Program Specification
— (Bachelor)

Program: **BACHELOR of SCIENCE in BIOLOGY**	
Program Code (as per Saudi university ranking): **051102**	
Qualification Level: **6ᵗʰ Level (Bachelor's degree)**	
Department: **BIOLOGY**	
College: **SCIENCE**	
Institution: **KING KHALID UNIVERISTY**	
Program Specification: New ☐ updated* ☒	
Last Review Date: **10/03/1445 H. − 27/9/2023 G.**	

*Attach the previous version of the Program Specification.

Table of Contents

A. Program Identification and General Information

1. Program's Main Location :

Boys Section: College of Science, KKU University Main Campus, AlFara'a

Girls Section: Female College of Science, ABHA

2. Branches Offering the Program (if any):

Not applicable

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

N. A.

4. Professions/jobs for which students are qualified

The academic qualification of the program graduates was assigned based on the Ministry of Human Resources and social development. At the end of the program, the student will be qualified for the following professional jobs and occupations:

- Researchers and specialists in specifications, metrology, and calibration.
- Environmental protection specialist.
- Researcher and laboratory specialist.
- Environmental monitors.
- Specialists in laboratories of some ministries and Saudi research agencies like the ministry of Environment, Water, and agriculture, for the environmental protection.
- Nutritional specialist.
- Teacher in the public and private schools (The student will be qualified for this job by getting a diploma in education after graduation).
- Teaching assistant and researchers at universities and scientific research centers.

5. Relevant occupational/ Professional sectors:

Governmental Sectors, like:

- Ministry of Education and Higher Studies (*Public Schools of Different Levels* - Research Laboratories).
- Ministry of Environment, Water and Agriculture (i.e. National Centre of Wild-life Development – Relative diagnostic laboratories for livestock, animals, plants and water analysis – Microbiology laboratories – Genetic Engineering laboratories).
- Ministry of Health (i.e. Hospitals in the special departments of nutrition monitoring, laboratories, Biological "Biosafety & Biohazard and risk management).
- Ministry of Industry (i.e. Factories of manufacturing foods for human consumption).
- General Directorate of Meteorology
- Others; Biology-related Sectors in the Interior and Military Ministries, like Forensic and Toxicology laboratories (Biological Samples analysis).

Private Sectors:

- Private Microbiological laboratories
- Private Hospitals (Nutrition Department - Laboratories - Biosafety and Hazard Risk Management Sectors).
- Companies of Environment Protection from Biological Wastes and Hazards.
- Private Foods' Factories.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
Biology	126	- NA

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
N. A.	---

8. Total credit hours: (**126**)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

Provide a high-quality academic program that qualifies its graduates knowledgeably, skillfully, and perceptively to compete in the labor market and serve the environment and society.

2. Program Goals:

1. Provide a high-quality academic program that qualifies its graduates knowledgeably, cognitively and skillfully to serve the environment and community and to strongly compete in the labor market.
2. Develop the academic and institutional environment of the program in the light of quality standards which encourage creativity and innovation.
3. Provide the necessary ingredients for conducting outstanding scientific research in cooperation with governmental and private agencies concerned with biological research.
4. Strengthen the relationship of the student and the graduate with the community through identification of the labor market, field training, and conducting field and biological research studies.
5. Form partnerships with prestigious international and regional universities to transfer and localize modern technology.

3. Program Learning Outcomes*

Knowledge and Understanding:

K1	Explain the fundamental concepts, theories and principles of the different biological phenomena and scientific terms.
K2	Describe the environmental conditions and their impact on the ecosystem and identify the principles of biodiversity, taxonomy, and vital functions in living organisms.
K3	Outline the advanced processes, techniques, and applications in the field of biological sciences.
K4	Illustrate the abnormal conditions that biological organisms may suffer from and how to be diagnosed and treated.
K5	State the theoretical concepts of the biochemical and physiological changes and relationships between cells, tissues, and organs.

Skills

S1	Establish the appropriate scientific methods and techniques for analyzing raw data and solving environmental problems.
S2	Apply the abnormal biological lab results and use statistical approaches when evaluating data.
S3	Amend biological and environmental control measures and report the different ways in management and maintenance of biological as well as environmental balances.
S4	Use microscopic examination and analytical tests of cells, tissues, blood, body fluids, and other materials.

S5	Design proper procedures, for collecting, safe handling, processing, and analyzing biological specimens to maintain accuracy and precision.
Values, Autonomy, and Responsibility	
V1	Respect leadership, team player, and the desire for continuing education for one's professional development.
V2	Support the ability to handle stressful situations calmly and efficiently.
V3	Show effective communication within groups and with other biological, laboratory professionals and understand limits of knowledge and skill and seeks advice and assistance.
V4	Utilize computer technology applications to interact with biological and environmental laboratory information systems.

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

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	12	9.52%
	Elective	-	-	-
College Requirements	Required	9	31	24.61%
	Elective	-	-	-
Program Requirements	Required	31	83	65.87%
	Elective	--	--	--
Capstone Course/Project	--	--	--	--
Field Training/ Internship	--	--	--	--
Residency year	--	--	--	--
Others	--	--	--	--
Total		46	126	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	101 BIOL-4	General Biology	Required	-	4	College
	101 MATH-3	Mathematics 1	Required	-	3	College
	011 NGL-6	Intensive English Program	Required	-	6	Institution
	111 IC1-2	Entrance to Islamic Culture	Required	-	2	Institution
Level 2	101 CMS-2	Introduction to Computer	Required	-	2	Institution
	101 CHEM-4	General Chemistry-1	Required	-	4	College
	101 PHYS-4	Introduction to Physics	Required	-	4	College
	201 ARAB-2	Arabic Language Skills	Required	-	3	College
	110 NGL-3	Scientific English	Required	011 NGL-6	3	College
	112 IC1-2	Islamic Culture 2	Required	-	2	Institution
Level	102 CMS-3	Computer Skills	Required	101 CMS-2	3	College

