هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T3 2020

# Program Specification

| |
|---|
| **Program Name:** Bachelor of Science in Biology-0930 |
| **Qualification Level :** Bachelor (B.Sc.), NQF level: 6 |
| **Department:** Biology |
| **College:** College of Science |
| **Institution:** Imam Mohammad Ibn Saud Islamic University |

# Content

## A. Program Identification and General Information

**1. Program Main Location:**

Imam Mohammad Ibn Saud Islamic University

**2. Branches Offering the Program:**

Branch 1: Main campus for the Male Section.

Branch 2: King Abdullah City for the Female Section.

**3. Reasons for Establishing the Program:**
(Economic, social, cultural, and technological reasons, and national needs and development, etc.)

Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, evolution, distribution, and taxonomy. Modern biology is a vast and eclectic field, composed of many branches and sub-disciplines. The program of biology mainly contributes to:

- Tell us the human worth and importance of other organisms;
- Identify basic concepts and principles of taxonomy of animal's groups, plant families, the economic and social importance of local plants;
- Know and appreciate of natural resources such as green-land, wildlife *etc.*
- Devote the principles of genetics with application to the study of biological function at the level of molecules, cells, and multicellular organisms, including human physiology;
- Cope with technological developments and biotechnology;
- Use the genetic methods to analyse protein function, gene regulation and inherited diseases; and thus biologists can provide appropriate solutions for genetic diseases through national projects in the Kingdom of Saudi Arabia;
- Identify host-microbe interactions, immunity and human infectious diseases. It helps in investigating the nature and diversity of life, from microorganisms and fungi to plants and animals;
- Facilitate an understanding of preliminary knowledge of the immune;
- System in humans and other mammals and thus helping to avoid immune diseases and thus care with community health;
- Increase the skilful through operating laboratory instruments and computers; and thus increase the cognitive skills of technology tools in scientific research;
- Evaluate impacts from projects' activities on natural resources, ecological system and community;
- Understand the ecology and life cycles of a variety of host-parasite associations and thus decrease the epidemiology of diseases.

**4. Total Credit Hours for Completing the Program: ( 132 hours)**

**5. Professional Occupations/Jobs:**

This program prepares students generally for employment in:

- Ministry of Education: teaching assistant - lecturer in laboratory - technician - research assistant.
- Ministry of Education: Teacher - laboratory technician.
- Ministry of Defence and Aviation: Laboratories - hospitals.
- Ministry of Health: medical laboratories in all hospitals and clinics.
- Ministry of Agriculture: research laboratories.
- Ministry of Commerce: the specific quality-Standardization and Metrology laboratories.
- Interior Ministry: Laboratory and medical tests in its health units.
- The National Guard: its laboratories, hospitals.
- National Commission for Wildlife Conservation and Development.
- King Abdul-Aziz City for Science and Technology: supervision, research workers and technicians.
- The private sector: private hospitals laboratories and scientific Institution.

**6. Major Tracks/Pathways** (if any)**:**

| Major track/pathway | Credit hours (For each track) | Professional Occupations/Jobs (For each track) |
|---|---|---|
| **1.** Not Applicable | | |
| **2.** | | |
| **3.** | | |
| **4.** | | |

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

| Intermediate exit points/awarded degree | Credit hours |
|---|---|
| **1.** Not Applicable | |
| **2.** | |
| **3.** | |

## B. Mission, Goals, and Learning Outcomes

**1. Program Mission:**

Providing qualitative contributions to education, practice and biological sciences research, a developed environment supportive of research under the supervision of faculty members, and student-cantered learning based on critical thinking, scientific experiment, and practical experiences using modern experimental techniques and devices, and preparing students with high competitiveness for future jobs related to biological sciences for community service and to meet local, national and global needs.

Perspective Outcomes: we target the following major learning outcomes for our bachelor degree program in biology:

- To provide students a strong background in the biological science of significance to applications.
- To prepare students for competitive positions in a variety of settings where their knowledge cognitive skills, scientific, laboratory and biotechnology and motor skills to use the latest appliances will be called upon, including teaching.
- To prepare students for pursuing postgraduate studies at the leading local and international Universities.

**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 the society.

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.

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.

**3. Relationship between Program Mission and Goals and the Mission and Goals of the Institution/College.**

The bachelor's degree in Biology leads to Imam University of openness on knowledge, cognitive, communicating skills in applied sciences and in a variety of practical activities in all fields of life. Furthermore, the university requirements (courses) included in the

program curriculum are designed to reflect the intention of the program to reinforce Imam University mission, goals and values in terms of the Kingdom Identity.

## 4. Graduate Attributes:

Biologists are investigative individuals; be very curious and often enjoy spending time alone with their ideas, especially in their laboratories; be usually very natural leaders who strive to influence and persuade others.

Graduate attributes are:

- Commitment to university values, ethical practices and environmental concerns.
- Proficiency in reading, writing, thinking, questioning, analyzing and problem solving in a logical, critical, and creative way.
- Manual dexterity and ability to operate scientific equipment.
- Leading with confidence independently and collaboratively to perform tasks and contribute to volunteer works and community service.
- Developing and using networks of colleagues, sharing and empathy with others, understanding of different points of view, and positive interaction with other cultures.
- Ability to be independent, to adapt to circumstances with flexibility, to offer initiatives, guidance, evaluation and self-development.
- Wiling to learn from errors and listen openly to feedback.
- Ability to explain scientific research procedure, analyse and interpret information.
- Knowledge and skills of basic biological principles and competitiveness in the labor market and entrepreneurship.
- Competency and responsibility in the use of information and technology.

