Academic Program Description Form

University Name: University of Basrah

Faculty/Institute: College of Medicine

Scientific Department: Department of Biochemistry

Academic or Professional Program Name: Medical Chemistry/ 1st year

Biochemistry/ 2nd Year

Final Certificate Name: M.B.Ch.B, M.Sc

Academic System: Annual

Description Preparation Date:

File Completion Date: 14/3/2024

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 17/3/2024

Signature:

Approval of the Dean

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department

Academic Program and Course Description Guide

2024

Introduction:

The educational program is a well-planned set of courses that include procedures and experiences arranged in the form of an academic syllabus. Its main goal is to improve and build graduates' skills so they are ready for the job market. The program is reviewed and evaluated every year through internal or external audit procedures and programs like the External Examiner Program.

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staff together under the supervision of scientific committees in the scientific departments.

This guide, in its second version, includes a description of the academic program after updating the subjects and paragraphs of the previous guide in light of the updates and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the academic program description circulated according to the letter of the Department of Studies T 3/2906 on 3/5/2023 regarding the programs that adopt the Bologna Process as the basis for their work.

In this regard, we can only emphasize the importance of writing an academic programs and course description to ensure the proper functioning of the educational process.

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether they have made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

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Scientific Department: **Department of Biochemistry**

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Biochemistry/ 2nd Year

Final Certificate Name: **M.B.Ch.B, M.Sc**

Academic System: **Annual**

Description Preparation Date:

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1. Program Vision

The vision of the Department of Biochemistry is to be a recognized and distinguished unit in the field of biochemistry and clinical biochemistry in Basra and Iraq by providing excellent teaching and training for the medical, allied health science, and postgraduate students. In addition, the department should work to produce highly skilled and qualified graduates in clinical chemistry and laboratory medicine to provide a competent and effective service to achieve maximum benefit for the patient.

2. Program Mission

The department main functions are: teaching medical chemistry, biochemistry and clinical biochemistry to both undergraduate medical students, health allied sciences, as well as medical & non medical postgraduate students.

In addition to teaching, members of the department are involved in research and advisory work to other departments in the colleges of Medicine and Science and to the health authorities in Basrah regarding all aspects of clinical biochemistry and laboratory investigations. Also the department aims to provide graduates that are capable of teaching and performing research in the field of clinical chemistry and laboratory medicine and offer medical, diagnostic and advance laboratory services. Regarding the community the department has research activities concerned with solving common health problems in our localities and intended to reveal the biochemical knowledge and changes especially in research areas in Basra and IRAQ in general. Emphasis is particularly directed upon red blood cell enzymopathy (particularly G6PD deficiency) and haemoglobinopathy (e.g. sickle cell disease and thalassemia); risk factors of cardiovascular disease and diabetes mellitus particularly lipid profile and oxidative stress as well as biochemical markers in different types of malignancies.

3. Program Objectives

Teaching objectives (whole course):

The general objectives and overall aim of the teaching course is:

1. To teach sufficient biochemistry to give the student a basic understanding of life processes at the molecular level.
2. To provide an understanding of the normal biochemical process in the human body in which the function of the various organs and tissues are integrated.
3. To comprehend the principles of metabolic integration that would contribute to the student's understanding of the biochemical basis of various diseased processes.
4. To undertake practical classes that would familiarize the student with the various chemical methods that is used in the diagnosis of disease.
5. To familiarize the students with modern biochemical techniques and their uses in the diagnosis of diseases especially genetic diseases.

Learning objectives (whole course) :

At the end of the course we will expect that the student:

1. Will have learnt and understood the basic biochemical processes taking place in the body, since these will underline an understanding of normal and abnormal human metabolism. In order to accomplish this, the student will learn how large molecules are synthesized and used (DNA, RNA, and proteins), and how energy is generated, stored, and retrieved (metabolism).
2. Once these basic concepts are understood, it will be straightforward to understand how alterations in the basic processes can lead to a disease state.
3. Will know about many pathological situations where these can be related to biochemical defects.

4. Will have some experience of biochemical techniques in order to appreciate the practical problems of clinical problems of clinical biochemistry as a diagnostic tool.

