



Program Specification

— (Postgraduate)

Program Name:	Master of Science in Biochemistry
Program Code (as per the Saudi Standard Classification of Educational Levels and Specializations):	ISCED 7- 747
Qualification Level:	Master(M.Sc.), 7thlevel According toNQF
Department:	Biochemistry
College:	Science
Institution:	King Saud University
Program Specification:	New <input type="checkbox"/> updated* <input checked="" type="checkbox"/>
Last Review Date:	NA

*Attach the previous version of the Program Specification.



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A. Program Identification and General Information:

1. Program's Main Location:

Main Campus (Al Dariya, Riyadh – Male & Female sections)

2. Branches Offering the Program (if any):

Not applicable

3. System of Study:

Coursework & Thesis Coursework

4. Mode of Study:

On Campus Distance Education Other.....(specify)

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

- Partnership Arrangement: **Not applicable**
- Type of Partnership:
- Duration of Partnership:

6. Professions/jobs for which students are qualified:

After completion the master, our graduates will have acquired theoretical & practical skills that qualify them to work as follows:

Registered Technician in the fields, including:

- Health and medical laboratories.
- Agriculture.
- Commerce and industrial sectors.
- Laboratories of the Ministry of Defense.
- Laboratories of forensic medicine.

Lecturers or researchers in various research centers and universities.

7. Relevant occupational/ Professional sectors:

Our graduates will have acquired theoretical & practical skills that enable them to work in several fields, including:

- The Ministry of Education.
- The Ministry of Health. (The Ministry of Health - Medical laboratories).
- The Ministry of Agriculture.
- The Ministry of Commerce and industry.
- The laboratories of the Ministry of Defense,
- The National Guard
- King Abdul Aziz City for Science and Technology.
- The laboratories of forensic medicine
- Working as lecturers or researchers in various universities.



8. Major Tracks/Pathways (if any):		
Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. One track only (Biochemistry)	26	Registered Technician in the fields, including: - Health and medical laboratories. - Agriculture. - Commerce and industrial sectors. - Laboratories of the Ministry of Defense. - Laboratories of forensic medicine. Lecturers or researchers in various research centers and universities.
2.		
3.		
4.		
9. Total credit hours: (26)		



B. Mission, Goals, and Program Learning Outcomes

1. Program Mission:

To build multidisciplinary biochemical learning and research environments to support biochemistry graduates to contribute effectively, efficiently, and responsibly with high standards to the community through stimulating environment and partnerships at the national and international levels.

2. Program Goals:

1. To fulfill the national need for advanced and quality education in biochemistry.
2. To enrich the community with qualified researchers who have the ability to analyze and interpret problems using various biochemical techniques.
3. To offer extensive prospects for the biochemistry graduates to enhance their academic, educational, and scientific values.
4. To promote skills among the biochemistry graduates to contribute to the vision of the Kingdom.
5. To build a stimulating academic and administrative environment that attracts the best faculty and researchers
6. To establish partnerships with related national and international organizations.

3. Program Learning Outcomes:*

Knowledge and Understanding:

K1	Recognize the most recent and advanced scientific developments in the field of biochemistry.
K2	Explain the multidisciplinary biochemical processes in healthy and diseased conditions.
K3	Identify ethical principles of professional practice in the field of biochemistry.

Skills:

S1	Identify the proper biochemical technique(s) used to investigate a scientific problem.
S2	Design an experiment through a biochemical practical project.
S3	Establish a biochemical research project that benefits the community.
S4	Write in a scientific way, evaluate professional reports, and publish scientific research papers in scientific journals.

Values, Autonomy, and Responsibility:

V1	Promote the values of joint teamwork in the field of scientific research of biochemistry
V2	Use different resources to extract biochemical information and knowledge

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





C. Curriculum:

1. Curriculum Structure:

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Course	Required	5	13	50%
	Elective	4	12	46%
Graduation Project (if any)		--	--	--
Thesis (if any)		1	1	4%
Field Experience(if any)		--	--	--
Others (.....)		--	--	--
Total		10	26	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	BCH 520	Mechanisms of Enzyme Action	Required	-	3	
	BCH 530	Biochemical Methodology	Required	-	3	
	BCH 540	Recent Advances in Metabolism and its Regulation	Required	-	3	
Level 2 and Level 3	BCH 545	Inborn Errors of Metabolism	Elective	-	3	
	BCH 550	Molecular Biology of the Gene	Required	-	3	
	BCH 555	Experimental Techniques in Molecular Biology	Elective	-	3	
	BCH 560	Biochemical Endocrinology	Elective	-	3	
	BCH 565	Biochemistry of Mammalian Reproduction	Elective	-	3	
	BCH 570	Biochemistry of Cell Surface	Elective	-	3	





Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	BCH 575	Neurochemistry	Elective	-	3	
	BCH 577	Biochemistry of Blood	Elective	-	3	
	BCH 580	Biochemistry of Human Nutrition	Elective	-	3	
	BCH 590	Selected Topics in Biochemistry	Elective	-	3	
	BCH 596	Thesis Proposal Preparation	Required	-	1	
Passing 25 credit hours: 13 credit hour's obligatory courses and 12 credit hours' elective courses.						
Level 4	BCH 600	Thesis	Required	.	1	

*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://sciences.ksu.edu.sa/ar/node/799>





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	S1	S2	S3	S4	V1	V2
BCH 520	I	I		I	I		I	I	I
BCH 530	I	I		I		I	I	I	I
BCH 540	I	I		I	I			I	
BCH 545	P	P	P	P			P	P	P
BCH 550	P	P		P		P		P	P
BCH 555	P	P		P	P		P	P	P
BCH 560	P	P	P	P		P		P	P
BCH 565	P	P		P		P	P		P
BCH 570	M	M		M		M	M	M	M
BCH 575	M	M		M			M	M	
BCH 577	M	M	M	M		M		M	M
BCH 580		M	M				M		M
BCH 590	M	M	M	M	M	M	M	M	M
BCH 596	M		M	M	M	M	M		M
BCH 600	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, to achieve the program learning outcomes in all areas.

- Lectures: It can be defined as a presentation of the subject of the lesson in voice and some other aids. It is delivered by explaining the elements of the lecture's subject and skillfully distributing the time on all elements.
- Open discussions: A way to guide and encourage students to express their opinions, ask questions and provide answers, and thus increase interest in preparing the lesson in advance.
- Brainstorming: stimulate the mind of learners to think in all directions and possibilities and obtain the maximum number of ideas on the subject of the lecture.
- Project strategy: To specify a set of educational projects related to the specialization of students and present these projects to students so that each group of students chooses a specific project. The faculty member will then assist students by providing books, references, and advice until the end of the project and the achievement of the objectives.
- Cooperative learning: Based on reciprocal dialogue between faculty members and students, or among students themselves.



- Concept maps: Employ shapes, fonts, images, arrows, colors, and language (linking words) to represent knowledge and provide information.
- Small group activities: Divide the learners into small groups of 3 or 4, give them specific tasks "common goals," and then ask them to collaborate (knowledge exchange) to accomplish the required tasks.
- Discovery learning: Requires the student to organize his information and rearrange it in a new way.
- Problem solving: Stimulate students towards a problem related to the course if it is suitable for their level and cannot be solved easily without research and effort.
- Interactive learning: Based on interactive information and communications technology.

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 once in the program's cycle).

Knowledge and understanding:

- Students' knowledge is assessed through midterms and a final exam for the theoretical courses.
- For practical courses, students are assessed continuously via lab reports, multiple quizzes, midterm, and a final exam.

Skills:

- Assessment methods used include regular quizzes, written and oral exams, essays, practical work, and group work.
- PowerPoint and poster presentations and written reports.

Values:

- Written reports, practical exams, and oral presentation.

D. Thesis and Its Requirements (if any):

1. Registration of the thesis:

(Requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities and procedures of scientific guidance)

Successful completion of 50% of the credit hours of the graduate courses offered is essential for the registration for the Master's thesis. Students have to submit the research proposal to the nominated supervisor at the department. Formal requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities, and procedures of scientific guidance are described in the guide published in the link provided by the graduate studies deanship at (<https://graduatestudies.ksu.edu.sa/ar/node/616>).

The thesis can be supervised by one or more senior staff members from the Biochemistry Department and it may include other personal with different specialties according to the nature of the research. The thesis work will produce students skilled in the most advanced Biochemical research techniques and how to analyze and interpret the results. A written thesis in the English language will be submitted to the department. The student will later have to defend his/her work to a committee



consisting of an odd number of examiners (usually three to five examiners) who will evaluate and approve the work, usually one or two of the supervisors enter the defense process.