**Program Graduate Attributes (PGA) and University Graduate Attributes (UGA)**

| Program Graduate Attributes (PGA) | University Graduate Attributes (UGA) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UGA1 | UGA2 | UGA3 | UGA4 | UGA5 | UGA6 | UGA7 | UGA8 | UGA9 | UGA10 |
| PGA1 | √ | | √ | | | | | | √ | |
| PGA2 | | √ | | √ | √ | | √ | √ | | |
| PGA3 | | | √ | √ | | √ | √ | | | |
| PGA4 | | | | | | | | √ | √ | √ |
| PGA5 | | | | | | | | | √ | √ |
| PGA6 | | | | | | | | √ | | |
| PGA7 | | | | | √ | √ | | | √ | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PGA8 | | √ | | √ | √ | √ | √ | | | |
| PGA9 | | √ | | √ | | | | | | |
| PGA10 | | | | √ | | √ | √ | | | |

## 5.Program learning Outcomes*

| | |
|---|---|
| **Knowledge and Understanding**<br><br>**The graduate will have:** | |
| **K1** | 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** | A knowledge and specialized understanding of processes, tools, methods, and practices based on recent developments in modern biology. |
| **Skills**<br>**The graduate will be able to:** | |
| **S1** | Apply the concepts, principles and theories involved in addressing issues and problems in a range of complex contexts in biology. |
| **S2** | Choose and use 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** | Communicate in different ways demonstrating an understanding of theoretical knowledge, transferring knowledge and specialized skills, and sharing complex ideas within a variety of audience. |
| **Values**<br>**The graduate will be able to:** | |
| **V1** | Demonstrate integrity, professional and academic ethics, participation in finding constructive solutions to some societal issues, and a commitment to responsible citizenship. |
| **V2** | Self-evaluate of the level of learning and performance, insist on achievement and excellence, and make logical decisions supported by evidence and arguments independently. |
| **V3** | Lead 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 and exit Point (if any)

## C. Curriculum

### 1. Curriculum Structure

| Program Structure | Required/ Elective | No. of courses | Credit Hours | Percentage |
|---|---|---|---|---|
| Institution Requirements | Required | 7 | 16 | 12.1% |
| | Elective | | | |
| College Requirements | Required | 5 | 14 | 10.6% |
| | Elective | | | |
| Program Requirements | Required | 28 | 93 | 70.4% |
| | Elective | 2 | 6 | 4.5% |
| Capstone Course/Project | Required | 1 | 3 | 2.2% |
| Field Experience/ Internship | | | | |
| Others | | | | |
| Total | | 43 | 132 | |

* Add a table for each track (if any)

### 2. Program Study Plan

| Level | Course Code | Course Title | Required or Elective | Pre-Requisite Courses | Credit Hours | Type of requirements (Institution, College or Department) |
|---|---|---|---|---|---|---|
| Prep Year | ENG 056 | English | Required | | 7 | Prep. programs deanship |
| | ARAB 12 | Arab Lang. Skills | Required | | 1 | Prep. programs deanship |
| | HEDU017 | Health Education | Required | | 1 | Prep. programs deanship |
| | CSKL 053 | Communication Skills | Required | | 1 | Prep. programs deanship |
| | MAT 041 | Mathematics 1 | Required | | 4 | Prep. programs deanship |
| | ICT 051 | Computer 1 | Required | | 3 | Prep. programs deanship |
| | LSKL 056 | Learning Skills | Required | | 1 | Prep. programs deanship |
| | ENG 067 | English for Scientific Purposes | Required | | 7 | Prep. programs deanship |
| | PHYS 059 | Intro. to Natural Sciences | Required | | 4 | Prep. programs deanship |
| | CS 052 | Computer 2 | Required | | 3 | Prep. programs deanship |
| | MAT 042 | Mathematics 2 | Required | | 4 | Prep. programs deanship |
| | | | | | | |
| Level 1 | MAT 101 | Calculus 1 | Required | | 4 | Mathematics and Statistics |
| | BIO 101 | General Biology | Required | | 4 | Biology |
| | CHM 101 | General Chemistry 1 | Required | | 4 | Chemistry |
| | عقد 133 | التوحيد | Required | | 2 | كلية أصول الدين |
| | قرأ 101 | القرآن الكريم (1) | Required | | 1 | كلية أصول الدين |
| | ترخ 102 | تاريخ المملكة العربية السعودية | Required | | 2 | كلية العلوم الاجتماعية |
| Level 2 | BIO 111 | Taxonomy of Zoology | Required | | 4 | Biology |
| | BIO 113 | Cell Biology | Required | BIO101 | 2 | Biology |
| | BIO 121 | Taxonomy of Botany | Required | | 4 | Biology |
| | PHY101 | General Physics (1) | Required | | 3 | Physics |
| | PHY181 | General Physics Lab. | Required | PHY101 | 1 | Physics |
| | فقه 200 | الفقه | Required | | 2 | كلية الشريعة |
| | قرأ 151 | القرآن الكريم (2) | Required | | 1 | كلية أصول الدين |