4. Program Accreditation

Yes, from the National Council of Accreditation of Medical Colleges

5. Other external influences

WHO

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	Annual			
College Requirements				
Department Requirements	2			Basic
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
			theoretical	**practical**
First year	1.	Medical Chemistry	30	30
	1.A	Inorganic Chemistry	7	9 (normal inorganic urinary constituents)
		Radioioactivity and medical uses of radioactive isotopes	2	-
		Ions in living system and: their importance	2	-
		• Air pollution. • Aerosole • Smoke. • Hydrocarbons pollution. • Pollution due to hospitals and industries • Physiological effects of chemical materials on living system. • Prevention and cure of air pollution.	3	-
	1.B	Analytical Chemistry	8	12 (titration)
		Solutions and methods of expressing concentrations	2	-
		pH,acids, bases and salt of medical interests	2	-
		Buffers and buffer systems of physiological importance	2	-
		Colloidal Chemistry and biological systems, Dialysis and living systems.	2	-
	1.C	**Organic Chemistry**	15	9 (normal organic urinary constituents)
		Alkanes, alkenes and alkynes	3	-
		Aromatic and cyclic hydrocarbons	3	-

		Alcohols	3	-
		Aldehydes and Ketones	3	-
		Carboxylic Acids	2	-
	2	Biochemistry	30	30
	2.A.	Carbohydrate Chemistry	5	10
	2.B	Protein chemistry	5	10
	2.C	Lipid Chemistry	5	-
	2.D	Nucleic Acids Chemistry	3	-
	2.E	Enzyme Chemistry	6	10
	2.F	Biological Membranes Chemistry	4	-
	2.G	Muscle Chemistry	2	-
Second year		Biochemistry	90	60
	1.	1st Course	45	30
		Vitamins	7	-
		Diagnostic enzymology	4	12
		Carbohydrate Metabolism	12	6
		Diabetes Mellitus	3	6
		Nutrition	5	3
		Plasma Proteins	4	3
		Amino acid metabolism	6	
	2.	2nd Coarse	45	30
		Hormones	10	6
		Lipid Metabolism	11	3
		Nucleotides Metabolism	3	3
		Acid base balance	2	-
		Liver Function Tests	4	6
		Renal Function Tests	3	9
		Antioxidants	2	-
		Xenobiotics	2	-
		Cancer Chemistry	4	-
		Mineral Metabolism	4	3

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Providing the students with sufficient knowledge that enable them to understand the biological interactions in the human body at the molecular level.
Skills	
Learning Outcomes 2	Identifying the biochemical tests that are necessary to be applied to identify various pathological conditions in order to reach an accurate clinical diagnosis.
Learning Outcomes 3	Description of diseases and clinical cases resulting from disorders of metabolic processes in the human body.
Ethics	
Learning Outcomes 4	Respect for patient care and heightened ethical consciousness as a medical student
Learning Outcomes 5	Respect for medical ethics and the medical profession.

9. Teaching and Learning Strategies

1. Theoretical Lectures
2. Practical Lessons
3. Small Groups teaching
4. Online Lectures

10. Evaluation methods

1. Daily assessment
2. Formative examinations
3. Summative Examination
4. Mid-year and Final Examinations

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Prof. Abdulkader Abdulwahab Abdulkader	MBChB	PhD	Cancer biomarkers		Staff	
Prof. Jamal Ahmed Abdulbarri	Sc.B	PhD	Biochemistry		Staff	
Prof. Salman Kadhum Ajlan	MBChB	Ms.C	Endocrinology		Staff	
Prof. Nazar Samir Abdulwahab	MBChB	FIBMS	Chemical Pathology		Staff	
Lecturer Entesar Abdullateef Abdulrudha	Sc.B	PhD	Biochemistry		Staff	
Lecturer Muhannad Maki Abdul Karim	MBChB	FIBMS	Chemical Pathology		Staff	
Lecturer Ihsan Shakir Mahmood	MBChB	FIBMS	Chemical Pathology		Staff	
Lecturer Abrar Imad Abdulsahib	MBChB	FIBMS	Chemical Pathology		Staff	
Assist. Lecturer Sabah Ghasan Abood	Sc.B	Ms.C	Biochemistry		Staff	
Assist. Lecturer Abbas Abdul Hussein Sabri	Sc.B	Ms.C	Biochemistry		Staff	

Professional Development

Mentoring new faculty members

Increase the number of academic staff

Professional development of faculty members
The faculty members of the department contribute in the research and advisory fields to other scientific branches in the College of Medicine and other colleges of the university, and also to the health institutions in Basra governorate with regard to the field of clinical biochemistry and laboratory tests.