2. Scientific Supervision:

(The regulations of the selection of the scientific supervisor and his/her responsibilities, as well as the procedures/mechanisms of the scientific supervision and follow-up)

Every student, before beginning the work on the project should have an academic supervisor. The supervisor is accepted to supervise, assist in selecting a thesis topic, and prepare a research plan according to University Council regulations initiated by the Deanship of Graduate Studies. The supervisor will help the student with any problem that may occur at any step of the project and then solve them through the process. Following the initial steps, the students will receive guidance on how to proceed in conducting project-related activities in a practical sense. The final step is to guide the student on how to process and analyze the collected data and write it in a scientific way for thesis defense. The students will have to complete, write and submit their thesis in accordance with the formal requirements described in the link (<https://graduatestudies.ksu.edu.sa/ar/node/616>). The supervisor is required to submit two progress reports on the student's work to the department. After the completion of the written thesis, the supervisor will submit a report to the head of the department announcing and declaring the thesis's suitability for discussion.

3. Thesis Defense/Examination:

(The regulations for selection of the defense/examination committee and the requirements to proceed for thesis defense, the procedures for defense and approval of the thesis, and criteria for evaluation of the thesis)

The student should complete a written thesis as one of the basic requirements for the master's degree. To evaluate the master thesis, the student is accepted to submit it to a selected judging panel. The Graduate Studies Deanship Council, based on the recommendation of respective Department and College Councils sets up the thesis Judging Panel suggested by supervisors.

The judging panel for a master thesis should have the following conditions:

1. The panel members must be an odd number and the supervisor is the chair.
2. The minimum number of faculty members in the panel is three, while the supervisor and Co-supervisor (if any) should never form a majority in the panel.
3. At least one professor or one associate professor should be among the committee members.
4. The decisions are made with the consensus of at least two-thirds of the committee members.

The judging panel issues a report that will be signed by all the members and later sent to the Head of the Department within one week of the defense date. The report should include one of the following recommendations:

1. Accepting the thesis with recommending degree awards.
2. Accepting thesis with some amendments, no further defense is required. A designated member of the panel will recommend awarding the degrees establishing that all the required corrections are made. Corrections must be completed within three months from the defense date. However, the University Council may permit time extension on the recommendation of the Graduate Studies Deanship Council and the judging panel report.
3. Require rectifying of the deficiencies in the thesis with another defense of the work within a certain time limit (not exceeding one year from the first defense date) to be specified by the Graduate Studies Deanship Council on the recommendation of the relevant Department Council.
4. Not accepting the thesis.

Each member of the judging panel has the right to present different views or reservations in a detailed



report to both the Head of the Department and Dean of Graduate Studies within a time limit (not more than two weeks from the date of the thesis defense).

H. Student Admission and Support:

1. Student Admission Requirements:

Besides the admission criteria stipulated in the Unified Graduate Studies Statutes for King Saudi university described in the link (<http://graduatestudies.ksu.edu.sa>), the students must satisfy the following requirements:

1. Candidates should hold a bachelor's degree in biochemistry from universities in Saudi Arabia or their equivalent.
2. Candidate's GPA in bachelor's degree ≥ 3.25
3. No more than five years after the date of graduation.
4. Candidates must qualify for specific other departmental requirements such as an interview arranged by the Graduate Studies and Scientific Research Committee -

The Department Graduate Studies Committee Interview phases:

- 1- After the end of the period of submission of applications for the study of the master, the Department has the authority to get the data of applicants from the Deanship of Graduate Studies.
- 2- The Committee of Graduate Studies in the Department to the Council of the Department recommendation includes Proposal of interviews for candidates to join the Master program

Third: Preliminary Screening of Candidates and Candidates for Joining the Master Program:

Applicants and applicants are verified for conformity with initial admission requirements.

Approved by the Council of the distinguished section and are:

Bachelor of Biochemistry

2) Cumulative GPA of 3.25 or higher

3) Lasts more than five years following the date of graduation

Only those who follow these terms are corrected to perform the editing exam.

Fourth: The Graduate Studies Committee shall submit to the Council of the Department a recommendation of the lists of candidates and candidates for performance

Exam editing.

Fifth: After the approval of the Department Council, the following lists of candidates and candidates for the examination,

The Graduate Studies and Scientific Research Committee in the Department sends the electronic addresses of candidates.

The attendees are to take the exam and edit the test and the place to be held.

Sixth: The exam will be held on the same day and at the same time for both Frey students.

The committee members then correct the exam and monitor the grades.