| Level | Course Code | Course Title | Required or Elective | Pre-Requisite Courses | Credit Hours | Type of requirements (Institution, College or Department) |
|---|---|---|---|---|---|---|
| Level 3 | BIO 231 | Genetics | Required | BIO113 | 4 | Biology |
| | BIO 241 | General Microbiology | Required | BIO111 | 4 | Biology |
| | BIO 251 | Ecology and Biodiversity | Required | BIO211 | 2 | Biology |
| | STA 217 | Biostatistics | Required | MAT101 | 3 | Mathematics and Statistics |
| | ترخ101 | السيرة النبوية | Required | | 2 | كلية العلوم الاجتماعية |
| | قرأ 201 | القرآن الكريم (3) | Required | | 1 | كلية أصول الدين |
| Level 4 | BIO 212 | Immunology | Required | BIO113 | 3 | Biology |
| | BIO 232 | Molecular Biology | Required | BIO231 | 3 | Biology |
| | BIO 242 | Bacteriology | Required | BIO241 | 4 | Biology |
| | BIO 244 | Microtechnique | Required | BIO111 | 3 | Biology |
| | BIO 252 | Principles of Environmental Impact Assessment | Required | BIO251 | 2 | Biology |
| | ادب 102 | التحرير العربي | Required | | 2 | كلية اللغة العربية |
| Level 5 | BIO 314 | Animal Physiology | Required | BIO212 | 4 | Biology |
| | BIO 322 | Plant Anatomy | Required | BIO121 | 3 | Biology |
| | BIO 343 | Parasitology | Required | BIO242 | 3 | Biology |
| | CHM 231 | Analytical Chemistry | Required | CHM101 | 4 | Chemistry |
| | COMH 211 | Commuinty Health and Epidemiology | Required | BIO111 | 2 | Medicine |
| Level 6 | BIO 323 | Plant Physiology | Required | BIO322 | 4 | Biology |
| | BIO 333 | Biotechnology | Required | BIO232 | 3 | Biology |
| | BIO 345 | Virology | Required | BIO242 | 4 | Biology |
| | BIO 353 | Entomology | Required | BIO252 | 4 | Biology |
| | قرأ 251 | القرآن الكريم (4) | Required | | 1 | كلية أصول الدين |
| | ثقف 129 | الثقافة الإسلامية | Required | | 2 | كلية الشريعة |
| Level 7 | BIO 415 | Embryology | Required | BIO314 | 4 | Biology |
| | BIO 434 | Bioinformatics | Required | STA217 | 3 | Biology |
| | BIO 436 | Human Genetic Engineering | Required | BIO333 | 3 | Biology |
| | BIO XXX | Elective course (1) | Elective | ** | 3 | Biology |
| | ENG 206 | English language | Required | | 2 | College of Languages and Translation |
| Level 8 | BIO 437 | Biochemistry | Required | BIO436 | 3 | Biology |
| | BIO 446 | Medical and Industerial Microbiology | Required | BIO345 | 4 | Biology |
| | BIO 454 | Microbial Pollution | Required | BIO353 | 3 | Biology |
| | BIO XXX | Elective Course (2) | Elective | ** | 3 | Upon the course |
| | BIO 499 | Research Project | Required | *** | 3 | Biology |
| | ** Upon specifying the course<br>*** Upon research specific project | | | | | |

* Include additional levels if needed

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

## 3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template

https://drive.google.com/drive/folders/1hRHb15ylEsMMzf8bt5Z5RyJaATVGL2To?usp=sharing

## 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 | | |
| | K1 | K2 | -- | --- | S1 | S2 | S3 | --- | V1 | V2 | V3 |
| MAT 101 | | | | | | I | P | | I | | I |
| BIO 101 | I | I | | | | I | P | | I | | |
| CHM 101 | | | | | | I | P | | I | | I |
| عقد 133 | | | | | | I | P | | I | | |
| قرأ 101 | | | | | | I | P | | I | | |
| ترخ 102 | | | | | | I | P | | I | | |
| BIO 111 | I | I | | | I | I | P | | I | I | |
| BIO 113 | I | I | | | I | I | P | | I | I | |
| BIO 121 | P | I | | | I | I | P | | I | I | |
| PHY101 | | | | | I | I | P | | I | | |
| PHY181 | | | | | I | I | P | | I | | |
| فقه 200 | | | | | | I | P | | I | | |
| قرأ 151 | | | | | | I | P | | I | | |
| BIO 231 | P | P | | | P | I | P | | I | I | A |
| BIO 241 | P | P | | | P | I | P | | I | I | |
| BIO 251 | P | P | | | P | I | P | | I | I | |
| STA 217 | P | P | | | P | I | P | | I | I | |
| ترخ101 | | | | | | I | P | | I | | |
| قرأ 201 | | | | | | I | P | | I | | |
| BIO 212 | P | P | | | P | I | P | | I | P | |
| BIO 232 | P | P | | | P | I | P | | I | P | |
| BIO 242 | P | P | | | P | I | P | | I | P | |
| BIO 244 | P | P | | | P | I | P | | I | P | |
| BIO 252 | P | P | | | P | I | P | | I | P | |
| ادب 102 | | | | | | I | P | | I | P | |
| BIO 314 | A | P | | | A | A | A | | A | P | |
| BIO 322 | A | P | | | A | A | A | | A | P | |
| BIO 343 | A | P | | | A | A | A | | A | P | P |
| CHM 231 | P | P | | | A | A | A | | A | P | P |
| COMH 211 | P | P | | | P | A | A | | A | P | |
| BIO 323 | A | P | | | A | A | A | | A | P | |
| BIO 333 | A | P | | | A | A | A | | A | P | |
| BIO 345 | A | P | | | A | A | A | | A | P | P |
| BIO 353 | A | P | | | A | A | A | | A | P | |
| قرأ 251 | | | | | | A | | | A | | |