12. Acceptance Criterion

A. Central admission : for undergraduate studies
B. Direct application for postgraduate studies - according to the Average and Competitive examination.

13. The most important sources of information about the program

A- Textbooks
1-Medical Chemistry : Chemical Basis of Life
2- Biochemistry : Lippincott's Illustrated Reviews: Biochemistry
3- Laboratory manual of Practical Biochemistry
B- Researches and published studies on approved Journals and Scientific Web sites.

14. Program Development Plan

Small group teaching

Problem solving clinical cases

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
1st Year		Medical Chemistry		yes	yes	yes	yes	yes	yes	yes		yes	yes		
		Biochemistry		yes	yes	yes	yes	yes	yes	yes		yes	yes		
2nd Year		Biochemistry		yes	yes	yes	yes	yes	yes	yes		yes	yes		
		Clinical Biochemistry		yes	yes	yes	yes	yes	yes	yes		yes	yes		
Post-graduate															

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**

Course Description Form

1. Course Name:	
Medical Chemistry \ First year Biochemistry \ Second year	
2. Course Code:	
3. Semester / Year:	
2023−2024	
4. Description Preparation Date:	
17/3/2024	
5. Available Attendance Forms:	
Lecture room,, Practical lab	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Medical Chemistry: 60 hours theoretical lectures 60 hours practical lectures Biochemistry: 90 hours theoretical lectures 60 hours practical lectures	
7. Course administrator's name (mention all, if more than one name)	
Assist. Prof. Abdulkader A. Abdulkader	abdulkader.wahab@uobasrah.edu.iq
Prof. Jamal A. Abdulbary	jamal.barry@uobasrah.edu.iq
Prof. Salman K. Ajlan	salman.ajlan@uobasrah.edu.iq
Prof. Nazar S. Abdulwahab	nazar.haddad@uobasrah.edu.iq
Lecturer Entessar A. Abdulreda	entessar.abdulreda@uobasrah.edu.iq
Lecturer Muhannad M. Abdul karim	muhannad.karim@uobasrah.edu.iq
Lecturer Ihsan S. Mahmood	ihsan.mahmood@uobasrah.edu.iq
Lecturer Abrar E. Abdulsahib	abrar.emad@uobasrah.edu.iq
Assist. Lecturer Sabah G. Abood	sabah.ghasan@uobasrah.edu.iq
Assist. Lecturer Abbas A. Sabri	abbas.sabri@uobasrah.edu.iq
8. Course Objectives	
The branch seeks to be known and distinguished in the field of of biochemistry and clinical chemistry in Basra in particular and Iraq in general, by explaining and teaching these subjects to students of medical colleges and other supporting colleges, and preparing qualified graduates professionally and academically to carry out advanced	

laboratory and diagnostic work in health institutions, as well as educational tasks in academic institutions.

9. Teaching and Learning Strategies

Strategy	1. Theoretical Lectures 2. Practical Lessons and clinical cases 3. Small Groups teaching 4. Online Lectures

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Medical Chemistry – 1st year					
1-3	6	Organic Chemistry	Clinical chemistry	Lectures	Talks\exams
4-6	6	Inorganic Chemistry	Clinical chemistry	Lectures	Talks\exams
7-9	6	Analytical Chemistry	Clinical chemistry	Lectures	Talks\exams
10-11	4	Chemistry of Carbohydrates	Clinical chemistry	Lectures	Talks\exams
12-13	4	Chemistry of Proteins	Clinical chemistry	Lectures	Talks\exams
14-15	4	Lipid Chemistry	Clinical chemistry	Lectures	Talks\exams
16	2	Nucleic Acid Chemistry	Clinical chemistry	Lectures	Talks\exams
17-20	6	Chemistry of Enzymes	Clinical chemistry	Lectures	Talks\exams
21	2	Chemistry of Muscles	Clinical chemistry	Lectures	Talks\exams
22	2	Cell Membrane	Clinical chemistry	Lectures	Talks\exams
1	10	Introduction and Instruments	Clinical chemistry	Practical\ small group teaching	Talks\exams
2-6	50	Titrations	Clinical chemistry	Practical\ small group teaching	Talks\exams
7-10	40	Color reactions of Carbohydrates	Clinical chemistry	Practical\ small group teaching	Talks\exams
11-14	40	Color reactions of Proteins	Clinical chemistry	Practical\ small group teaching	Talks\exams
15-18	40	Enzymes	Clinical chemistry	Practical\ small group teaching	Talks\exams
18-21	30	Normal urine examination	Clinical chemistry	Practical\ small group teaching	Talks\exams

