I	I	I	I	I	
BIO 1242	I	I	I	I	I	I	I	
BIO 1252	I	I	I	I	I	I	I	
University Requirement (5)			P		P	P	P	P
University requirement (6)			P		P	P	P	P
BIO 1314	P	P	P	P	P	P	P	
BIO 1322	P	P	P	P	P	P	P	
BIO 1343	P	P	P	P	P	P	P	P
BIO 1353	P	P	P	P	P	P	P	

Course code & No.	Program Learning Outcomes							
	Knowledge and understanding		Skills			Values, Autonomy, and Responsibility		
	K1	K2	S1	S2	S3	V1	V2	V3
CHM 1307	P	P	P	P	P	P	P	P
COMH 1311	P	P	P	P	P	P	P	P
BIO 1324	P	P	P	P	P	P	P	
BIO 1333	P	P	P	P	P	P	P	
BIO 1345	P	P	P	P	P	P	P	P
Elective Course (1)	P	P	P	P	P	P	P	P
University requirement (7)			M		M	M	M	M
University requirement (8)			M		M	M	M	M
Free course			I		I	I	I	I
BIO 1415	M	M	M	M	M	M	M	
BIO 1434	M	M	M	M	M	M	M	M
BIO 1454	M	M	M	M	M	M	M	M
BIO 1455	M	M	M	M	M	M	M	M
Elective Course (2)	M	M	M	M	M	M	M	M
University requirement (9)			M		M	M	M	M
University requirement (10)			M		M	M	M	M
Free course			M		M	M	M	M
BIO 1497	M	M	M	M	M	M	M	M
BIO 1499	M	M	M	M	M	M	M	

* Add a separated table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes.

Describe teaching and learning strategies, including curricular and extra-curricular activities, to achieve the program learning outcomes in all areas.

To achieve program learning outcomes, a variety of teaching and learning strategies, such as lectures, tutorials, and laboratory sessions, will be utilized alongside curricular and extra-curricular activities. This approach aims to create an engaging learning environment that connects theoretical knowledge with real-world applications. By promoting collaboration, critical thinking, and ethical engagement, the program prepares graduates to address complex challenges and make meaningful contributions to their communities and industries. This comprehensive strategy ensures students are equipped to meet the Program Learning Outcomes in knowledge, skills, values, autonomy, and responsibility.

Knowledge and Understanding strategies include Interactive Lecture, Discussion and Dialogue, Mind Maps, Concept Maps, Standard Method, Inductive Method, Self-Learning, Cooperative Learning, and Field Visits.

Skills strategies include Interactive lecture, Discussion and dialogue/inquiry, Standard and inductive method, Problem solving, Brainstorming, Discovery learning, Flipped classroom, Cooperative learning, Case study, Role playing, Field visits, Presentation activities, Self-learning, Cognitive journeys, Practical Application, Microteaching, Modeling, Simulation, and Project-Based Learning.

Values, Autonomy, and Responsibility strategies include Modeling, Dialogue and discussion,

Self-learning, and Collaborative learning.

5.1. Teaching and Learning Strategies

5.1.1. Active Learning Techniques

- Collaborative Group Projects: Students work in diverse teams to tackle complex biological problems. Each project requires them to analyze a real-world issue and develop solutions using biological concepts. This promotes analytical and problem-solving skills while enhancing teamwork and communication (V3).
- Peer Teaching Sessions: Organize structured peer-led review sessions where students take turns explaining key concepts to their classmates. This method not only reinforces their understanding but also hones their ability to communicate biological ideas clearly and accurately (S3).

5.1.2. Project-Based Learning

- Real-World Problem Solving: Assign projects that require students to design biological models addressing current societal challenges. This approach integrates theoretical knowledge with practical application (S1, V1).
- Interdisciplinary Research Projects: Encourage students to collaborate with peers from other disciplines (e.g., medical and pharmaceutical sciences) to explore how biology can be applied across various fields, illustrating its versatility (V2).

5.1.3 Technology Integration

- Software Training Workshops: Offer hands-on workshops on using biological software tools. Students learn to apply these tools for data analysis, simulations, and visualizing biological concepts, thereby developing their proficiency in utilizing technology (S2).
- Online Collaboration Platforms: Utilize platforms such as Google Workspace or Microsoft Teams to facilitate group work and discussions. Students can collaborate on projects, share resources, and provide peer feedback, enhancing their engagement and teamwork skills (S2).

5.1.4. Inquiry-Based Learning

- Research Assignments: Assign students to conduct literature searches on specific biological topics, requiring them to critically appraise sources and synthesize findings into a cohesive report. This builds their research skills and ability to analyze diverse materials (K1, S1).
- Problem Posing and Exploration: Create opportunities for students to formulate their own biological questions based on real-world scenarios. This approach encourages independent thinking and critical analysis, allowing them to explore topics that pique their interest (K2, S3).