Seventh: Second Screening of Candidates and Candidates for Joining the Master Program:

After completing the correction of the editing exam and grading monitoring, the graduate committee is





held.

Scientific research in the department to meet the second screening of candidates and candidates who passed the exam.

Editing qualified to attend a private interview.

Eighth: The Graduate Studies Committee shall submit to the Council of the Department a recommendation for the lists of candidates

For a private interview

Ninth: The Third Screening

Requirements for attendance

- The study for a master's degree is a Course/Thesis mode of minimally twenty-five credit hours of graduate courses plus 6 actual hours of thesis. The duration for obtaining a master's degree is a minimum of four semesters and a maximum of eight; summer sessions are not counted within this period.

Requirements for progression from year to year

- The maximum period for obtaining a degree starts with registration in graduate courses until the thesis submission date together with a report by the student's supervisor to the Head of the Department.

c. Program completion or graduation requirements.

- The number of study units covered by the graduate student should be successfully completed (24) credit hours of courses; the student must present a satisfactory research thesis (6 credit hours) in his chosen area of specialization.
- The student shall only graduate upon the successful completion of all program requirements, provisionally with a minimum accumulative grade average of "Very Good".

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).

- NA

3. Student Counseling Services:

(Academic, professional, psychological and social)

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

The BCH master program followed the rules offered for guidance and counseling units () based on a specific hierarchy of Academic Advising Unit in college of sciences, King Saud University which regularly guide the academic advising committee in BCH department by holding continuous workshops for academic advisors and enhance the role of academic advisors by official templates of academic advising through Deanship of Student Affairs (Counseling and Guidance Center) that collaborates with HADAF as provider for training courses and events and assisting in qualifying students in many fields, Note that: the KSU center receives students and gives training courses related to academic counseling and solving student problems. Also, it offers Virtual Counseling Services) such as psychosocial clinic to all students.

The Student Rights and Protection Unit represents an assistant to students in many cases, such as giving an alternative test or cases related to academic deprivation.

Some additional points assist in counseling:

1. The Academic Guidance Unit of the program offers personal academic, psychological and professional counseling, as well as group counseling to support the academic, behavioral, emotional, psychological and social growth of students.





2. The faculties are required to devote at least eight office hours per week to interacting with the students.
3. The department has an academic advisor to look into the problems of students with special needs and problems.
4. There is always direct contact between faculty and students through lectures, practicals, and presentations.
5. Electronic and personal communication between faculty members and students is available and highly encouraged.
6. Psychological and social services are provided by the College of Science, and at the beginning of the academic year, these services are introduced to students.

4. Special Support:

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

- Gifted and talented students must register in the King Saud University Distinguished and Talented Students Program (<https://dsp.ksu.edu.sa/ar>).
- Encourage students to enter the Dean's List for honoring excellent students at the beginning of each academic year.
- For low achievers, all academic staff have office hours and can be accessed for one-on-one discussion.
- The king Saud University created an accessible academic environment by creating relevant conditions for the study of students and applicants with special needs without reducing the requirements for their study performance and in accordance with the principles of equal treatment. For information on the students with disability services policies and procedures at King Saud University see the website <http://sa.ksu.edu.sa/ar/SpecialNeedsCenter>.



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	NA	√	NA	7	4	11
Associate Professor	NA	√	NA	8	3	11
Assistant Professor	NA	√	NA	4	10	14
Technicians and Laboratory Assistant	NA	√	NA	13	11	24
Administrative and Supportive Staff	NA	√	NA	3	10	13
Others (Researcher and Research Assistant)	NA	√	NA	3	3	6

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.)

All programs of the department of Biochemistry implement clear policies and procedures to ensure the appropriateness, adequacy and accessibility of learning resources and services provided to support students' learning activities such as free student Wi-Fi network and free access to Saudi digital Library which contains most of recent and updated books, research articles, reviews... etc

The department library (Female section) and college of science have enough resources that are easily accessible and appropriate to the needs of the program and the number of students. The program has laboratories, computer and technology equipment, and material that are suitable to the specialty and sufficient to conduct courses practical parts, research and scientific studies according to the program objectives.