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
3	202 ARAB-2	Arabic Editing	Required	-	2	Institution
	113 IC1-2	Islamic Culture 3	Required	112 IC1-2	2	Institution
	212 BIOL-2	Cytology	Required	101 BIOL-4	2	Department
	251 BIOL-2	Histology	Required	101 BIOL-4	2	Department
	241 ZOOL-3	Invertebrates	Required	101 BIOL-4	3	Department
	271 BIOL-2	Plant Morphology	Required	101 BIOL-4	2	Department
Level 4	114 ICI-2	Islamic Culture 4	Required	-	2	Institution
	261 BIOL-2	Algae	Required	101 BIOL-4	2	Department
	252 BIOL-4	Chordata	Required	101 BIOL-4	4	Department
	271 CHEM-3	Organic Chemistry	Required	-	3	College
	272 BIOL-3	Plant Anatomy	Required	271 BIOL-2	3	Department
Level 5	312 BIOL-3	General Genetics	Required	212 BIOL -2	3	Department
	342 BIOL-3	General Parasitology	Required	241 ZOOL-3	3	Department
	351 STAT-3	Biochemistry	Required	-	3	College
	362 BIOL-2	Archegoniate	Required	271 BIOL-2 272 BIOL-3	2	Department
	363 BIOL-3	Bacteria and Viruses	Required	101 BIOL-4	3	Department
Level 6	321 BIOL-3	Ecology	Required	101 BIOL-4	3	Department
	343 BIOL-3	Entomology	Required	241 ZOOL-3	3	Department
	353 BIOL-4	Animal Physiology 1	Required	252 BIOL-4 351 STAT-3	4	Department
	373 BIOL-4	Basic Taxonomy of Flowering Plants	Required	271 BIOL-2 272 BIOL-3	4	Department
	374 BIOL-3	Plant Physiology 1	Required	272 BIOL-3 351 STAT-3	3	Department
Level 7	431 BIOL-1	Microscopic Techniques	Required	251 BIOL-2 272 BIOL-3	1	Department
	432 BIOL-3	Research Project	Required	-	3	Department
	444 BIOL-3	Medical and Economic Entomology	Required	343 BIOL-3	3	Department
	454 BIOL-2	Animal Physiology 2	Required	353 BIOL-4	2	Department
	475 BIOL-3	Plant Physiology 2	Required	374 BIOL-3	3	Department
	464 BIOL-3	Mycology and Plant Pathology	Required	363 BIOL-3	3	Department
	476 BIOL-2	Experimental Plant Taxonomy	Required	373 BIOL-4	2	Department
Level 8	413 BIOL-3	Molecular and Cytogenetics	Required	312 BIOL-3	3	Department
	433 BIOL-2	Flora and Fauna of Saudi Arabia	Required	-	2	Department
	414 BIOL-2	Biotechnology	Required	363 BIOL-3	2	Department
	422 BIOL-2	Environmental Pollution	Required	321 BIOL-3	2	Department
	455 BIOL-2	Immunology	Required	353 BIOL-4 363 BIOL-3	3	Department
	456 BIOL-3	Embryology	Required	252 BIOL-4	3	Department
	477 BIOL-2	Economic Botany	Required	374 BIOL-3	2	Department

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

3. Course Specifications:

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

https://drive.google.com/drive/folders/1BKB0uph3ggrnxNn6zuToq19J8Er648BX?usp=drive_link

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	K3	K4	K5	S1	S2	S3	S4	S5	V1	V2	V3	V4
101 BIOL-4	I	I	I	--	--	I	--	P	P	I	I	I	I	--
212 BIOL -2	--	I	--	--	I	I	I	--	I	--	I	I	I	--
251 BIOL-2	I	I	P	--	--	P	P	P	P	I	P	P	I	P
241 ZOOL-3	I	I	M	--	P	M	M	P	P	--	I	P	I	I
261 BIOL-2	I	I	P	P	--	P	P	P	--	--	P	P	I	P
271 BIOL-3	I	I	P	--	--	P	P	P	P	--	P	P	I	P
252 BIOL-4	I	I	--	P	P	P	P	P	--	P	P	P	--	P
272 BIOL-3	I	I	P	--	--	I	--	P	P	--	P	--	P	I
312 BIOL-3	I	I	--	--	--	I	P	P	P	--	P	I	--	P
342 BIOL-3	I	I	P	--	P	I	P	P	P	--	I	--	I	P
351 STAT-3	I	I	P	--	--	P	--	--	P	--	I	P	--	P
362 BIOL-2	I	I	--	P	I	I	P	P	--	P	P	P	--	P
321 BIOL-3	I	M	M	P	--	M	M	P	--	M	M	P	P	M
343 BIOL-3	--	P	M	--	--	M	M	--	--	M	P	M	--	P
363 BIOL-3	I	M	M	P	--	M	M	P	--	--	P	I	P	M
353 BIOL-4	I	M	--	--	P	M	M	P	--	--	M	P	--	M
373 BIOL-4	I	M	M	P	--	M	M	P	--	--	P	P	M	P
374 BIOL-3	M	M	--	P	--	M	M	P	P	--	M	P	M	M
431 BIOL-1	P	--	P	P	P	P	P	P	P	P	P	P	P	--
432 BIOL-3	M	--	--	P	P	M	M	P	P	--	M	--	P	M
444 BIOL-3	--	P	M	--	--	M	M	P	--	M	M	M	--	M
454 BIOL-2	M	--	--	M	P	--	M	P	P	--	M	--	M	M
476 BIOL-2	M	P	M	P	--	M	M	P	--	--	M	M	M	--
413 BIOL-3	M	--	M	--	M	M	M	M	--	--	M	M	--	M
433 BIOL-3	M	--	M	--	P	M	M	P	--	--	M	M	--	M
464 BIOL-3	M	--	M	P	--	M	M	P	P	--	M	--	--	P
475 BIOL-3	M	P	--	--	--	M	--	P	P	--	M	--	M	M

414 BIOL-2	M	M	--	M	--	--	M	M	--	M	M	M	M	M
422 BIOL-2	M	M	M	M	M	M	M	M	M	M	M	M	M	M
455 BIOL-2	M	--	--	M	--	M	M	M	--	--	M	M	M	--
456 BIOL-3	M	P	--	--	--	M	M	P	--	M	M	M	--	M
477 BIOL-2	M	M	M	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.

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

- Students will be able to recognize knowledge related to biological sciences and keep pace with its advanced biodiversity, processes, techniques, applications, and biochemical and physiological changes by:
- ➢ Traditional lectures.
- ➢ Practical classes (Labs., Herbarium, Greenhouse, Animal house, and Central Lab).
- ➢ Field trips for Research Project course and other courses to assigned places (Nature reserves, abattoirs, dairy and food factories, research centers…etc).
- ➢ Electronic learning.
- Students will be able to apply critical thinking and analytical skills for solving biological and environmental problems and demonstrate a critical analysis of new information and research findings relevant to execute biological and environmental control measures. Also, they will be able to perform the microscopic examination and analytical tests of biological specimens and interpret comprehensive biological laboratory results and use statistical approaches by.
- ➢ The practical classes of many courses aim to train the students to investigate properly, and skills of performance. This is done by supplying students with biological (Animals, plants, etc) and environmental (Soil, water, etc) samples and let them think about the proper selection of the samples and conservation. Also, the students are taught that good preparation for lab investigation is the key to success.
- ➢ Developing technical skills are very important when teaching the lab practical coursesand this is ensured by demonstrating and identifying probable mistakes and their impacts on the results and how to avoid them. Then each student is asked to do the critical stepsof the technique under the supervision of the course manager.
- ➢ Moreover, visiting some factories, farms, and research centers, participate in activities inside our department (Herbarium, Greenhouse, Animal house, and Central Lab) or at theuniversity, attend workshops etc., will help our students to acquire more and moreexperiences. Their interference and achievements are supervised by their instructors for directions and instructions to ensure the maximum development of their skills.