5.2. Curricular Activities

5.2. 1. Workshops and Seminars

- Guest Lectures and Industry Panels: Invite professionals from various fields to share their experiences and discuss how they use biology in their careers, including biological education subjects. This exposure helps students understand the relevance of their

studies and the ethical considerations involved in applying biology (V1).
- Skill Development Workshops: Provide workshops focused on specific biological skills. These sessions can include case studies that prompt students to consider the societal impact of their biological work (S1, V1).

5.2. 2. Field Experience

- Field Experience Opportunities: Collaborate with local businesses and research institutions to provide Field training for students. Internships allow students to apply biological theories in practical settings, gain experience, and develop professional ethics (K2, V1).
- Field Trips: Organize visits to companies or research centers where biology plays a crucial role. These visits help students see the practical application of their studies and foster connections with potential employers (K1, S1).

5.2. 3. Assessment and Feedback

- Formative Assessments: Implement regular quizzes, homework, exams, presentations, and project reviews to provide ongoing feedback to students. This helps them assess their understanding and encourages self-evaluation of their learning (K1, K2).
- Portfolio Development: Require students to create a portfolio documenting their projects, research papers, and reflections on their learning journey. This portfolio not only showcases their skills but also encourages reflective practice (K1, K2).

5.3. Extra-Curricular Activities

5.3.1. Science Clubs

- Study Groups and Tutoring Programs: Establish student-led study groups and peer tutoring sessions. These initiatives create a supportive learning environment where students can collaborate on challenging topics and help each other succeed (V3).
- Outreach Initiatives: Organize community outreach programs, such as biology tutoring for local high school students or workshops for underrepresented groups. This promotes responsible citizenship and ethical engagement with the community (V1, V3).

5.3.2. Conferences and Competitions or national specific exam

- Participation in biology Competitions: Encourage students to enter national and international biology competitions, fostering their analytical and creative problem-solving abilities (S1).
- Academic Conferences: Support students in attending and presenting at academic conferences, allowing them to share their research, network with professionals, and improve their communication skills (S3).

5.3.3. Leadership Development

- Mentorship Programs: Pair students with faculty or industry mentors who can provide guidance on academic and career choices. This helps students develop a sense of responsibility and ethical decision-making (V3).
- Leadership Roles in Group Projects: Assign students' roles within their project teams

that allow them to take on leadership responsibilities. This encourages adaptability and the development of leadership skills necessary for professional success (V3).

6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.
The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

Program learning outcomes assessment methods are classified as direct (where actual student behavior is measured or assessed), and indirect (which include activities that gather impressions or opinions about the program and/or its learning goals). Direct assessment methods require students to represent, produce or demonstrate their learning. Examples of direct assessment include but are not limited to the following: Course-embedded assignments, Presentations, Performances or Projects, Capstone experiences, Portfolios, Senior theses, and Comprehensive exams, certification or licensure exams. Indirect assessment methods capture information about students' perceptions about their learning experiences and attitudes toward the learning processes. Examples of indirect assessment include but are not limited to the following: Surveys, such as satisfaction, attitudinal, feedback, employer or alumni perceptions, Focus groups, Exit interviews, Self-evaluations, such as student or alumni self-ratings of learning, and External reviews.

6.1. Direct Assessment Methods

6.1.1. Exams and Quizzes

Midterm and Final Exams: Each semester includes two midterms and a final exam. These assessments tests students' understanding of fundamental principles of biology and their ability to articulate biological concepts and apply them in various contexts. The exams consist of a mix of multiple-choice questions, problem-solving exercises, and theoretical questions, ensuring comprehensive coverage of the material (K1, K2).
Weekly homework/Quizzes: Short quizzes are administered at the end of each week to evaluate students' grasp of recent topics. These quizzes focus on analytical skills and problem-solving, helping identify areas that may require further review before major exams (K1, K2).

6.1.2. Projects and Presentations

Biology-related Projects: In the last semester of Year 4, students will work on projects that require them to conduct scientific research addressing real-world problems. Each project will culminate in a presentation, allowing students to demonstrate their communication skills and their ability to apply theoretical knowledge in practical scenarios (S2, S3).
Research Papers: Assigned in the last semester of Year 4, students will draft a research paper that involves conducting literature searches, critically appraising sources, and synthesizing findings related to a specific biological topic or application. This assessment will gauge their research abilities and understanding of the historical context and applications of biology (S1, S2).

6.1.3. Laboratory Assessments

Biological Software Labs: Throughout the program, students will participate in lab sessions focused on using biological software tools. Assessments will include practical assignments where students demonstrate their ability to utilize these tools for data analysis, simulations, and data visualization. Lab reports will be graded based on accuracy, creativity, and clarity of presentation (S2).

6.1.4. Peer and Self-Assessment

Peer Reviews: Throughout the program, students will engage in peer reviews for group projects and presentations. This method encourages collaborative learning and accountability while allowing students to practice critical evaluation (V3).