The King Salman Central Library at King Saud University provides all students and staff with the learning resources needed for learning and aid in teaching. It has undergone a major refurbishment to enhance its services to suit the needs of undergraduate students, postgraduate students and students with special needs. The King Salman Central Library provides students with the learning resources needed (e.g., academic books and scholarly journals) to support their learning. The KSU has policies and procedures in place for managing the library and ensuring the provision of support and learning resources to its students and staff. The Learning and IT Deanship provides all staff and students with various software facilities to help them conduct their research. The Assessment and Evaluation Department annually surveys students' and staff's opinions about the learning resources and sends the results to the Library Affairs Administration for analysis and improvement.

All required information is available in:

- Home Page | Deanship of Libraries Affairs (ksu.edu.sa)
- عمادة شؤون المكتبات | تواصل معنا (ksu.edu.sa)
- sdl.edu.sa/SDLPortal/ar/University_Login.aspx





Furthermore, there are some points that enrich the point:

1. Textbooks, syllabi, and notes of all courses are approved by the department board.
2. The department submit a request to the bookstore to secure all required textbooks.
3. Faculty must adhere to these guidelines and post their lectures and notes on the LMS blackboard system for students prior to the commencement of the course.
4. Each faculty member must specify office hours (6 hours/week) to assist the students if needed.

Faculties and teaching staff evaluate the adequacy of textbooks, references, and other resource materials by:

1. Faculty questionnaire
2. The faculty update gets constant updates on the latest developments in biochemistry and their specialization.
3. The faculty subscribe to electronic updates from renowned publishers of scientific books like Elsevier, Oxford, Springer, etc.

2. Facilities and Equipment:

(Library, laboratories, classrooms, etc.)

BCH programs have adequate, physical facilities supported by King Saud university include buildings (Male and Female) for cultural, sports, and extra-curricular activities. Buildings are conforming to Saudi code for persons with disabilities. The King Salman Central Library has recently undergone renovation and refurbishment to provide adequate facilities for students, researchers, and staff members, and equipped with new computers, wireless connection, printing and scanning machines, and comfortable chairs and tables. In addition, allocated private spaces for the utilization of special need students.

Next are the procedures that ensure the requirements for the program are met:

1. University frequently surveys faculty for required or missing materials.
2. Faculty submit requests to the head of the department of missing or required items.
3. Representatives of publishing companies point out missing or new publications and resources.
 1. Each lab should be equipped with a first aid kit.
 2. Students should be always supervised by the lecturer.
 3. All equipment should have instructions next to it for its safe use.
 4. All fridges should display a list of chemicals and reagents or kits stored in them.
 5. All cupboards in the lab storing chemicals should display a list of contents.
 6. All hazardous and flammable chemicals are stored separately and with a clear hazard symbol displayed.
 7. All fume hoods and exhaust in the lab should be in working condition.
 8. All labs should be equipped with a projector for the lecture.
 9. All classrooms should be equipped with a projector and computer.

All required information is available in:

- [Home Page | Deanship of Libraries Affairs \(ksu.edu.sa\)](http://ksu.edu.sa)

- [عمادة شؤون المكتبات | تواصل معنا \(ksu.edu.sa\)](http://ksu.edu.sa)

- sdl.edu.sa/SDLPortal/ar/University_Login.aspx

3. Procedures to ensure a healthy and safe learning environment:

(According to the nature of the program)

The Safety and Health Administration regulations exist to minimize the occurrences and severity of workplace injuries and protect worker and student health. Biochemistry laboratories present hazards that require safety standards as outlined in the safety manual in the College of Science laboratories introduced by the Laboratories & Safety Committee, College of Science- King Saud University page (40-57), which include: Hazards and ways of avoiding and preventing them such as:





1- Chemical hazards

2- Glassware risks

3- Electrical risks

4- Mechanical risks

5- Biological risks

6- Safety precautions for students:

1. All fire extinguishers should be routinely refilled and checked.
2. Each lab should display safety guidelines for handling chemicals and reagents.
3. Social distancing should be maintained in the labs and tutorials during a pandemic.
4. Students are encouraged to wash their hands and each classroom and lab should provide hand sanitizer and gloves, especially during the pandemic period.
5. No eating and drinking are allowed in the labs and classroom.
6. The eating area should be designated for students and staff members.

Students were given a one-day orientation before undertaking any lab or research project to make sure they know and follow all safety rules and guidelines.

All required information is available in:

- [General Administration of Campus Safety and Security:Home Page | King Saud University \(ksu.edu.sa\)](#)
- [Safety Guide | COLLEGE OF SCIENCES \(ksu.edu.sa\)](#)
- [Department Manual | COLLEGE OF SCIENCES \(ksu.edu.sa\)](#)

G. Program Quality Assurance:

1. Program Quality Assurance System:

Provide a link to quality assurance manual.