Students will be able to share effective communication within groups and with other biological laboratory professionals and utilize computer technology applications to interact with biological and environmental laboratory information systems. IT skills are developed in two ways:

- ➢ Two-course; Computer Science and Computer Skills 2 are offered at levels 2 and 3 ofthe programs. It is a practical course (3+2 credit hours/week) taught through a whole semester and it helps students to acquire IT skills.
- ➢ Instructors of some internship courses ask students to prepare essays on certain topics andthis requires visiting libraries, websites, and reading to finish the proposed essays.
- Students with low skills are stressed to acquire the skills by repetition, trial, and errors.

- The university's experience in E-learning, especially considering the Corona pandemic, showed remarkable success, and the continued investment and support for it will result in an effective experience for the student and professor and make its use as a means of learning more neat, orderly, and sober. In addition, it establishes a strong foundation for information, making it equivalent to traditional education. It is worth noting that the plan for the use of distance education in the department depends on the components of the basic components, namely students, faculty members, colleges, and support deanships, especially the Deanship of E-Learning and the Deanship of Libraries. The rules governing e-learning at the KKU:

(https://elearning.kku.edu.sa/sites/default/files/faculty/attachments/E-Rules2020.pdf)
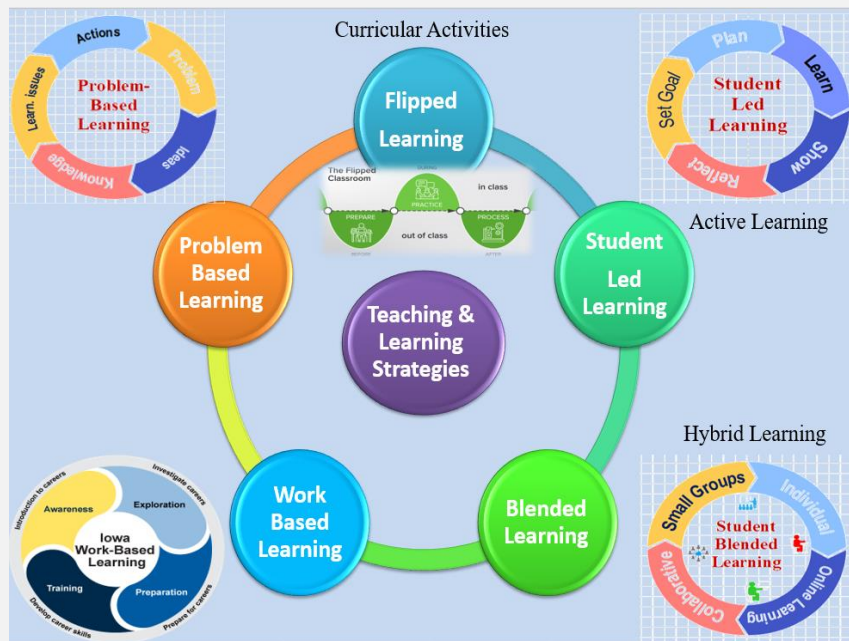
6. Assessment Methods for program learning outcomes.

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).

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The tools used for assessment of program learning outcomes will be direct and indirect methods of measurements:

Direct:

1. **measures** Theoretical Midterm exams per semester, 25%.
2. Practical exams per semester (25, 20+5%) according to the related subject outcomes.
3. Homework assignment or research project (5%) for some courses by searching in textbooks and the

web or by field trip reports and do presentations.

4. Quizzes, oral (5%) for some courses.

5. Final exam with different models of questions (compare, short essays, multiple-choice, etc) (Total percent is 40%).

6. For theoretical courses, mid exam, 30 %, Homework, Research project, and Quizzes 30% and Final exam with different models of questions (compare, short essays, multiple-choice, etc) (Total percent is 40%).

7. The practical exams of the lab skills are designed to test both skills and knowledge. This is done by duplicating test samples or repeating the same demonstration to ensure the self- confidence of the student towards his work and results. Many criteria are considered in the assessment process to ensure unforgettable skills, not just plain knowledge.

8. Students with unsatisfactory levels are focused on very early during the semester to ensure their improvement by the end of the semester and before graduation.

9. Communication skills are assessed through points and scores within the lab skills assessment sheet report. These scores indicate the ability of the student to communicate with others.

10. Also, reports prepared by students after the field trips (usually as groups) indicate how much they succeeded in communicating with people in the visited place and got the information in the report. The more correct information he writes the more scores he gets, and this indicates the more communication skills he has.

11. Assessment of student's interactions in classrooms and teamwork based on the student approaches in the lab and the capability of independent and proper work.

12. Assessment of knowledge acquired depends on reports prepared by students about visits and trips. Students present their reports using power-point slides followed by open discussion.

13. Program Annual Report (PAR)12- Courses Reports

14. Matrix of measuring learning outcomes for the course and the program

15. A set of common rubrics are used for both grading and assessment at the program level.

16. In some cases, student overall grades in courses may be used through impeded questions in Quiz, Midterm exam, or Final Exam. The intent is to use rubrics to help students understand the departmental expectations, gauge student progress over time, and to provide a basis for faculty discussions concerning possible areas for program improvement. In most cases, these rubric lines will be incorporated into a course-specific rubric that contains additional elements specific to the CLOs and expectations. Student grades are used in knowledge domains.

➢ **Laboratory Report Rubric:** It is used to assess full laboratory reports for the quality of writing and experimental design and data analysis. When used for program assessment, a minimum of 15% of the class or four students (whichever is less) are scored by two or more faculty members to ensure consistent application of the rubric.

➢ **Laboratory Notebook Rubric:** It is used by instructors to provide feedback to students and assess the quality of the students' laboratory notebooks and record keeping. It may be applied to individual laboratories or to the notebook. When used for program assessment, a minimum of 15% of the class or four students (whichever is less) are scored by two or more faculty members to ensure consistent application of the rubric.

➢ **Instructor Evaluation Rubric:** This rubric applied primarily in laboratory courses as a Check on the quality and ethics of student laboratory work along with their ability to function in teamwork and collaborative assignments. When used for program assessment, a minimum of 15% of the class or four students (whichever is less) are scored by two or more faculty members to ensure consistent

application of the rubric.

- ➢ **Literature Search Rubric:** This rubric outline expectation for a literature search and review that may be completed as an independent assignment or as part of larger written reports or oral presentations. When used for program assessment, a minimum of 15% of the class or four assignments (whichever is less) is scored by two or more faculty members to ensure consistent application of the rubric.
- ➢ **Undergraduate Student Presentation Rubric:** It used to provide feedback on oral and poster presentations. When used for program assessment, a minimum of 15% of the class or four students (whichever is less) are scored by two or more faculty members to ensure consistent application of the rubric.