| Course code & No. | Program Learning Outcomes | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Knowledge and understanding | | | | Skills | | | | Values | | |
| | K1 | K2 | -- | --- | S1 | S2 | S3 | --- | V1 | V2 | V3 |
| ثقف 129 | | | | | | A | | | A | | |
| BIO 415 | A | A | | | A | A | A | | A | A | |
| BIO 434 | A | A | | | A | A | A | | A | A | A |
| BIO 436 | A | A | | | A | A | A | | A | A | |
| ENG 206 | A | A | | | A | A | A | | A | A | |
| BIO 437 | A | A | | | A | A | A | | A | A | |
| BIO 446 | A | A | | | A | A | A | | A | A | |
| BIO 454 | A | A | | | A | A | A | | A | A | A |
| BIO 499 | A | A | | | A | A | A | | A | A | |

* Add a table for each track (if any)

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

Describe policies, teaching and learning strategies, learning experience, and learning activities, including curricular and extra-curricular activities, to achieve the program learning outcomes.

- Lectures and practical laboratory.
- Self-learning**.**
- Mini-projects/Research project.
- Office hours.
- Practical work.
- Textbooks and recommended references and some articles which will require reading, writing, and oral presentation.
- Private study, project work and finally the research project.
- Extensive use of the network for distributing teaching materials.
- A research project including an oral presentation
- Simulation of presentation monitored by the supervisor/teacher.
- Labs**.**

## 6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure achievement of program learning outcomes in every domain of learning.

Direct Assessment Methods:

- National or regional exam results (developed outside the institution for use by a wide group of students using national or regional norms).
- Capstone Project or Course.
- Entrance/Exit Interviews/exams.
- Performance (participation in campus and/or community events, volunteer work, presentations, internships, art performances, *etc.*).
- Course e-Portfolio.

Indirect Assessment Methods:

- Alumni Survey.
- Course Evaluation Survey.

- Employer/industry Survey.
- Program Advisory Committee minutes.
- Teaching staff surveys on the program.
- Observations (Information can be collected while observing "events" such as classes, social gatherings, activities, group work, study sessions, *etc*. Observation can provide information on student behavior's and attitudes).
- Syllabus Review.
- Second Examiner checklist (to improve it so that to include: course learning outcomes).
- Course report.
- External assessor report.
- Accreditation review.

## D. Student Admission and Support:

### 1. Student Admission Requirements

The admission of students at University is part of the responsibility of the Deanship of Admission and Registration. The students admitted in the program are part of the students already passed successfully the Preparatory Year Program (PYP) Applied Science Track according their grades and wishes.

All newly admitted students are required to complete the PYP before starting their undergraduate study (Applied Sciences path). Students may be exempted from part or all of this program according the related executive principles.

1. Applicant must be holding a General Secondary Certificate or Secondary Certificate or equivalent from outside Kingdom of Saudi Arabia.
2. Applicant must not be terminated from any other university for discipline rules.
3. Applicant must be medically fit.
4. Applicant must have an official approval from his manager or supervisor, both in private or governmental sectors.
5. Admission to scientific colleges including the college of science is confining to secondary school students – Scientific Section after they passing the preparatory year exams.
6. The equivalent ratio that enables students to be accepted in Applied Sciences path is 80%.

Criteria of admission onto the College programs and preparatory majors are handling as follows:

| *Academic Major of Preparatory Path* | *Qualifying Disciplines* | *Weights of GPA by National Center for Assessment (www.qiyas.org)* | *College* | *Program* |
|---|---|---|---|---|
| Applied Sciences Path | Scientific | Secondary (40%)<br>Formative (40%)<br>Summative (20%) | Science | Applied Mathematics<br>Physics<br>Chemistry<br>Biology |

According to his/her GPA, the student will be accepted directly into the scientific program

he/she wishes to enrol in after passing the preparatory program successfully.

The admissions take place only once on summer vacation, through the Unified E-Admission Portal at the public universities in Riyadh region. There are no admissions for the second semester. The applications for admission are through the Unified E-admissions Portal for Students.

Students can apply for admission to IMSIU University through the Unified E-Admissions Portal for public universities in Riyadh region. In fact, it enables the applicant to fill the admission application electronically and to choose an academic major according to his/her certifications, grades and priorities determined by himself/herself without the need of his/her presence at the university.


*The Electronic Admission for Female Students in Riyadh Region.*


*The Electronic Admission for Male Students in Riyadh Region.*

Note: PYP is required for the admission to the program, but it is not part of the program and its results are not included in the Program GPA.

**2. Guidance and Orientation Programs for New Students**

- Students have to be prepared at the general education level through the Preparatory Year Program (PYP) in the following disciplines: English Language, Mathematics, Sciences, and Computer skills.
- Open day.
- Meetings.

**3. Student Counseling Services**
(academic, career, psychological and social )

- Student admitted to the bachelor program will be assigned an academic advisor, responsible for pastoral support, guidance and counseling.
- The lecturer for each course allocates 6 office hours per week advertised on his /her own timetable, and reserved as part of his/her teaching schedule to help the students on any academic problems/difficulties.
- Student is able to get individual consultation and academic advice appointment with teaching staff via e-mail or phone calls.
- A list of teaching staff members with their room numbers, their phone numbers and their e-mail addresses is given in the Bachelor's biology Handbook and Department website.
- University support services include careers, financial advice, housing, counseling etc.
- Excellent library facilities.