Self-Reflection Journals: Students will maintain journals (personal records) throughout the program to document their learning experiences, ethical considerations, and self-evaluations of their performance. These journals will be submitted at the end of each academic year for assessment, focusing on personal growth and reflection (V1).

6.2. Indirect Assessment Methods

6.2.1. Surveys and Questionnaires

Student Feedback Surveys: At the end of each semester, students will complete surveys assessing their learning experiences, perceived skill development, and the effectiveness of instructional methods. The feedback collected will be used to adjust the curriculum and teaching strategies. In addition, they will assess their ability regarding all PLOs (K1, K2, S1-S3).

Exit Surveys: Conducted during graduation, these surveys will ask students to reflect on their overall educational experience and how well the program prepared them for their careers, particularly regarding ethical behavior and their ability to self-evaluate (V1-V3).

6.2.2. Focus Groups

Alumni Focus Groups: Organized every two years, these focus groups will involve recent graduates discussing the relevance of the skills and knowledge gained in the program to their professional lives. Insights from these discussions will help evaluate the program's effectiveness and inform future curriculum development (K1, K2, S1-S3).

6.2.3. Course Evaluations

End-of-Semester Evaluations: Conducted regularly at the end of each semester, these evaluations will assess course content, teaching effectiveness, and overall student satisfaction. The results will provide indirect insights into the achievement of learning outcomes and inform potential improvements (K1, K2).

6.3. Assessment Plan Overview Cycle Structure

6.3.1. Assessment Frequency:

Each PLO will be assessed at least twice throughout the program, with one additional assessment conducted in related degrees, ensuring a comprehensive evaluation including mapping PLOs to courses:

Year 1: Introductory courses will assess foundational knowledge (K1, K2) and analytical skills (S2). Direct assessments will include quizzes, exams, and a group project on biological concepts.

Year 2: Intermediate courses will evaluate biological skills (S1-S3). Assessments will include projects and lab assignments.
Year 3: Advanced courses focusing on biological methods and ethical considerations through research papers and peer evaluations (V1).
Year 4: The Capstone course BIO 1499 will assess literature search skills (S3) and will integrate knowledge and skills from the entire program, requiring students to complete a comprehensive project that synthesizes their learning. This final assessment will evaluate communication (S2), leadership in team settings (V3), and self-evaluation (V2) through presentations and reports.
Field Experience Assessment
In the program's final year, students must complete a field experience or internship related to their area of study. This practical component will allow students to apply their biological knowledge in real-world settings, reinforcing their understanding and enhancing their skill set (S1-S3, V1, V2).

6.3.2. Field Experience Evaluation:
Students will be assessed based on their performance in the field training (BIO 1497), including their ability to apply biological concepts to solve real-world problems. Evaluations will include supervisor assessments, which will focus on the student's analytical skills, problem-solving abilities, and ethical conduct (V1). Students will submit a final report detailing their internship experiences, the projects they worked on, and the biological techniques they employed. This report will be graded on clarity, relevance, and the integration of learned concepts.

6.3.2. Reflective Analysis:
Students will also submit a reflective analysis that evaluates their personal growth, learning outcomes from the experience, and their ability to critically assess their contributions and responsibilities (V3). This analysis will encourage students to connect their practical experiences back to the theoretical frameworks studied throughout the program.

D. Student Admission and Support:

1. Student Admission Requirements

Admissions occur only once during the summer vacation through the Unified E-Admission Portal for public universities in the Riyadh region, with no admissions for the second semester. Students can apply to IMSIU University via this portal, allowing them to complete their applications electronically and select their academic major based on their qualifications, grades, and preferences without needing to visit the university. Admission into the program will be granted based on the student's GPA after successfully completing the preparatory program. The Deanship of Admission and Registration oversees the admissions process. Eligibility Requirement is stated in IMSIU Undergraduate Study and Examination. Please note that the Deanship for Registration provides an admission guide, available via the link Admission 1446 .

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

The Bachelor of Science in Biology Program provides a comprehensive orientation for new students, conducting an orientation week at the commencement of each semester. During this week, students can meet fellow newcomers, current student leaders, faculty, and staff; familiarize themselves with the campus; learn about student services and academic programs; and address their individual needs. They receive QR codes of university policies and brochures designed to enhance their understanding of the university environment, including program, services, facilities, rights, and responsibilities. In addition to the orientation week, an orientation meeting is held at the beginning of each semester, attended by all new students and key faculty members, including the college's dean, program manager and academic advisor. This meeting serves to convey essential academic information and provide a forum for students to pose inquiries. To further assist students with exceptional needs, the program offers tailored support through specialized academic advising sessions that focus on individualized learning strategies and effective resource utilization. A peer mentoring system is established to connect new students with upperclassmen who can offer guidance specific to coursework and project challenges. Additionally, workshops on time management and study techniques are organized to facilitate navigation of the rigorous curriculum. Finally, access to specialized tutoring services ensures that students facing unique academic challenges receive the ultimate support necessary for their success.