Indirect Measures:

➢ On a periodic basis, the department will solicit feedback on graduate skills from alumni and their employers using either surveys or focus groups. These mechanisms may allow the department to reevaluate the target student outcomes to match changing needs in the biology field. The department expects that all numerical responses on this survey will be a 3 or higher and that written response will be generally positive, and constructive in improving department programs.

The department will ask for feedback from graduating students using surveys or focus groups to evaluate their perception of whether the degree has adequately prepared them for their chosen career. This may include job placement and graduate/professional school admission rates. The department expects that all numerical responses on this survey will be a 3 or higher and those written responses are generally positive, yet constructive in improving department programs.

➢ The department will periodically hold a focus group with existing biology majors' members. This will provide an opportunity to identify emerging problems quickly before they show up in tracked data. The department expects that student responses will be generally positive, yet constructive in improving department programs.

➢ The department will periodically collect feedback from faculty and instructors on their perceptions of student strengths and weaknesses.

➢ QA will prepare Excel sheets for each assessment tool to facilitate the use of the assessment.
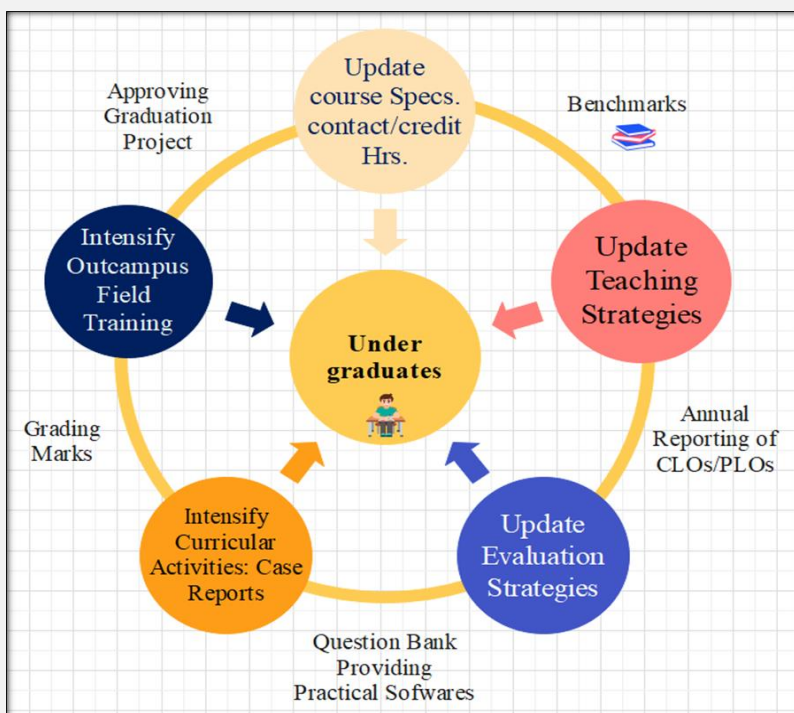
D. Student Admission and Support:

1. Student Admission Requirements

The Deanship of Admission and Registration according to the college councils' proposal submits a statement with the number of students to be admitted to the next semester or academic year in order to submit it to the university council.

Conditions necessary for admission to the university:
1. The student must have a certificate of general secondary school or its equivalent (from the inside kingdom or outside it).
2. The certificate or its equivalent must not exceed 5 years since the graduation of the holder from secondary school. In this respect, the university council may have the right to make exceptions if there are other convincing reasons.
3. The student must have good conduct.
4. The student must pass all tests or private interviews deemed necessary by the KKU council.
5. The student must be medically fit.
6. The student must get a letter of approval from his/her employer if he/she works in the public or private sector.
7. The student must satisfy any other condition identified by the university council.
8. To join the Bachelor of Science in Biology Program, an applicant must hold a Saudi High School Certificate Science Section (or it is equivalent), with a grade of 70% for both boy or girl (score may be higher or lower according to the levels and number of postsecondary students).

Other regulation concerning admission may be seen in these links:

1- Guide of admission to the KKU
   https://www.kku.edu.sa/sites/default/files/2020-10/KKU1442.pdf

2- Student's guide for rights and duties
   https://www.kku.edu.sa/sites/default/files/general_files/pdf/Administration/guide.pdf

3- Student's guide of KKU services
   https://dar.kku.edu.sa/sites/dar.kku.edu.sa/files/%D8%A7%D9%84%D8%AE%D8%AF%D9%85%D8%A7%D8%AA.pdf

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 orientation program for new students is held every time the department admits fresh students. The department Head presides over a welcoming session for new students attended by almost all the faculty members and administration staff. The Orientation program is designed to help students get acquainted with the following:
1. The vision, mission, and objectives of the department, college, and university.
2. University and college regulations and code of conduct.
3. Tips on leading a successful college life in line with their potential career goals.
4. Department and college facilities and places.
5. Plan a study review course.
6. Methods of evaluation.

7. Wellness, self-care.
8. Faculty expectations.
9. Certification and licensure information.

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).

- Academic advising is a key to success at any higher education institution through the Deanship of Student Affairs, represented in the units of guidance and counseling in the Deanship (https://sa.kku.edu.sa/ar/content/154), and in the colleges. A Student Advisory Committee is formed by the College which is responsible for student administration and support services. Faculty members are assigned advisors to help students understand the program requirements and regulations of the registration process. This is called an academic guide and it is decided by the program administration in a very organized process. A student group is nominated on a list sent by the student affairs committee of the college. Each student is informed about his academic advisor via announcements shown clearly on all the announcing boards of the college. The advisor is responsible for guiding each one of his groups to select subjects in the semester beginning and informing him about the importance of prerequisites and the optimum way to complete the program in the proper time. Each student has a portfolio with the academic advisor containing his personal and academic documents and all advising processes done for him from admission to graduation. The advisor or instructor, each staff must post his office hours clearly (10 h/week) to guide his nominated group or meet with students who might need help in taught courses. Faculty should make a file for each student in his counseling group where student contact information, a copy of student timetable, a copy of student academic record is kept and updated every semester. Students can get guidance and advice through the university website.

- The biology department considers academic advisers a valuable resource to students as they help plan their undergraduate careers and, ultimately, prepare them for graduation. Also, it aimed at guiding the students on different issues related to their academic progress and to help them find solutions to different academic problems such as academic delay so that the counselor seeks to provide appropriate counseling services and good educational care for students who are struggling and excelling and to design appropriate programs for them. Academic advising is related to assisting students with educational choices, degree requirements, academic policies/procedures, as well as broader concerns such as career and graduate school options in the future.

Career Counseling aims to uncover the professional interests, abilities, and aptitudes of students by means of measurement and diagnosis and evaluation by scientific methods, developing positive trends towards their work, providing information about job opportunities inside and outside the university, helping the student to make appropriate decisions for his professional and career future, and providing him with the skills to search for a job suitable for his qualifications, in addition to achieving a balance between his needs and desires and his own abilities. The academic advisor plays a prominent role in receiving employers for students to learn about the latest practical and technical developments and link them to their academic studies.