- University, college and department handbooks provide information about the course structure and University regulations etc.
- Feedback is provided for all assessments.

**4. Special Support**
(low achievers, disabled, gifted and talented)

- Students with physical disabilities are welcomed in the program. If they wish to receive special accommodations while enrolled, they should contact the Counseling and Advising Unit at the College.
- Classrooms, toilets, elevators, and parking are accessible to disabled students.

## E. Teaching and Administrative Staff

### 1. Needed Teaching and Administrative Staff

| Academic Rank | Specialty | | Special Requirements / Skills ( if any ) | Required Numbers | | |
|---|---|---|---|---|---|---|
| | General | Specific | | M | F | T |
| Professors | Plant science<br>Zoology<br>Microbiology<br>Parasitology | | None | 1<br>1<br>1<br>1 | 1<br>1<br>1<br>1 | 2<br>2<br>2<br>2 |
| Associate Professors | Plant science<br>Zoology<br>Microbiology<br>Parasitology | | None | 1<br>1<br>1<br>1 | 1<br>1<br>1<br>1 | 2<br>2<br>2<br>2 |
| Assistant Professors | Plant science<br>Zoology<br>Microbiology<br>Parasitology | | None | 2<br>2<br>2<br>2 | 2<br>2<br>2<br>2 | 4<br>4<br>4<br>4 |
| Lecturers | Plant science<br>Zoology<br>Microbiology | | None | 2<br>2<br>2 | 2<br>2<br>2 | 4<br>4<br>4 |
| Teaching Assistants | Plant science<br>Zoology<br>Microbiology | | None | 2<br>2<br>2 | 2<br>2<br>2 | 4<br>4<br>4 |
| Technicians and Laboratory Assistants | | | None | 2 | 2 | 4 |
| Administrative and Supportive Staff | | | None | 2 | 2 | 4 |
| Others ( specify ) | | | | | | |

### 2. Professional Development

**2.1 Orientation of New Teaching Staff**

Describe briefly the process used for orientation of new, visiting and part-time teaching staff

One of the main tasks of the manager of the program are:

♣ Equipping new faculty members with the knowledge and skills that they will need in their first semester in order to progress toward types of objectives, targeted skills, assessment methods, nature of research, role of funding and graduate students etc...

♣ Explaining to the new, visiting or part time teaching staff how to design, and deliver a course and assess the learning outcomes.

♣ Explaining to the new, visiting or part time teaching staff the nature of the university environment and constraints.

**2.2 Professional Development for Teaching Staff**

Describe briefly the plan and arrangements for academic and professional development of teaching staff (e.g., teaching & learning strategies, learning outcomes assessment, professional development, etc.)

♣ Teaching staff are encouraged to attend trainings and workshops for improving their teaching and student assessment skills.

♣ Teaching staff members are encouraged to reflect on their teaching and research, in order to develop innovative teaching methods and knowledge of research.
♣ Indeed, each year University awards are presented to academic staff for outstanding contributions to teaching, research supervision and publishing.

## F. Learning Resources, Facilities, and Equipment

**1. Learning Resources.**
Mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, including electronic and web-based resources, etc.)

STEP 1: For each course the department assigned a faculty members committee to do the followings:

- Course description (preliminary syllabus),
- Recommend Lists of Required Textbooks, Essential References Materials (Journals, Reports, *etc.*), Recommended Textbooks and Reference Material (Journals, Reports, *etc.*), Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.), and other learning material such as computer-based programs/CD, professional standards or regulations and software.

STEP 2: A committee collects learning resources of all courses and submits the required lists to the Head of the department to get the approbation of the department council.

STEP 3: After the department council approbation the Department Head asks the College Dean to provide the Required lists of Learning Resources through the University Central Library and/or the IT Deanship.

**2. Facilities and Equipment**
(Library, laboratories, medical facilities, classrooms, etc.).

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

STEP 1: Evaluation of the locals assigned for graduated programs: Library (equipped with textbooks and references provided by the Central Library), Laboratories (equipped with appropriate computers and software), and classrooms.

STEP 2: In the shortage case of supplies the a committee will report that to the Department Head in order to ask the College Dean to provide such supplies through the University Central Library and/or the IT Deanship.

**3. Arrangements to Maintain a Healthy and Safe Environment** (According to the nature of the program )

Laboratories are equipped with first aid and ventilation.