3. Student Counseling Services

(Academic, professional, psychological and social)
(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

The Bachelor of Science in Biology Program offers specialized counseling services that address academic, professional, psychological, and social needs, tailored specifically for the program's students.

Academic Counseling: In addition to standard institutional support, students have access to focused academic counseling sessions that cater to the unique challenges of the biology curriculum. Advisors provide targeted strategies for managing coursework and research projects.

Professional Development: Students receive personalized career counseling that includes workshops on industry trends specific to biology fields. This program also facilitates networking opportunities with professionals in the industry.

Psychological Support: The program offers dedicated mental health resources, including workshops on stress management and resilience tailored to the demands of rigorous academic study, ensuring students can maintain their well-being.

Social Support Services: To foster a sense of community, the program organizes social events

and peer support groups that are specifically designed for students within the Program, promoting collaboration and camaraderie.

4. Special Support

(Low achievers, disabled, gifted, and talented students).

The Bachelor of Science in Biology Program (via the Head of the Department) and the University of Imam Mohammad Ibn Saud Islamic university provide care and support for the low achievers and the disabled students. Furthermore, the deanship for academic affairs has established a Center Special Needs Services (CSNS). As for the underachieving students, they are identified and provided with remedial programs to help them overcome the difficulties hindering their progress into the program. These students are distributed among the academic advisors at the department and are given due interest. They are met on a regular basis by their academic advisors who are asked by the academic advising coordinator (after the coordination with the CSNS) to make an appointment. During these meetings, the students are provided with advice, and guidance to help the students make decisions, related to registration decisions, deletion, addition, grievance or even transfer to another program. Furthermore, the program has established the Student Academic Support Center (SASC) that offers several specialized courses for underachieving students, so that they can finish graduation requirements and catch up with their colleagues. These students are also offered several programs, lectures, and workshops on selected topics in which they can develop and strengthen their knowledge and language skills. This process of following up these underachieving students continues until their graduation. Both program and institution pay due attention to students of special needs (e.g., disabled students). They are provided with special care. Their special needs are considered for access to the building, especially during the exams. For the gifted and talented students, the university has established a department for creativity and talent to identify and to develop the abilities of these students named Department of Gifted and Talented Care. This is achieved through holding several extracurricular activities to attract and to encourage talented students to develop their abilities and gifts.

In addition, Psychological and Social Counseling Unit, at the Deanship of Student Affairs, is a vital part of the Deanship of Student Affairs, aiming to provide psychological and social support to students. The unit offers comprehensive services that contribute to enhancing the mental health and academic well-being of students.

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	Biology	Plant science Zoology Microbiology Parasitology	Teaching and research experience	1 1 1 1	1 1 1 1	2 2 2 2
Associate Professor	Biology	Plant science Zoology Microbiology Parasitology	Teaching and research experience	1 1 1 1	1 1 1 1	2 2 2 2

Assistant Professor	Biology	Plant science Zoology Microbiology Parasitology	Teaching and research experience	2 2 2 2	2 2 2 2	4 4 4 4
Lecturer	Biology	Plant science Zoology Microbiology	Teaching and research experience	2 2 2	2 2 2	4 4 4
Teaching Assistant	Biology	Plant science Zoology Microbiology	Teaching and research experience	2 2 2	2 2 2	4 4 4
Technicians and Laboratory Assistant	Educational Background	A bachelor's degree in biology, or a related field	Technical skills for lab support	2	2	4
Administrative and Supportive Staff	Educational Background	Bachelor's degree in administration, Business, Education, or a related field.	Expertise in office management and coordination skills	2	2	4
Others (specify)	Higher Education Administration	Familiarity with quality assurance frameworks and standards	Expertise in quality assurance in higher education	2	2	4

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

Learning resources required by the Program (textbooks, references, and e-learning resources and web-based resources, etc.)

The planning and acquisition of these resources are vital for ensuring that students receive a comprehensive and effective education. The department follows a structured approach to identify and procure the necessary textbooks, reference materials, and Lab resources to support the curriculum.

Step 1: Course Committee Formation

For each course, faculty committees are responsible for:

- Course Description: Drafting a clear syllabus.
- Learning Resources:
  - Required Textbooks: Essential texts for course completion.
  - Essential References: appropriate Journals for understanding.
  - Recommended Materials: Additional readings and resources.
  - Electronic Materials: Utilizing platforms like Blackboard for course delivery.
- Other Resources: chemicals, reagents, and kits relevant to the course.

Step 2: Compilation and Submission Committees submit their resource lists to the Department Head for review.

Step 3: Approvals
The Department Council approves the resources, and the Department Head requests procurement through the University Central Library and IT Deanship.