- Psychological guidance aims to help students overcome their psychological problems and disorders and achieve a high level of mental health in addition to studying psychological cases (depression - anxiety - obsessive - fear ...) and providing them with therapeutic services

such as cognitive and psychological behavior therapy by the specialists at thecenter and transferring cases that need to Medicinal treatment to psychiatric clinics.

- Each student enrolled receives SR 1000/month to support him (governmentalpromotion). This is guaranteed unless the student grade becomes less than 2 and it is not awarded for students after 10 levels of enrolment in the program.

- No teaching expenses are required from students and the whole program is offered for free and funded by thegovernment. A student employment fund is available to enhance students to share of the academic and research activities of the program and earn some money. This process increases the practical skills of students. The stationary center is convenient to the enrolled students in which all notebooks and course session documents are available.

- Social counseling aims to prepare the student to build positive social relationships with his community, as well build successful responses in facing the problems encountered in different situations, provide him with the necessary social skills, and enhance his role in contributing to community service and development. The university has different clubs to improve the social and career of students as:

  - Student Clubs Unit, KKU (https://clubs.kku.edu.sa/ar/clubsunit)
  - College clubs (https://clubs.kku.edu.sa/ar/collegeclubs)
  - College of Science Club (https://clubs.kku.edu.sa/ar/CScience)

  Central clubs in university

  - Housing Club (https://clubs.kku.edu.sa/ar/housing)
  - Toastmasters Club (https://clubs.kku.edu.sa/ar/tostmastrs)
  - Club of Arabic calligraphy and plastic art (https://clubs.kku.edu.sa/ar/ArCalligraphy)
  - Volunteer Work Club (https://clubs.kku.edu.sa/ar/volunteer)
  - Diving club (https://clubs.kku.edu.sa/ar/diving)
  - Equestrian Club (https://clubs.kku.edu.sa/ar/equestrain_club)
  - Reading Club (https://clubs.kku.edu.sa/ar/reading)
  - Manara Club (https://clubs.kku.edu.sa/ar/manarah)
  - Entrepreneurship Club (https://clubs.kku.edu.sa/ar/leading_businesses)
  - Nazaha Club (https://clubs.kku.edu.sa/ar/nazaha)
  - Wesal Club (https://clubs.kku.edu.sa/ar/wesal)
  - Scholarship students Club (https://clubs.kku.edu.sa/ar/Scholarship_Students)

4. Special Support

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

For disabled students:

The student population includes students with and without disabilities. The faculty often co- teach to address the wide-ranging needs of their students. NO separate special education classrooms. Instructors are strongly encouraged to inform students about available services and related procedures.

A good two-fold strategy is to include a statement on the instructor syllabus about disability services and to announce to the class at the start of each semester that any student with a disability who needs accommodations or related services can discuss options with the instructor in private.

This will help students with disabilities feel more comfortable speaking with the instructor about their needs and show a good faith effort on the instructor's part to make students aware that the department does have a system to help them obtain equal access. faculty use office hours for advising and try to solve the special needs of students.

- KKU has a special service for students with special needs through Center of Guidance and Counseling, Unit of Special Needs (https://sa.kku.edu.sa/ar), as well as Unit of Special Needs in Science collage as:
  ➢ Physiotherapy services.
  ➢ Speech therapy services.
  ➢ Occupational therapy services.
  ➢ Psychotherapy services.
  ➢ Adaptive services.

For low achiever's students

Instructors should first know well who low-achiever learners are? They are learners who usually lack basic knowledge or skills, have difficulty with incomprehension, lack of concentration, and confuse easily in the classroom. Our staff make registration of students' names in a special register for follow-up, change their attitudes towards them, give them clear, step by step instructions, give them extra help or explanation, motivate them all the time using all possible ways i.e. by words/awards / good marks to give confidence and give them other opportunities in the absence of an answer, not to use words that make them hate to study, be aware of their learning or studying habits and try to improve them, know their learning styles and adapt his/her teaching to them, set the objectives that students should achieve at the end of learning sessions and prepare how to assess their achievement. This will help in diagnosing the difficulties and know how to deal with the feedback that must be given to the student and prepare some procedures that students should follow or design and implement a remedial plan to remedy our students' points of weakness. Consulting and get advice as early as possible from colleagues, supervisor, psychological and social specialist regarding the learning issues of our students. In addition to, the work of the strengthening groups announced by the department administration to the weak students and select competent teachers to carry out. Also, taking additional lessons and focusing on weak students in explaining or understanding the unclear and difficult parts and answering some of their questions in the article.

For gifted and talented students: In classroom, our staff tries to:

➢ Learning how gifted students think to better support them.
➢ Creating tiered assignments for students to meet the needs of all students.
➢ Giving gifted students more complex tasks.
➢ Adding a second component to assignments, such as having them apply the skill they've learned to a real-world situation or asking them to write an explanation of their thinking.
➢ Including a variety of levels in your library research tasks.
➢ Utilizing their talents and interests.
➢ Exploring real-world applications.

There are various units and programs in the center for talent, creativity, and entrepreneurship, KKU (https://ctc.kku.edu.sa/):

- Units of Innovation Care, Applied Research, Intellectual Rights, Development and Training,

Feasibility Studies and Marketing, Project Management, and Public Relations and Media.

- Programs of Research Capacity Building, Apprenticeship program, Consulting Clinics, Protection of ideas and patenting, Contest ideas and inventions, Summer Mawhiba Program in Natural and Technical Sciences, Awareness, education, discovery, and nurturing program for the gifted.

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	Zoology	-	2	2	4
	Biology	Botany	-	2	2	4
	Biology	Microbiology	-	1	1	2
Associate Professor	Biology	Zoology	-	2	2	4
	Biology	Botany	-	2	2	4
	Biology	Microbiology	-	1	1	2
Assistant Professor	Biology	Zoology	-	7	7	14
	Biology	Botany	-	3	3	6
	Biology	Microbiology	-	3	3	6
Lecturer	Biology	-	-	4	4	8
Teaching Assistant	Biology	-	-	4	6	10
Technicians and Laboratory Assistant	Biology	-	-	1/Lab	1/Lab	1/Lab
Administrative and Supportive Staff	Biology	-	-	-	-	-
Others (specify)	Biology	-	-	-	-	-

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.)

- ➤ A copy of learning resources for each course is kept in related Course File in Program QA Unit.
- ➤ The University Deanship of Student Affairs distributes every year a form for requesting textbooks and web-based scientific resources needed. This form is distributed to all staff. Being filled, the form is sent back to the deanship and almost all the requested items will be available in the main library in a very short time.
- ➤ Also, KKU usually holds book exhibitions by inviting all local publishers and bookshops in the country. Each staff can select what he likes of books and send a list to the deanship of student affairs to make direct orders for buying the selected items. Staff take the responsibility of ensuring the unavailability of the requested items in the main library of the university.
- ➤ Membership of KKU in electronic & web-based resources is available with resources covering each program of the University. A list of the resources and access number is informed through the library management to each member of staff to get access to the resource.
- ➤ A subcommittee member in the department is concerned with the issues of libraries and books and takes over the responsibility of the organization of such matters in the department.
- ➤ Each staff member can easily have access to the Saudi National Digital Library.