## G. Program Management and Regulations

**1. Program Management**
**1.1 Program Structure**
(including boards, councils, units, committees, etc.)

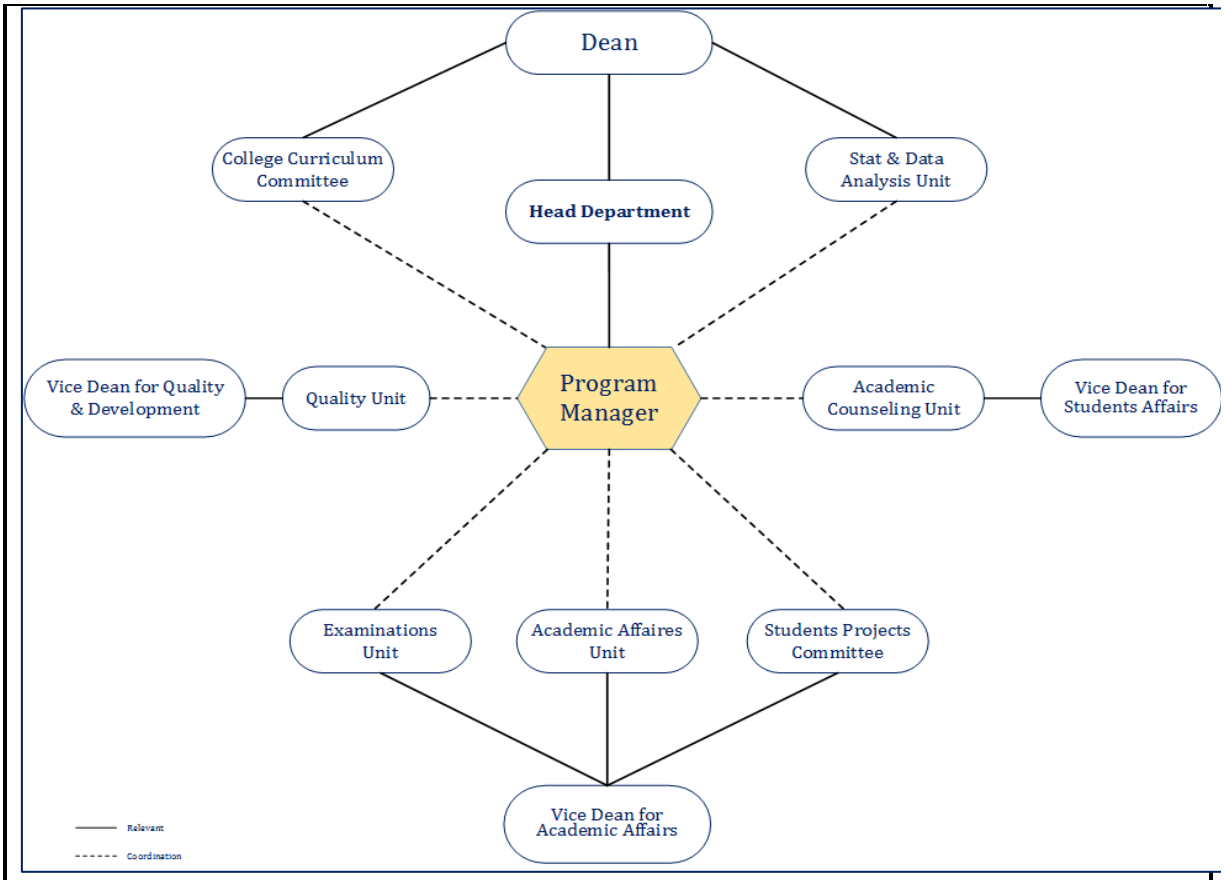


**Figure 1.** Program administrative flowchart.

### 1.2 Stakeholders Involvement

Describe the representation and involvement of stakeholders in the program planning and development. (students, professional bodies, scientific societies, alumni, employers, etc.)

- Student surveys of all courses.
- Exit surveys.
- Advisory committee.
- Department council.

### 2. Program Regulations

Provide a list of related program regulations, including their link to online version: admission, study and exams, recruitment, appeals and complaint regulations, etc.)

**Executive Rules for Study Regulations and Exams**

## H. Program Quality Assurance

### 1. Program Quality Assurance System

Provide online link to quality assurance manual

**https://drive.google.com/drive/folders/1gN8WDF6gBQ3-eBQhB439_sjAAgl8_BQk?usp=sharing**

Program review and its development is periodically assessed through the following 16

processes:

♣ Courses reports are submitted to the program manager every semester.

♣ Appropriate teaching staff committee is in the charge of assessment and modification.

♣ Prepare and monitor the annual program report.

♣ Conduct and analyze surveys opinion of the students about the courses and the program.

♣ Conduct and analyze surveys 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 each five years if necessary.