Required Learning Resources

- **Textbooks:** Core and advanced texts in biology.
- **Reference Materials:** Access to journals, reports, and databases.
- **Electronic Resources:** Blackboard for course management and supplementary online courses.
- **Others:** chemicals, reagents, and kits for practical applications.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

For the planning and acquisition of resources for library, laboratories, and classrooms, the department proceeds as follows:

Classrooms

- **Lecture Halls:** Equipped with audiovisual systems, smart boards, and comfortable seating for large groups.
- **Seminar Rooms:** Smaller classrooms for discussions, group work, and interactive learning sessions.

Laboratories

- **Biology Labs:** Equipped with Chemicals, Reagents, Kits, Beakers, Bunsen Burners, Burettes, Coverslips, Crucibles , Droppers, Filter Papers, Flasks, Forceps, Funnels, Hot Plates, Inoculating Loops, Litmus Papers, Measuring Cylinders, Petri Dishes, Pipettes, Spatulas, Test Tubes, Thermometers, Wash Bottles, Analytical Lab Balance, Autoclave, Centrifuge, Dissecting trays, Dyes, Forceps, Freezers, Hybridization oven, Incubators, Light Microscopes, Magnetic stirrers, Microcentrifuge, Petri dishes, Refrigerators, Scalpels, Shakers, Slides, Spectrophotometers, Thermomixers, Vortexers, Water baths, for practical applications.

Library

- **Biology Section:** A well-stocked section with textbooks, reference books, research journals, and online resources related to biology.
- **Study Areas:** Quiet study spaces, group study rooms, and access to computers for research and collaboration.
- **Online Database Access:** Subscriptions to journals and databases relevant to biology.

Collaboration Spaces

- **Group Study Rooms:** Spaces for students to collaborate on projects and study together.
- **Common Areas:** Informal areas for students to meet and discuss work, equipped with seating and whiteboards.

Technology and Equipment

- **Computers and Software:** Access to computers with necessary software for biology.
- **Projection and Audio-Visual Equipment:** For presentations and lectures.

Office Spaces

- **Faculty Offices:** Spaces for faculty members to meet with students, conduct research, and prepare course materials.
- **Administrative Offices:** For program coordinators and administrative staff to manage program logistics and student services.

Research Facilities

- **Research Labs:** Specialized spaces for faculty and senior students to conduct research (in particular, to complete the capstone research project BIO 1499), equipped with necessary tools and technologies.
- **Collaboration with External Institutions:** Access to local research institutions, businesses, and organizations for internships and applied projects and Field Training.

Online Learning Facilities

- **Learning Management System (LMS):** A robust platform (e.g., Blackboard) for delivering course materials, managing assessments, and facilitating online discussions.
- **Virtual Classrooms: T**ools for conducting online classes and webinars to support remote learning.

Extracurricular Spaces

- **Science Clubs:** Dedicated spaces for student organizations and extracurricular activities related to biology.
- **Event Spaces:** Areas for hosting guest lectures, workshops, and conferences**.**

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

Procedures for a Healthy and Safe Learning Environment include:

- Physical Safety: Ergonomic classrooms, emergency plans, and equipment maintenance.
- Health and Well-Being: Access to mental health resources, wellness activities, and peer support.
- Inclusivity: Diversity training, anonymous feedback channels, and mentorship programs.
- Reporting Mechanisms: Designated contacts and simple incident reporting.
- Continuous Improvement: Regular surveys for feedback.

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

The Quality Assurance Manual-College of Science is stated according to on SQMAA and SMQES that represent internal quality assessment processes. This system is carried out by Vice-Rectorate for Institutional Development and Community Engagement through the Deanship for Development and Quality. The procedures follow the directives of ETEC and related practical template and forms; see ETEC-Quality Documents and Accreditation Templates.

Program review and its development is periodically assessed through the following processes:

- Course reports are submitted to the program manager every semester.
- The appropriate teaching staff committee oversees assessment and modification.
- Prepare and monitor the annual program report.
- Conduct and analyze survey's opinion of the students about the courses and the program.
- Conduct and analyze survey's opinion of the employers about the program.
- Program manager reviews the proposals submitted by the previous committees and makes appropriate decision after approbation of the department council.
- Monitor a global review for the development of the program periodically every five years if necessary.