Free access to the Internet is available through wire net cable installed to offices of all staff of the university and through wireless.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

Library:

- The central library in the university contains books enough for all students in the college, including biology students.
- Each college has a library with specialized books in the various fields of the college.
- The Saudi Digital Library enables students to access thousands of educational resources such as books, lectures, and scientific journals, and all students use their ID to enter its site.

- ➤ https://sdl.edu.sa/SDLPortal/ar/Publishers.aspx
- ➤ https://libsearch.kku.edu.sa/uhtbin/cgisirsi.exe/?ps=3kahuy3Kbk/MAIN/210680005/60/502/X

Teaching Laboratories:

Multiple teaching laboratories serve students in all areas of biology, including introductory courses and courses in botany, zoology, microbiology, biotechnology, and molecular biology. Our teaching labs are equipped with state-of-the-art instrumentation that students use regularly.

Equipment & Instrumentation

A committee for equipment and teaching laboratories is appointed by the College Dean and the Department has a representative member in it, which is responsible for gathering all staff's equipment and

materials requirements each year and arrange for their orders and received from the Purchase Department of the University.

Department provides Labs, herbarium, animal house, and greenhouse with all necessary equipment, tools, safety aids, and chemicals for undergraduate study. We have excellent Fermenters, PCR, Incubators, autoclaves, Ovens, Laminar flow, Spectrophotometers, flame photometers, Organic carbon estimators, and HPLC instruments.

Medical facilities

Inside each Lab and other places, first aid boxes are available for emergence. Near our campus, there is a medical center, and, in the college, we also have a medical room.

Classroom supplies

Each classroom is fitted with a whiteboard, an overhead projector, writing pens, dusters, computers, and Wi-Fi. The classrooms are regularly checked for any need or maintenance of audio and visual aids and other things by the Maintenance Department.

Textbooks and course.

A directory for each course is distributed at the beginning of each semester to students. One of the contents of this directory is a list of reference books or learning resources. At the end of the course, the student will be asked in the Course Evaluation Form to evaluate the textbooks and availability. Also, there are several study open places on all floors, computer rooms, Sports activities Room, Cafeteria, and theater.

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

College of science is committed to providing a safe and healthy campus environment. Among its highest priorities are the health and safety of all faculty, staff, and students, the visiting public, and members of the neighboring community. in order to implement environmental and occupational health and safety programs and to ensure compliance with all relevant governmental laws and regulations. A variety of health care services are offered to students, faculty, staff, and community members. We accept a wide range of health insurance plans.

➢ The campus health clinic is located close to the main campus and there is a small room for medical support inside the college building.

➢ Smoking is prohibited in any University facility and on any university grounds.

➢ First aids boxes are in all rooms and labs.

➢ The purpose of the biological safety program is to ensure the proper handling of hazardous biological materials, as well as hazardous waste management and disposal.

➢ Exposure to hazardous chemicals is kept at a minimum by using the appropriate Personal Protective Equipment and by performing experiments in a certified chemical fume hood.

➢ The hygiene committee oversees lab safety issues and reviews information regarding pertinent regulations and requirements.

➢ Fire prevention guidelines are listed in all places.

➢ Emergency exit doors in all parts with sufficient signboards in all places.
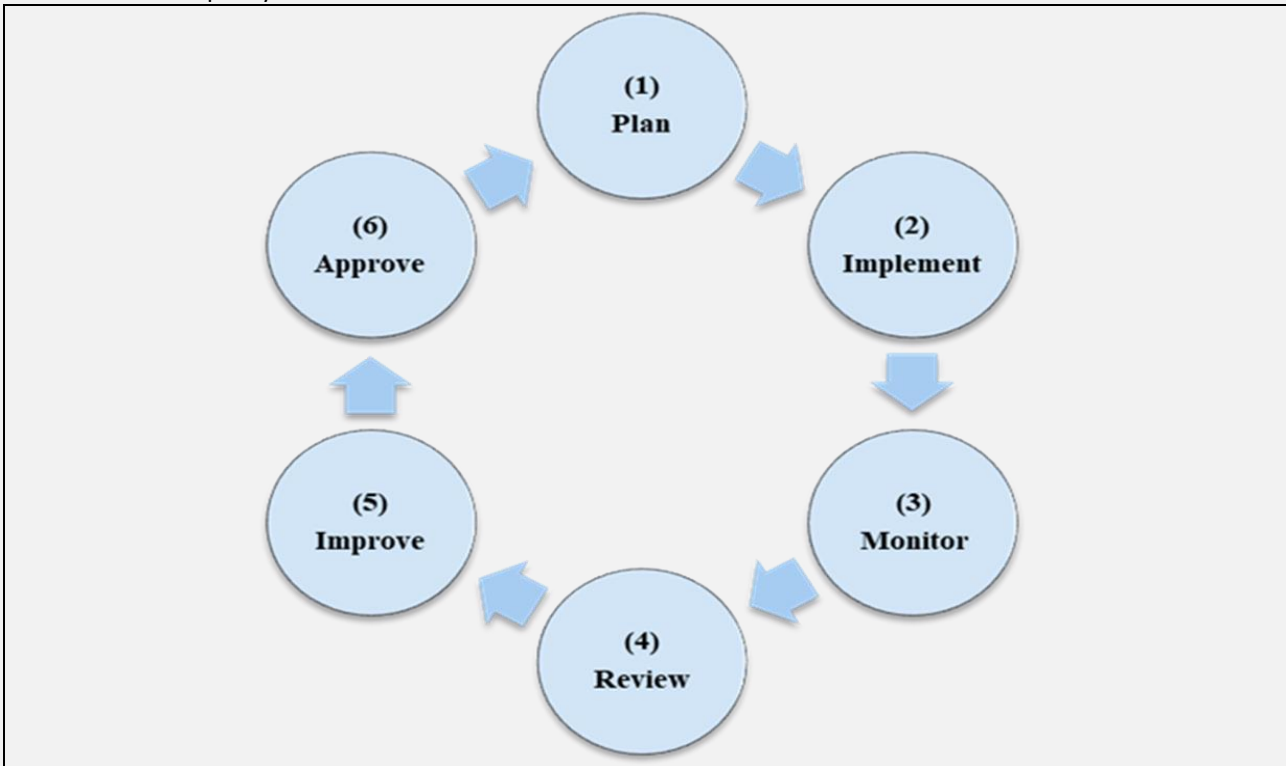
> ➤ Safety and safety instructions are announced at the laboratories and the places where students gather.