The faculty members of the Biochemistry Program participate in various activities concerning learning and teaching. This involvement provides the faculty members with an opportunity to have a clear understanding of the standards and processes which should reflect a commitment to the qualifying teaching. In addition, workshops have been provided to all faculty members to familiarize them with accreditation and quality assurance measures. Furthermore, surveys of stakeholders are conducted to develop a feedback mechanism to use in quality assurance measures. Following surveys have been developed and employed to obtain feedback from the stakeholders to assess their needs and satisfaction level for further improvement.

Faculty Survey

Students Experience Survey

Program Evaluation Survey

Course Evaluation Survey

Faculty Survey

Some of these surveys are available online through the Biochemistry Program website where the stakeholders are encouraged to give their input. These are then used to adopt corrective and preventive quality measures in all disciplines of the Biochemistry Program. The performance of the Biochemistry Program staff is regularly monitored and yearly reports are prepared. The Biochemistry Program has a number of initiatives to recognize achievements and reward distinguish. The college also arranges evaluation by the internal and external experts who conduct audits of all vital processes including learning and teaching and formulate their recommendations to address these standards. The Self-Assessment Process is a permanent feature that informs Biochemistry Program about the baseline status and future needs for further improvement. All stakeholders participate in the assessment process. Their observations about strengths, weaknesses, opportunities, and threats are





prioritized, listed, and sent back for a consultation to reach an agreement on performance uses at Biochemistry Program.

2. Program Quality Monitoring Procedures:

1. There are two committees in the department, one for curricula and courses and the other for practical laboratories.
2. Both committees formed 6 subcommittees to deal with the 6 branches of biochemistry including the subcommittees for general biochemistry, molecular biology, metabolism, clinical biochemistry, proteins and enzymes, and hormone and signal transduction.
3. The subcommittees evaluated ten programs in well-known universities (6 universities in the USA, two in the UK, and two in Australia) and have designed courses, each within his/her specialty, to be included in our curriculum.
4. The main committee reviewed these courses taking into account the comprehensiveness of the course, appropriateness of the content to the objective of the program, and the viability of execution. Based on this, the parent committee has designed a new curriculum for the program which has been adopted by the department board.
5. The committee has pointed out the strengths and weaknesses of the existing program. This has led to a reformulation of the program with certain courses being scrapped and some relevant new courses added to the program.
6. The advisory committee has been formed officially. But the department looks for such committees as well as all visiting faculties or representatives of prospective employers for help in pointing out new trends, future needs, and independent perspectives.

All required information is available in:

- [Department Manual | COLLEGE OF SCIENCES \(ksu.edu.sa\)](#)
- [Home Page | DEANSHIP OF DEVELOPMENT AND QUALITY \(ksu.edu.sa\)](#)

3. Procedures to Monitor Quality of Courses Taught by other Departments:

Not Applicable

4. Procedures Used to Ensure the Consistency between within the main campus:

(including male and female sections).

Two campuses where Biochemistry program is going on. Those are male section in the College of Science and female section in the Women's college. Faculties interact and do conference meetings quite often using various online resources such as Zoom, and also use telephones for communications in addition to emails. Furthermore, both sections have joint department board meetings almost every fortnightly to discuss various department issues and about various programs. This is how consistency is always maintained between the two branches.

All could be summarized as following:

- Regular meetings are conducted between members of the BCH program in the department council.
- Effective communication between both sections, and full involvement in planning and decision-making processes through the committees' deferent meetings.
- Most of department committees include both male and female members except any belongs to female issue.
- Standardization of learning resources and exams.
- An updated list of male and female course coordinators with a complete contact detail is sent to the female branch at the beginning of each semester to ensure cooperation among course coordinators.
- The courses' specifications are standardized and coordinated between male and female branches.





-The male and female branches of the program have agreed on the same grading system. Development and academic accreditation committee is supervising the whole process, under full supervision of department council.

5. Assessment Plan for Program Learning Outcomes (PLOs):

The program objectives set a guideline for program learning outcomes, curriculum development, and teaching procedure. To ensure achievement of the program learning outcomes, a variety of assessment were used (direct and indirect assessments). The assessment and evaluation process is conducted at the end of every semester, and the results of this assessment process are used in the program planning and development. These processes are used to gather the data which is necessary for the assessments. Evaluation, in the form of interpreting the data, is then carried out in order to determine how well the outcomes are being attained for the continuous improvement of the program.