All the previous processes follow the Teaching\Learning Quality Assurance Process Diagram:

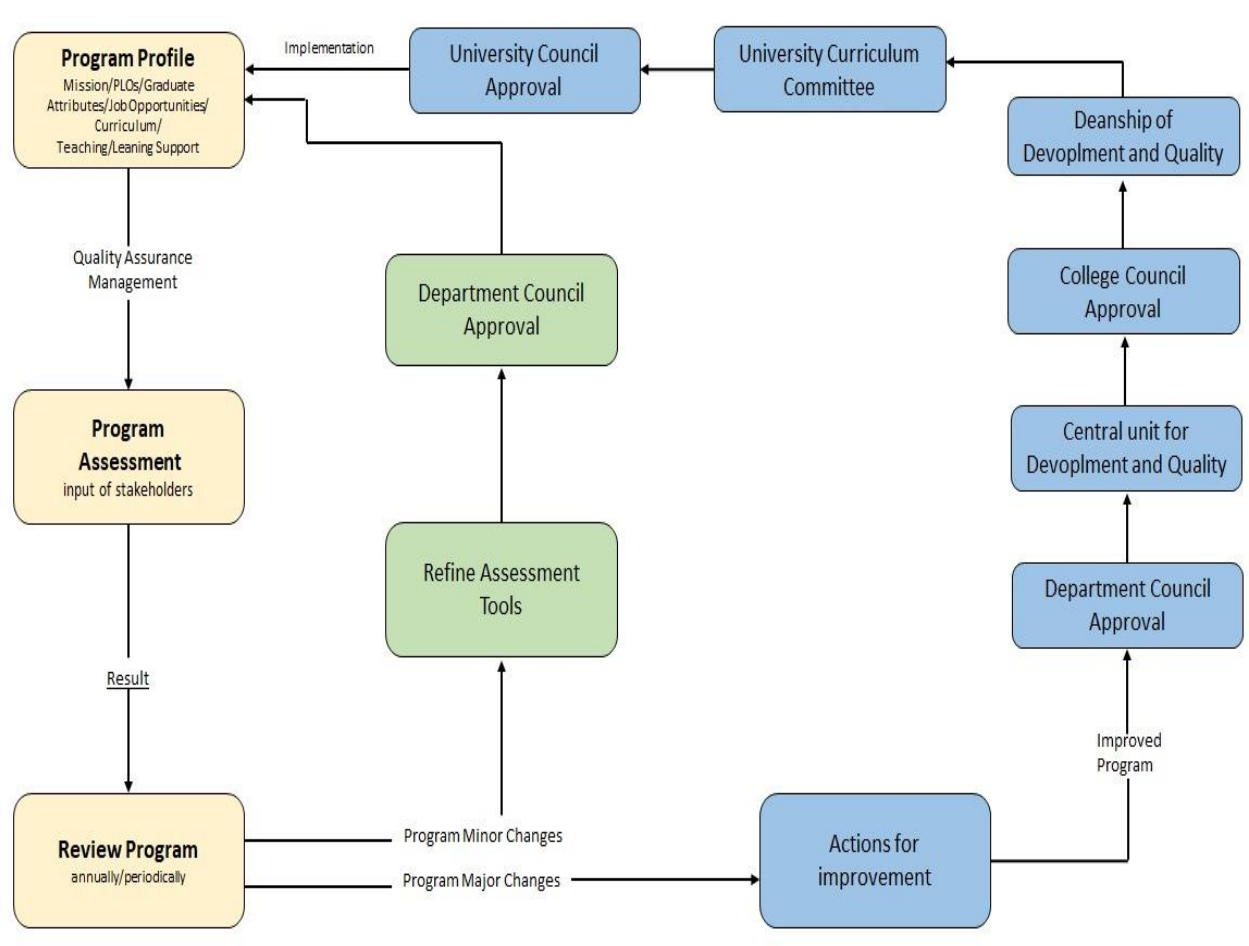

Figure 1: Teaching\Learning Quality Assurance Process Diagram

2. Procedures to Monitor Quality of Courses Taught by other Departments

The key procedures to monitor the quality of courses in our program that are taught by other departments:

1. Course Approval and Evaluation

Prerequisite Checks: Review and approve course prerequisites to ensure they align with our program requirements.

Syllabus Review: Collaborate with other departments to assess syllabi for alignment with our learning objectives and educational standards.

2. Feedback Collection

Student Evaluations: Gather and analyze student evaluations to assess course quality, teaching effectiveness, and relevance to the curriculum.

Focus Groups: Conduct focus groups with students to obtain in-depth feedback about their experiences in these courses.

3. Monitoring and Assessment

Semester Course Evaluation (course report): Implement a regular review process to evaluate course effectiveness and alignment with program goals.

4. Data Analysis

Performance Metrics: Monitor student performance data, including grades and completion rates, to identify trends and areas needing improvement.

Impact Assessment: Analyze how well these courses prepare students for advanced coursework in biology.

5. Interdepartmental Collaboration

Regular Meetings: Hold meetings with relevant departments to discuss course quality, gather feedback, and collaborate on improvements.

Joint Committees: Participate in committees with other departments to address shared course offerings and ensure quality.

6. Continuous Improvement

Professional Development: Encourage faculty teaching these courses to participate in professional development opportunities.

Curriculum Updates: Work with departments to ensure course content is current and reflects industry trends and advancements.

7. Accreditation Compliance

Standards Alignment: Ensure that all monitored courses meet accreditation requirements and quality standards.