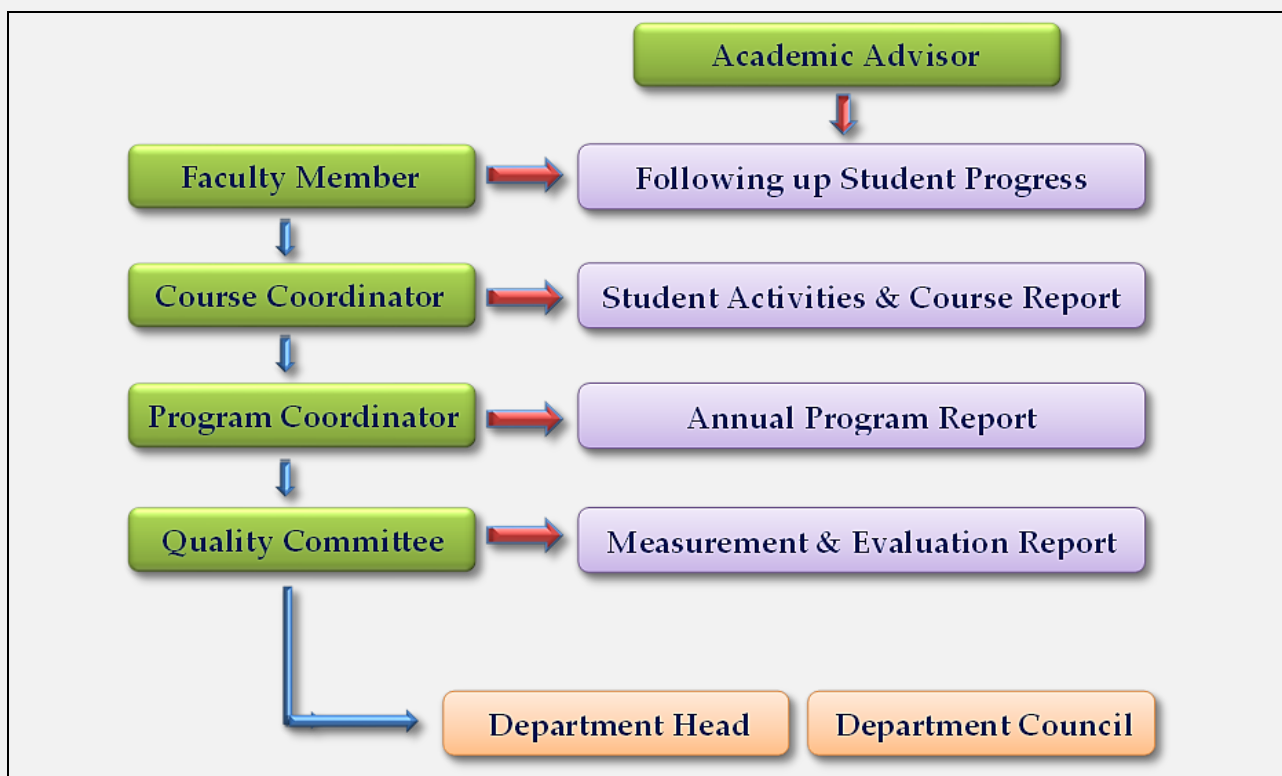## G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

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

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

Arrangements used to ensure the consistency between male and female sections including:

➢ In sections for male and female students the leaders of both sections participate in institutional governance and be fully involved in strategic planning, decision making, and senior administration with effective and continuing communication between sections. Strategic planning ensures equitable distribution of resources and facilities to meet the requirements of program delivery, research, and associated services in each section, and quality evaluations consider performance at each section as well as for the institution.

➢ Male and female sections are represented in the membership of relevant committees and councils and participate fully in decision-making through processes that are consistent with bylaws and regulations of the Higher Council of Education.

➢ An effective communication between members from each section on these committees and councils was established, and individuals in both sections carrying out related activities were fully involved in planning, evaluations, and decision making.

➢ Planning processes and mechanisms for performance evaluation led to comparable standards in each section while taking account of differing needs.

Quality indicators, evaluations, and reports show results for both sections indicating similarities and differences as well as overall performance.

4. Assessment Plan for Program Learning Outcomes (PLOs),

The Bachelor Program administration through the concerned committees; Student affairs committee and the committee of Plans and Curricula, with assistance of the extruded subcommittees; Reports Subcommittee and Opinion Poll Surveying Subcommittee, are responsible to measure the graduate attributes and learning outcomes, and verifying their achievement according to specific performance levels, action plans and recommendations. From assessment plan, we use both direct and indirect methods of assessing our PLO.

Assessment plan for program learning outcomes:

➢ Courses and programs are evaluated and reported on annually and reports include information about the effectiveness of planned strategies and the extent to whichintended learning outcomes are being achieved.
➢ When changes are made because of evaluations, details of those changes and the reasons for them will be retained in the course and program portfolios.
➢ Quality indicators that include learning outcome measures were established for all courses and programs.
➢ Records of student completion rates are kept for all courses and for programs as a whole and included among quality indicators.
➢ Reports on programs are reviewed annually by the program coordinator and quality committees.
➢ Educate systems is established for central recording and analysis of course completion and program progression and completion rates and student course and program evaluations, with summaries and comparative data distributed automatically to departments, colleges, senior administrators, and relevant committees at least onceeach year.
➢ Appropriate actions are taken to solve evaluation problems (if any) for improvements, either within the program or through institutional action as appropriate.

➢ In addition to annual evaluations, a comprehensive reassessment of program will be conducted at least once every five years. Policies and procedures for conducting these reassessments are published within the program.
➢ Program reviews should involve experienced people from relevant industries and professions, and experienced faculty from other institutions.
➢ In program reviews opinions about the quality of the program including the extent to which intended learning outcomes are achieved will be sought from students and graduates through surveys and interviews, discussions with faculty, and other stakeholders such as employers.

> The VALUES domain is assessed by the course coordinator while evaluating the homework, seminar, and presentation. It is to great extent related to the indirect assessment methods of the mid-term activities.

Evaluation and improvements of strategies planned for developing learning are carried out through:

➢ Students are surveyed about the learning outcomes and strategies of the department.
➢ Employers and graduates are surveyed through special forms.
➢ Feedback of all surveys is analyzed and recommended improvement is set out.
➢ A report on the implementation of direct and indirect assessment methods and recommendations for improvement is prepared by each instructor at the end of each semester for each course he teaches.
➢ A report on an assessment of learning outcomes is prepared by each instructor for each course he teaches at the end of each semester with recommendations for improvement. This report is also prepared for the program.
➢ A report on the level of the expected performance of students in the next semester

compared with their results in the just-finished semester is prepared by each instructor for each course he teaches.

➢ Examination results of courses are compared with those of the previous semester.

➢ Revising course reports, improvement plans, and the annual report of the program.