1. Assessment processes of the PLOs by collecting data can be direct or indirect.
 - Direct assessment of PLOs (course work)
 - Indirect assessments of PLOs (surveys).
2. The collected data is analyzed and compared to a pre-set performance indicator, which constitutes the evaluation process.
3. Checking the degree to which the data evaluation results meet the pre-set targets (for the continuous improvement processes).
 - The direct assessment results are obtained from student coursework-based evaluations.
 - The program is under continual self-evaluation processes.
 - Program and Course evaluation surveys by students are conducted towards the end of a semester.
 - Survey is filled in by the graduates at the end of their graduation semester.
 - An Alumni survey and employer survey is filled in by the alumni's and employers respectively.
 - Evaluation about the program from experts from various academic institutions

The outcome of evaluation is utilized as feedback for improvement and incorporated into planning to enhance the overall attainment of Program Learning Outcomes.

6. Program Evaluation Matrix:

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of Teaching	Students Employee Alumni Graduate	Program Evaluation Survey Course Evaluation Survey Employee Survey Employers Survey	End of academic year
Leadership	Faculties Employee Alumni Graduate	Faculty Survey Program Evaluation Survey Employee Survey Employers Survey	End of academic year
Assessment of	Faculties	Faculty Survey	End of academic year





Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
learning outcomes	Students	Program Evaluation Survey Course Evaluation Survey	
Learning resources	Faculties Students Graduate	Faculty Survey Program Evaluation Survey Course Evaluation Survey	End of academic year
Skills of faculty and teaching	Faculties Students the head of the department	Teacher/course evaluations Review of exams and evaluation methods. Publications by the faculty. Recommendations of the faculty. Annual performance evaluations by	End of academic year
Program evaluation	Experts from various academic institutions	Visits	Each 5 years

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

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

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

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



7. Program KPIs:*

The period to achieve the target (5) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-PG-1	Students' Evaluation of quality of learning experience in the program	4.5	Survey	End of academic year
2	KPI-PG-2	Students' evaluation of the quality of the courses	4.5	Survey	End of academic year
3	KPI-PG-3	Students' evaluation of the quality of academic supervision	4.5	Survey	End of academic year
4	KPI-PG-4	Average time for students' graduation	3-4 years	Direct	At the end of semester
5	KPI-PG-5	Rate of students dropping out of the program	0	Direct	End of academic year
6	KPI-PG-6	Employers' evaluation of the program graduates' proficiency	4.5	Survey	End of academic year
7	KPI-PG-7	Students' satisfaction with the services provided	4.5	Survey	End of academic year
8	KPI-PG-8	Ratio of students to faculty members	5:1	Direct	End of academic year
9	KPI-PG-9	Percentage of publications of faculty members	100 %	Direct	End of academic year
10	KPI-PG-10	Rate of published research per faculty members	3:1	Direct	End of academic year
11	KPI-PG-11	Citations rate in refereed journals per faculty member	50:1	Direct	End of academic year
12	KPI-PG-12	Percentage of students' publication	80 %	Direct	End of academic year
13	KPI-PG-13	Number of patents, innovative products, and awards of excellence	1	Direct	End of academic year
14	MBC-P-01	Ratio of achieved indicators of the program operational plan objectives	80%	Direct	End of academic year
15	MBC-P-02	Percentage of faculty members' distribution based on academic ranking	100%	Direct	End of academic year
16	MBC-P-03	Percentage of teaching staff leaving the program	Prof20%, Assoc30%, Assis40%, Other10%	Direct	End of academic year
17	MBC-P-04	Satisfaction of teaching Staff with learning resources	90%	Survey	End of academic year
18	MBC-P-05	Percentage of full-time teaching staff with verified doctoral qualifications	100%	Survey	End of academic year
19	MBC-P-06	Percentage of teaching staff participated in professional development activities	80%	Direct	End of academic year
20	MBC-P-07	Percentage of full-time	80%	Direct	End of academic year



No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		teaching staff members actively participated in community services			
21	MBC-P-08	Ratio of annual community services per a regular student	1:1	Direct	End of academic year

*including KPIs required by NCAAA

H. Specification Approval Data:

COUNCIL /COMMITTEE	DEPARTMENT COUNCIL
REFERENCE NO.	8
DATE	15/11/2023