Documentation: Maintain detailed records of evaluations, feedback, and improvements made to courses.

8. Stakeholder Engagement
Advisory Board Input: Involve advisory boards in reviewing course relevance and quality.
Alumni Feedback: Seek insights from alumni regarding how well these courses prepared them for their careers or further studies.

3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections).

The Department adopted the following processes to ensure the consistency between male and female sections:

- Teaching in both sections is at the same time, using the same learning materials.
- Quizzes, midterm exams, Lab reports, Lab exam, and final exam are unified in both sections.

4. Assessment Plan for Program Learning Outcomes (PLOs)

The assessment plan focuses on achieving a "Mastered" level of performance as a key indicator of success and to ensure that we continually refine and enhance our program to meet educational objectives effectively. This ongoing process consists of seven distinct phases designed to systematically assess and enhance program learning outcomes.

Phases of Assessment

Phase 1. Data-Collection Methodology: Utilize both direct and indirect methods to gather relevant data (as detailed in Section C.6).

Phase 2. Benefits and Drawbacks: Analyze the advantages and disadvantages of each data-collection method to ensure effectiveness.

Phase 3. Evaluation of Methods: Assess the appropriateness of the selected data-collection methods for the specific learning outcomes.

Phase 4. Data Collection: Implement the chosen methods to gather data systematically.

Phase 6. Evidence Interpretation: Analyze and interpret the collected data to evaluate performance against learning outcomes.

Phase 5. Reporting and Documentation: Compile and document findings, along with the analysis, to provide a comprehensive overview of results.

Phase 7. Improvement Identification: Use the insights gained from the assessment to pinpoint areas for program improvement and enhancement.

Continuous Improvement

At each cycle of assessment, we leverage the information obtained to document, analyze, and improve all components of the program. This process is guided by relevant key performance indicators (KPIs).

Program Learning Outcomes (PLOs) Assessment Time Plan

Domain	PLOs	Year 1	Year 2	Year 3	Year 4
Knowledge and Understanding	K1	✓	✓		
	K2			✓	✓
Skills	S1		✓		
	S2			✓	
	S3				✓
Values, Autonomy, and Responsibility	V1				✓
	V2				✓
	V3				✓

Program Learning Outcomes (PLOs) Executive Plan

Domain	PLOs	Assessment Methods (Direct and Indirect)	Targeted Performance (%)	Implementation plan How? Who? When? Where?
Knowledge and Understanding	K1	**Direct** Exams Quizzes Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 80% of the CLO grade	How? Calculating students' pass rate in the BIO 1101, BIO 1111, BIO 1113, BIO 1121, BIO 1231, BIO 1237, BIO 1241, BIO 1251, BIO 1212, BIO 1218, BIO 1232, BIO 1242 and BIO 1252 courses. Who? Course's coordinator. When? 1st and 2nd years. Where? Biology Department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
	K2	**Direct** Exams Quizzes Projects Presentations	85% of students have a grade of at least 80% of	How? Calculating students' pass rate in the BIO 1314, BIO 1322, BIO 1343, BIO 1353, BIO 1324, BIO 1333, BIO 1345, BIO 1415, BIO 1434, BIO 1454

		Laboratory Assessments Self-assessment Peer assessment	the CLO grade	and BIO 1455 courses. Who? Course's coordinator. When? 3rd and 4th years. Where? Biology Department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
Skills	S1	**Direct** Exams Quizzes Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 70% of the CLO grade	How? Calculating students' pass rate in the BIO 1231, BIO 1237, BIO 1241, BIO 1251, BIO 1212, BIO 1218, BIO 1232, BIO 1242 and BIO 1252 courses. Who? Course's coordinator. When? 2nd year. Where? Biology Department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
	S2	**Direct** Exams Quizzes Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 70% of the CLO grade	How? Calculating students' pass rate in the BIO 1314, BIO 1322, BIO 1343, BIO 1353, BIO 1324, BIO 1333 and BIO 1345 courses. Who? Course's coordinator. When? 3rd year. Where? Biology Department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
	S3	**Direct** Exams Quizzes Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 70% of the CLO grade	How? Calculating students' pass rate in the BIO 1415, BIO 1434, BIO 1454, BIO 1455 and BIO 1499 courses. Who? Course's coordinator. When? 4th year. Where? Biology Department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually

Values, Autonomy, and Responsibility	V1	**Direct** Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 85% of the CLO grade	How? Evaluating students' performance in field training sessions (BIO 1497 course). Who? Training supervisor in coordination with the supervisor from the department. When? 4th year. Where? The training organization in coordination with the Biology department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
	V2	**Direct** Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 85% of the CLO grade	How? Evaluating students' performance in field training sessions (BIO 1497 course). Who? Training supervisor in coordination with the supervisor from the department. When? 4th year. Where? The training organization in coordination with the Biology department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually
	V3	**Direct** Projects Presentations Laboratory Assessments Self-assessment Peer assessment	85% of students have a grade of at least 85% of the CLO grade	How? Evaluating students' performance in field training sessions (BIO 1497 course). Who? Training supervisor in coordination with the supervisor from the department. When? 4th year. Where? The training organization in coordination with the Biology department.
		Indirect Questionnaires Surveys Focus Groups Course Evaluations		Who? Development and Quality Unit When? Annually