Biochemistry – 2nd year					
1-2	6	Vitamins	Biochemistry	Lectures	Talks\exams
3-6	12	Carbohydrates metabolism	Biochemistry	Lectures	Talks\exams
7-9	10	Lipid metabolism	Biochemistry	Lectures	Talks\exams
10-11	4	Proteins metabolism	Biochemistry	Lectures	Talks\exams
11-12	4	Nucleotides metabolism	Biochemistry	Lectures	Talks\exams
13-15	6	Amino acids metabolism	Biochemistry	Lectures	Talks\exams
16-18	10	Hormones	Biochemistry	Lectures	Talks\exams
19-20	4	Diabetes Mellitus	Biochemistry	Lectures	Talks\exams
20-21	6	Nutrition	Biochemistry	Lectures	Talks\exams
22	2	Cardiac markers	Biochemistry	Lectures	Talks\exams
23	4	Liver function tests	Biochemistry	Lectures	Talks\exams
24	2	Renal function tests	Biochemistry	Lectures	Talks\exams
25	4	Diagnostic enzymology	Biochemistry	Lectures	Talks\exams
26	4	Haemoglobin metabolism	Biochemistry	Lectures	Talks\exams
27	4	Cancer chemistry	Biochemistry	Lectures	Talks\exams
28	4	Mineral metabolism	Biochemistry	Lectures	Talks\exams
29	2	Antioxidants	Biochemistry	Lectures	Talks\exams
30	2	Xenobiotics	Biochemistry	Lectures	Talks\exams
1	15	Principle of colorimetry and Standard curve	Biochemistry	Practical\ small group teaching	Talks\exams
2	15	Estimation of Alkaline phosphatase	Biochemistry	Practical\ small group teaching	Talks\exams
3	15	Clinical cases in vitamins	Biochemistry	Practical\ small group teaching	Talks\exams
4	15	Estimation of serum glucose	Biochemistry	Practical\ small group teaching	Talks\exams
5	15	Point of care testing	Biochemistry	Practical\ small group teaching	Talks\exams
6	15	Clinical cases in Diabetes mellitus	Biochemistry	Practical\ small group teaching	Talks\exams
7	15	Clinical cases in lipids	Biochemistry	Practical\ small group teaching	Talks\exams
8	15	Clinical cases in diagnostic enzymology	Biochemistry	Practical\ small group teaching	Talks\exams
9	15	Estimation of serum amylase	Biochemistry	Practical\ small group teaching	Talks\exams
10	15	Estimation of blood urea	Biochemistry	Practical\ small group teaching	Talks\exams
11	15	Clinical cases in nutrition	Biochemistry	Practical\ small group teaching	Talks\exams
12	15	Estimation of serum creatinine	Biochemistry	Practical\ small group teaching	Talks\exams
13	15	Estimation of serum creatinine and creatinine clearance	Biochemistry	Practical\ small group teaching	Talks\exams

14	15	Abnormal constituents of urine	Biochemistry	Practical\ small group teaching	Talks\exams
15	15	Clinical cases in renal diseases	Biochemistry	Practical\ small group teaching	Talks\exams
16-17	30	Clinical cases in hormones	Biochemistry	Practical\ small group teaching	Talks\exams
18	15	Estimation of serum calcium and phosphate	Biochemistry	Practical\ small group teaching	Talks\exams
19	15	Estimation of serum uric acid	Biochemistry	Practical\ small group teaching	Talks\exams
20	15	Plasma proteins	Biochemistry	Practical\ small group teaching	Talks\exams
21	15	Clinical cases in liver diseases	Biochemistry	Practical\ small group teaching	Talks\exams

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**Chemical bases of life** **Lippincott's Illustrated Reviews: Biochemistry** **Harper's physiological Chemistry**
Main references (sources)	**Chemical bases of life** **Lippincott's Illustrated Reviews: Biochemistry** **Harper's physiological Chemistry**
Recommended books and references (scientific journals, reports…)	Medical Journals in google scholar. WHO reports. Pub med journals
Electronic References, Websites	Web sites in Biochemistry and Clinical Biochemistry