فاكريا يدلوص
عدس

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

2025-2024

جامعة تكريت
كلية الطب البيطري

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.

Academic Program Description Form

University: Tikrit University
Faculty/Institute: Veterinary medicine .....
Scientific Department: Microbiology.....
Academic or Professional Program: Molecular Biology
Final Certificate Named: MSc degree in Microbiology.....
Academic System: Courses and thesis.....
Description Preparation Date: 5 /10/ 2024
File Completion Date:6 /10/ 2024

Signature:
Head of Department Name:
Prof.Ass.Dr.Sanna Ahmed Sauod
Date:6/10//2024

Signature:
Scientific Associate Name:
Prof.Dkheel Hussain
Date:6/10//2024

The file is checked by: Ahmed Abdullah Sultan
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date: 6/10/2024
Signature:

Approval of the Dean

1. **Program Vision**
The program vision is written here as stated in the university's catalog and website.

2. **Program Mission**
The program mission is written here as stated in the university's catalog and website.

3. **Program Objectives**
General statements describing what the program or institution intends to achieve.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency?

5. **Other external influences**
Is there a sponsor for the program?

6. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements	**45**	**3**		**Basic course**
College Requirements	**yes**			

Department Requirements	**Yes**			
Summer Training	**No**			
Other				

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

7. Program Description				
Year/Level	**Course Code**	**Course Name**	**Credit Hours**	
2024-2025 (1st)		**Molecular biology**	**theoretical**	
Postgraduate				

8. Expected learning outcomes of the program

Knowledge

1- Cognitive objectives.
2- Enabling students with good advanced knowledge of molecular cell biology,molecular microbiology and molecular immunology
3- Enabling students to conduct advanced scientific research and expand scientific research work in the field of molecular biology of bacteria and immune system
4- Enabling postgraduate students to develop their skills by attending seminars, courses and seminars related to the genetics and molecular bilogy branch.

Skills

1- The student will acquire skills in how to deal with laboratory equipment and materials related to the molecular cell biology cell culture and epigenetics such as MicroRNAs, DNA methylation and histone modification for the purpose of conducting scientific experiments related to molecular microbiology and molecular immunology

2- The student will acquire skills about the DNA extraction, RNA extraction, and measuring of nucleic acid puriy as well as

3- The student will acquire the appropriate skills to use PCR and the equipment of the MOLECULAR BIOLOGY laboratory.

4- The student will acquire the skills to conduct molecular diagnosing bacteria.

Ethics: Developing students' abilities to share modern ideas related to the microbiology branch.

9. Teaching and Learning Strategies

1- Theoretical lectures.
2- Scientific seminars and courses
3- Seminars that students are assigned to present and discuss with them.
4- Scientific discussions during scheduled scientific lectures, asking questions, and brainstorming for graduate students.

10. Evaluation methods

1- Daily, monthly and final exams.

2- Reports.

3- Seminars

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Lecturer Doctor Muthanna Ali Sultan	Veterinary Medicine	Biomedical sciences			staff	

Professional Development
Mentoring new faculty members
Attending scientific seminars and courses, as well as keeping up with seminars and courses held electronically at international universities
Professional development of faculty members
Explaining the mechanism for arranging and sequencing lectures, as well as the assessment and evaluation methods used for graduate students

12. Acceptance Criterion

Competitive examination and the ministry's plan

13. The most important sources of information about the program

1- Molecular Biology, 3rd Edition - November 2, 2018, Authors: David P. Clark, Nanette J. Pazdernik, Michelle R. McGehee

14. Program Development Plan
Updating the curriculum by updating lectures and modern scientific sources

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
2024-2025 1st		Molecular	Basic	√					√				√		

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

Course Description Form

1. Course Name:
Molecular biology
2. Course Code:
MIC 134,MIC 234
3. Semester / Year:
Second semester
4. Description Preparation Date:
5/10/2024
5. Available Attendance Forms:
My presence
6. Number of Credit Hours (Total) / Number of Units (Total)
45 / 3
7. Course administrator's name (mention all, if more than one name)
Name: Muthanna Ali Sultan, Ph.D. Email: muthanna.sultan@tu.edu.iq
8. Course Objectives
Course Main Objective • Characteristics of the genetic material and DNA structure. DNA and RNA as the genetic material. • Gene concept at the molecular level. • DNA organization in chromosomes and DNA replication. • Epigenetics including MicroRNAs, DNA methylation and Histone modications • Concepts and regulation of gene expression. And western blott - Gel electrophoresis and gene libraries. • DNA library preparations of microbiome • Illumina miseq sequence , single cell RNA sequencing and microsrrsy
9. Teaching and Learning Strategies
1- Educational strategy, collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series
10. Course Structure

16 - Course level: first year
Course Name: molecular biology / 2 hours
Semester: first

Evaluation method	Teaching method	Name of unit/course or subject	Required learning outcomes	Hours	Week

Questions and discussion	**Lecture explanation**	Syllabus review, study skills review Introduction to Molecular Biology	**1-Introduction 2-discussion basic and advanced details**	**Theoretical 2**	**1**
Questions and discussion	**Lecture explanation**	Central Dogma	1-Introduction	**Theoretical 2**	**2**
Questions and discussion	**Lecture explanation**	DNA structure.	2-discussion basic and advanced details	**Theoretical 2**	**3**
Questions and discussion	**Lecture explanation**	DNA replication.	1-Introduction	**Theoretical 2**	**4**
Questions and discussion	**Lecture explanation**	Molecular structure of the gene.	2-discussion basic and advanced details	**Theoretical 3**	**5**
Questions and discussion	**Lecture explanation**	RNA structure , types and Transcription	1-Introduction	**Theoretical 2**	**6**
Questions and discussion	**Lecture explanation**	Genetic code	2-discussion basic and advanced details	**Theoretical 2**	**8**
Questions and discussion	**Lecture explanation**	Translation.	1-Introduction	**Theoretical 2**	**9**
Questions and discussion	**Lecture explanation**	Proteins structure and function	2-discussion basic and advanced details	**Theoretical 2**	**10**
Questions and discussion	**Lecture explanation**	Regulation of Gene expression	1-Introduction	**Theoretical 2**	**11**
Questions and discussion	**Lecture explanation**	Mutations.	2-discussion basic and advanced details	**Theoretical 2**	**12**
Questions and discussion	**Lecture explanation**	Epigenetics(microRNAs, DNA methylation and histone modifications)	1-discussion basics and advanced details	**Theoretical 2**	**13**
Questions and discussion	**Lecture explanation**	Molecular techniques	2-discussion basic and advanced details	**Theoretical 2**	**14**
Questions and discussion	**Lecture explanation**	Introduction to Bioinformatics	1-Introduction	**Theoretical 2**	**15**
Final exam					

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

1- **Molecular Biology** 3rd Edition - November 2, 2018, Authors: David P. Clark, Nanette J. Pazdernik, Michelle R. McGehe