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Leadership	Faculty, program leaders, administrative staff	Surveys, interviews	End of academic year
Effectiveness of Teaching & Assessment	Students, alumni, faculty	Classroom observations, surveys, focus groups	End of each semester
Learning Resources	Students, faculty, program leaders	Surveys, resource audits	Beginning of each semester
Services (e.g., advising, tutoring)	Students, administrative staff, faculty	Surveys, interviews	End of academic year
Partnerships (e.g., industry collaborations)	Employers, program leaders, alumni	Surveys, interviews, reports	End of academic year
Curriculum Relevance	Students, faculty, employers	Surveys, focus groups, course evaluations	End of each semester
Student Outcomes	Graduates, employers, faculty	Surveys, interviews	End of academic year
Alumni Success	Alumni, employers	Surveys, interviews	Annually
Resource Allocation	Faculty, administrative staff	Financial audits, surveys	End of academic year
Program Review and Improvement	Independent reviewers, faculty, program leaders	Reports, focus groups, surveys	Every four years

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)

Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.

Evaluation Methods (e.g., Surveys, interviews, visits, etc.)

Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

6. Program KPIs*

The period to achieve the target: 1 year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
Teaching and Learning Standard					
1	KPI-P-01	Students' Evaluation of Quality of learning experience in the program (Average of the overall rating of final year students of the quality of learning experience in the program, satisfaction with the various services offered by the program (restaurants, transport, sports facilities, academic, vocational, psychological guidance..), student satisfaction with the adequacy and diversity of learning sources (references, periodicals, information databases... etc.) on a five-point scale in an annual survey)	4.0 of 5.0	Annual student survey (5-point scale)	End of the academic year
2	KPI-P-02	Students' evaluation of the quality of the courses (Average of students' overall rating for the quality of courses on a five-point scale in an annual survey)	Average rating for the two semesters of 4.0/5.0	Annual student survey (5-point scale)	End of each semester
3	KPI-P-03	Completion rate (In each cohort, the proportion of undergraduate students who completed the program in minimum time)	85% completion in minimum time	Program records and tracking	Annually, at graduation
4	KPI-P-04	First-year students retention rate (Percentage of first-year undergraduate students who continue at the program the following year to the total number of first-year students in the same year)	75% retention rate	Comparison of first-year enrollment to second-year enrollment	Annually, after first-year completion
5	KPI-P-05	Students' performance in the professional and/or national examinations (Percentage of	80% pass rate	Analysis of examination results	Annually, after examination

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
Teaching and Learning Standard					
		students or graduates who were successful in the professional and/or national examinations, or their score average and median (if any))			results are published
6	KPI-P-06	Graduates' employability and enrolment in postgraduate programs (Percentage of graduates from the program who, within a year of graduation, were: a. employed within 12 months, b. enrolled in postgraduate programs during the first year of their graduation to the total number of graduates in the same year)	70% employed or enrolled	Graduate follow-up survey and employment records	Six months post-graduation
7	KPI-P-07	Employers' evaluation of the program graduate's proficiency (Average of the overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey)	Average rating of 4.0/5.0	Annual employer survey (5-point scale)	Annually, after graduation
Teaching Staff Standard					
8	KPI-P-08	Ratio of students to teaching staff (Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program)	15:1 students-to-staff ratio	Program records	Annually
9	KPI-P-09	Percentage of publications of faculty members (Percentage of full-time faculty members who published at least one research paper during the year to total faculty members in the program)	60% of faculty members	Program publication records	Annually
10	KPI-P-10	Rate of published research per faculty member (The average number of refereed and/or	2 publications per faculty	Program publication records	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
Teaching and Learning Standard					
		published research per faculty member during the year (total number of refereed and/or published research to the total number of full-time or equivalent faculty members during the year))	member		
11	KPI-P-11	Citations rate in refereed journals per faculty member (The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full-time or equivalent faculty members to the total research published))	Average of 10 citations per faculty member	Program citation records	Annually
12	KPI-P-12	Graduates' satisfaction with career preparation (The average rating)	4.0 of 5.0	Annual student survey (5-point scale)	Six months post-graduation
13	KPI-P-13	Students' research skills assessment (The average rating)	4.0 of 5.0	Exit-survey (5-point scale)	End of the academic program

M: male; F: female; C: combined
ND: Not detected
* including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	**Department of Biology Council**
Reference No.	**Meeting No. 6**
Date	**29/9/2024**