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

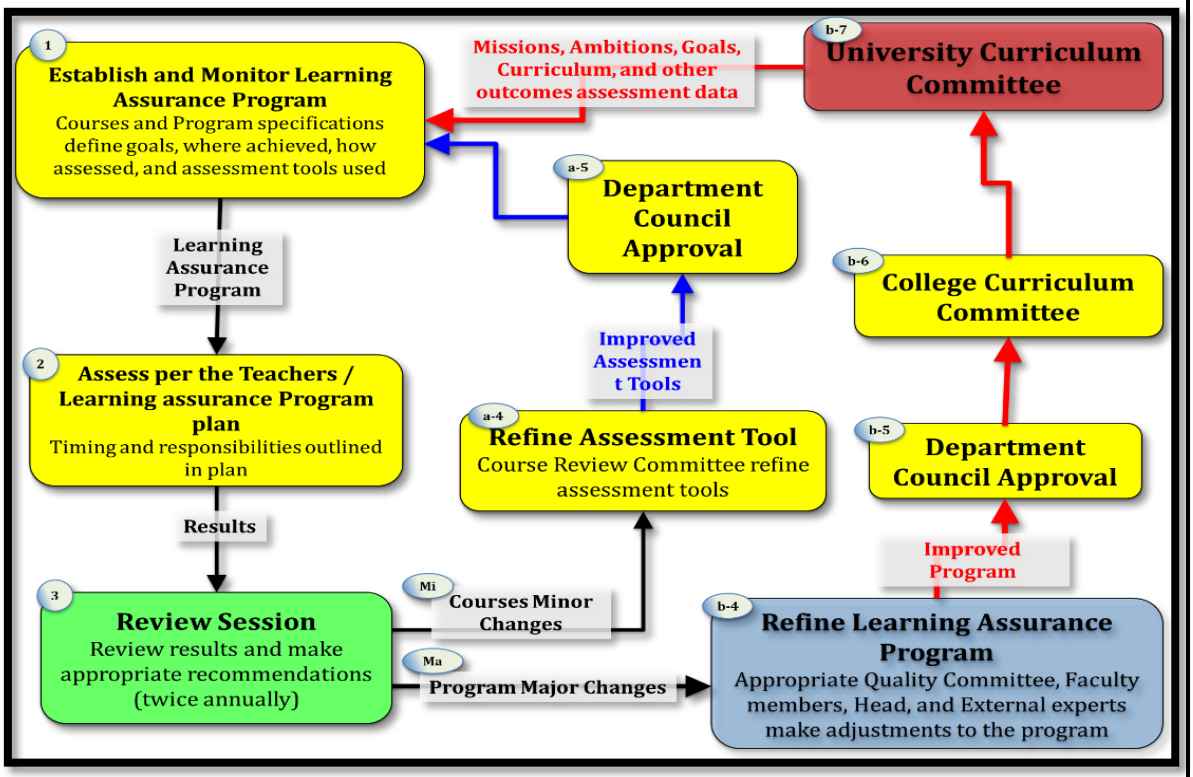


**Figure 2.** Teaching/Learning Quality Assurance Process Diagram.

## 2. Program Quality Monitoring Procedures

Teaching staff are consulted and involved in monitoring program quality, annual review and planning for improvement, through the followings:

- Quality Department committee review
- Department council Approval of the program
- Student course evaluation feedback
- Course report
- Teaching staff program evaluation
- Annual program report

- Teaching\Learning Quality Assurance Process described below (see section I).

**3. Arrangements to Monitor Quality of Courses Taught by other Departments.**

- The course outlines are developed in consultation and in agreement with the concerned departments to ensure that the course content meets our needs.
- Communication and coordination with the relevant department(s) will be done in the future if any changes are needed.

There are three kinds of courses in the program taught by other departments:

♣ University requirements: to achieve the mission and goals of the institution as Islamic University.

♣ College requirements: to achieve the mission and goals of the College of Science.

♣ Program requirements: to ensure compliance to the program's mission.

To make sure that these courses meet the needs of students, the department adopts the following procedure:

1. The department studies course specifications and evaluates their compatibility to make sure that these courses meet the students' needs in the program.
2. The department of Biology communicates its needs to other departments to ensure that the courses coverage fulfill the needs of students in Bachelor of Sciences in Biology program.
3. The syllabi of the courses taught by other departments are periodically reviewed by the department in collaboration with the concerned departments' to ensure compliance to the program's requirements.
4. Explore the professional requirements for the program through employers' surveys.

**4. Arrangements Used to Ensure the Consistency between Main Campus and Branches** (including male and female sections)

- Students of all branches study the same program.
- The department chooses one coordinator for each course and for all branches at the beginning of the semester.
- The coordinator of branches insures that solved exercises are the same for all branches.
- The final exam is common for all branches.

**5. Arrangements to Apply the Institutional Regulations Governing the Educational and Research Partnerships** (if any).

N.A.

**6. Assessment Plan for Program Learning Outcomes (PLOs), and Mechanisms of Using its Results in the Development Processes**

Assessment Plan for Program Learning Outcomes (PLOs) are given below:

**Course Outcomes**

Performance Indicators (PK)

| PK scale | Level | Score |
|---|---|---|
| Excellent | > 9 | |
| Adequate | >7.5 | |
| Minimal | >6.6 | |
| Inadequate | < 6.6 | |

**Course Outcomes toolbox**

Marks of Students in All Assessment activities **(Midterm, Quiz, Final exam, Homework...)**

| Student name (To hide) | Student ID | Mid1 | Mid2 | Qz | Lab | FE | Sum | % Out of 10 = Sum÷ 10 |
|---|---|---|---|---|---|---|---|---|
| | | 25 | 25 | 10 | 20 | 20 | 100 | 10 |
| N1 | | | | | | | | |
| N2 | | | | | | | | |
| N3 | | | | | | | | |
| N4 | | | | | | | | |
| N5 | | | | | | | | |
| N6 | | | | | | | | |
| N7 | | | | | | | | |
| N8 | | | | | | | | |
| N9 | | | | | | | | |
| N10 | | | | | | | | |
| Average out of 10= (Av/ max score) × 10 | | | | | | | | |
| Number of Students that met the criteria (> 6) | | | | | | | | |

Course outcome of "BIO xxx"-student performance

| KP scale | Number of students |
|---|---|
| Excellent | |
| Adequate | |
| Minimal | |
| Inadequate | |

Average of Assessed Course Learning Outcomes

| Course Outcome | CLOs code | Assessment activities | | | | | |
|---|---|---|---|---|---|---|---|
| | | Mid 1 | Mid 2 | Quiz | Lab | Final Exam | Average |
| Knowledge and Understanding | K1 | | | | | | |
| | K2 | | | | | | |
| Skills | S1 | | | | | | |
| | S2 | | | | | | |
| | S3 | | | | | | |
| Values | V1 | | | | | | |
| | V2 | | | | | | |
| | V3 | | | | | | |