➢ Reviewing of the program by external reviewers who are seniors and engaged in similar programs in other universities. Points addressed by the reviewers are taken seriously to improve the program.

➢ Continuous comparison of our strategies to develop learning to strategies of similar programs in strong accredited universities (Such as USA, Europe, and Middle East region). This will put our program learning strategies in the right frame.

CLOs and PLOs Blueprints Charts
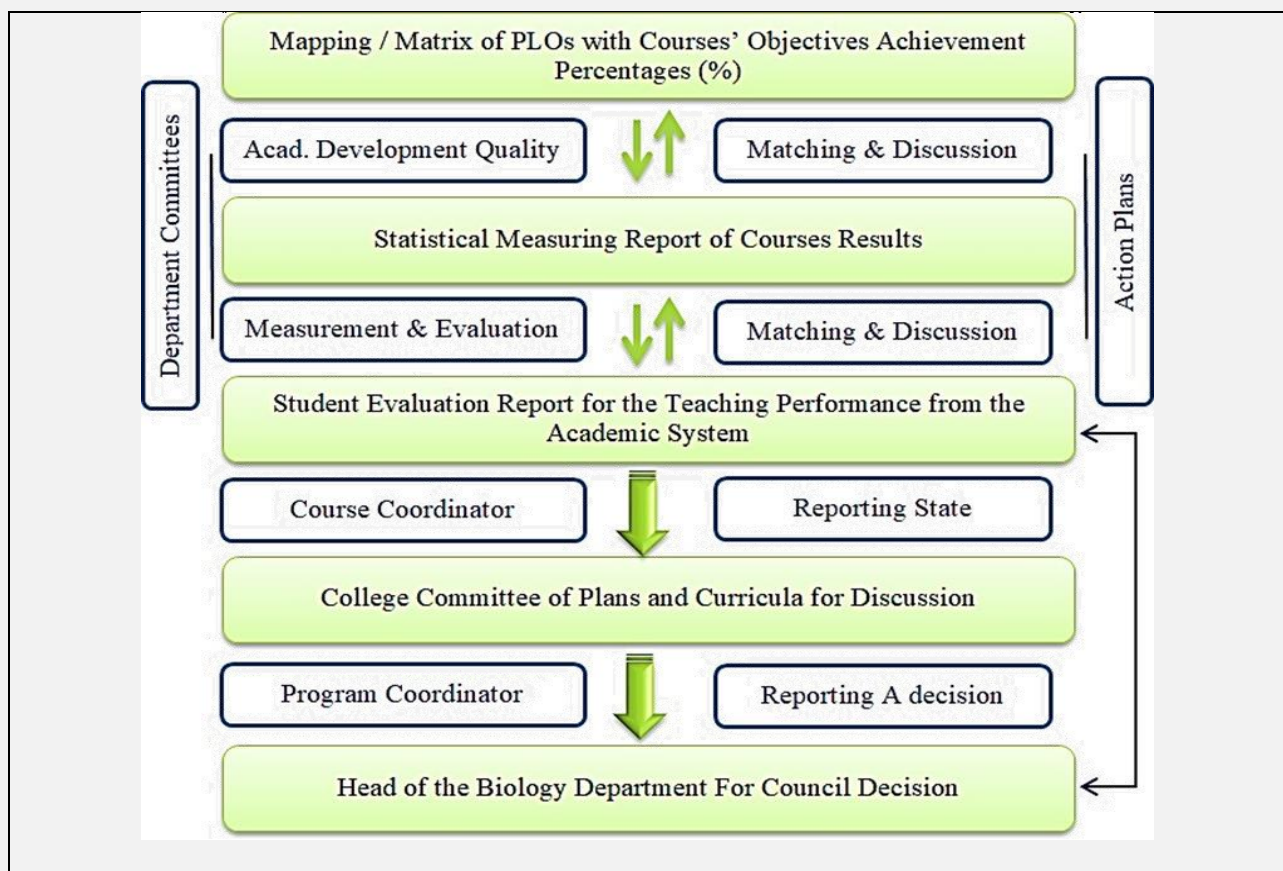
5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Strategies that students are looking for on Effectiveness.	Students (under the guidance of program teachers)	Students Questionnaires / Surveys	End of Academic Year
Quality of Learning Resources	Course Teachers	Direct Evaluation	End of Course / Semester
Education Evaluation Strategies	Program / Department Instructor	Students Questionnaires / Surveys	End of Semester
Student achievement standards checks	Peer reviewers: by independent staff.	Check proofreading of a sample of student work	End of the Program

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(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of indicators achieving the objectives of the program's operational plan	70%	(number of indicators achieved / total number of indicators) * 100	End of the Academic Year
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	70%	Questionnaire / Survey	End of Semester
3	KPI-P-03	Students' assessment of courses' quality.	70%	Questionnaire / Survey	End of Semester
4	KPI-P-04	Completion Rate: Proportion of undergraduate students who completed the program in minimum time in each cohort	70%	Percentage of graduated students to the total number of students enrolled at the official period.	End of the Program time
5	KPI-P-05	First year student retention rate	70%	Official Academic Data from the Registrar	End of Semester
6	KPI-P-06	Students' performance in professional and/or national examinations	70%	Stakeholders and Employers	End of the Academic Year
7	KPI-P-07	Graduate employability	70%	Questionnaire / Survey	End of the Program
8	KPI-P-08	The average number of students in a class.	70%	Official Academic Data from the Registrar	End of Semester
9	KPI-P-09	Employers' evaluation of the competency of program graduates	70%	Questionnaire / Survey	End of the Academic Year
10	KPI-P-10	Students' satisfaction with the offered services	70%	Questionnaire / Survey	End of the Semester
11	KPI-P-11	Ratio of students to faculty members	70%	Official Academic Data from the Registrar (Academic Electronic System)	End of Semester
12	KPI-P-12	Percentage distribution of faculty members	70%		End of Academic Year
13	KPI-P-13	Percentage of faculty members who leave the program	70%		
14	KPI-P-14	Percentage of publications to faculty members	70%	Web of Science (WOS) / Research Centre and the Deanship of Scientific Research	
15	KPI-P-15	Rate of published research per the faculty member	70%		
16	KPI-P-16	Citations rate in refereed journals per faculty member	70%		
17	KPI-P-17	Beneficiaries' satisfaction with the learning resources	70%	Questionnaire / Survey	End of Semester

*including KPIs required by NCAAA

H. Specification Approval Data:

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COUNCIL / COMMITTEE	Plan and Curricula Committee Committee
REFERENCE NO.	
DATE	9/3/1445 H

COUNCIL / COMMITTEE	Approved by Department Council
REFERENCE NO.	Department Council Approval no. 4/45
DATE	10/3/1445 H

COUNCIL / COMMITTEE	Approved by College Council
REFERENCE NO.	College Council Approval no 11/45
DATE	1/05/1445 H