Course Outcomes and Assessment Activities Grid

| Course Outcome | CLOs code | Assessment activities | | | | |
|---|---|---|---|---|---|---|
| | | Mid 1 | Mid 2 | Quiz | Lab | Final Exam |
| Knowledge and Understanding | K1 | | | | | |
| | K2 | | | | | |
| Skills | S1 | | | | | |
| | S2 | | | | | |
| | S3 | | | | | |
| Values | V1 | | | | | |
| | V2 | | | | | |
| | V3 | | | | | |

## 7. Program Evaluation Matrix

| Evaluation Areas/Aspects | Evaluation Sources/References | Evaluation Methods | Evaluation Time |
|---|---|---|---|
| Effectiveness of teaching & assessment | Students | Surveys | End of academic year |
| Learning resources | Students | Surveys | End of semesters |
| External assessor | Faculty | Reports | End of academic year |
| Leadership | Graduates | Surveys | End of academic year |

**Evaluation Areas/Aspects** (e.g., leadership, effectiveness of teaching & assessment, learning resources, partnerships, etc.)
**Evaluation Sources** (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others (specify)
**Evaluation Methods** (e.g., Surveys, interviews, visits, etc.)
**Evaluation Time** (e.g., beginning of semesters, end of academic year, etc.)

## 8. Program KPIs*

The period to achieve the target (01) year.

| No | KPIs Code | KPIs | Target | Measurement Methods | Measurement Time |
|---|---|---|---|---|---|
| 1 | KPI-P-01 | Percentage of achieved indicators of the program operational plan objectives | 76% | Percentage of performance indicators of the operational plan objectives of the program that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year. | End of academic year |

| No | KPIs Code | KPIs | Target | Measurement Methods | Measurement Time |
|---|---|---|---|---|---|
| **2** | **KPI-P-02** | Students' Evaluation of quality of learning experience in the program | 3.80 | Average of overall rating of final year students for the quality of learning experience in the program on a five-point scale in an annual survey. | End of academic year |
| **3** | **KPI-P-03** | Students' evaluation of the quality of the courses | 3.87 | Average students overall rating for the quality of courses on a five-point scale in an annual survey. | End of semesters |
| **4** | **KPI-P-04** | Completion rate | 50% | Proportion of undergraduate students who completed the program in minimum time in each cohort. | |
| **5** | **KPI-P-05** | First-year students retention rate | 78% | Percentage of first-year undergraduate students who continue at the program the next year to the total number of first-year students in the same year. | End of academic year |
| **6** | **KPI-P-06** | Students' performance in the professional and/or national examinations | 100% | Percentage of students or graduates who were successful in the professional and/or national examinations, or their score average and median (if any). | |
| **7** | **KPI-P-07** | Graduates' employability and enrolment in postgraduate programs | 75% | Percentage of graduates from the program who within a year of graduation were:<br>a. employed<br>b. enrolled in postgraduate programs<br>during the first year of their graduation to the total number of graduates in the same year. | |
| **8** | **KPI-P-08** | Average number of students in the class | 17 | Average number of students per class (in each teaching session/activity: lecture, small group, tutorial, laboratory or clinical session). DURING THE FIRST SEMESTER. | End of semesters |
| **9** | **KPI-P-09** | Employers' evaluation of the program graduates proficiency | N.A | Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey. | |
| **10** | **KPI-P-10** | Students' satisfaction with the offered services | 2.80 | Average of students' satisfaction rate with the various services offered by the program (restaurants, transportation, sports facilities, academic advising *etc.*) on a five-point scale in | End of semesters |

| No | KPIs Code | KPIs | Target | Measurement Methods | Measurement Time |
|---|---|---|---|---|---|
| | | | | an annual survey. | |
| 11 | KPI-P-11 | Ratio of students to teaching staff | 14 | Ratio of the total number of students to the total number of full-time and full-time equivalent teaching staff in the program. | End of semesters |
| 12 | KPI-P-12 | Percentage of teaching staff distribution | a- 45%/55%<br>b- 45%/55%<br>c-20%,10%,50%, 20% | Percentage of teaching staff distribution based on:<br>a. Gender<br>b. Branches<br>c. Academic Ranking. | End of academic year |
| 13 | KPI-P-13 | Proportion of teaching staff leaving the program | 3% | Proportion of teaching staff leaving the program annually for reasons other than age retirement to the total number of teaching staff. | End of academic year |
| 14 | KPI-P-14 | Percentage of publications of faculty members | 35% | Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program. | End of academic year |
| 15 | KPI-P-15 | Rate of published research per faculty member | 0.85 | The average number of refereed and/or published research per each 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). | End of academic year |
| 16 | KPI-P-16 | Citations rate in refereed journals per faculty member | 24 | 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). During 2014 to 2018. | End of academic year |
| 17 | KPI-P-17 | Satisfaction of beneficiaries with the learning resources | 2.65 | Average of beneficiaries' satisfaction rate with the adequacy and diversity of learning resources (references, journals, databases *etc.*) on a five-point scale in an annual survey. | End of academic year |

* including KPIs required by NCAAA

## I. Specification Approval Data

| | |
|---|---|
| **Council / Committee** | **DEPARTMENT COUNCIL** |
| **Reference No.** | **21** |
| **Date** | **9/3/2020** |