Academic Program Description Form

University Name: .Al-Muthanna University.....
Faculty/Institute: .Science collage.....
Scientific Department: .Biology.....
Academic or Professional Program Name: .....
Final Certificate Name: .....
Academic System: .....
Description Preparation Date:
File Completion Date:

Signature:
Head of Department Name:
Assit Prof. Dr. Hanaa Ali Aziz
Date:

Signature:
Scientific Associate Name:
Dr. Salah. A. Hassan AlMurshidee
Date:

جامعة المثنى / كلية العلوم
مكتب العميد

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:

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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University Name: .**Al-Muthanna University**.....

Faculty/Institute: .**Science collage**.....

Scientific Department: .**Biology**……

Academic or Professional Program Name: ……

Final Certificate Name: ……

Academic System: ……

Description Preparation Date:

File Completion Date:

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:

Signature:

Approval of the Dean

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

2. Program Mission

Program mission is written here as stated in the university's catalogue 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				
College Requirements				
Department Requirements				
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

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan

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		Antibiotics	Basic	●	●	●			●	●		●	●		

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

Course Description Form

1. Course Name:	
Antibiotics	
2. Course Code:	
3. Semester / Year:	
Course	
4. Description Preparation Date:	
21\9\2024	
5. Available Attendance Forms:	
6. Number of Credit Hours (Total) / Number of Units (Total)	
10\2	
7. Course administrator's name (mention all, if more than one name)	
Name: Mouna Akeel Hamed Al-Oebady Email:	
8. Course Objectives	
Course Objectives	**Explaining the basic principles of diagnos biological tests for antibiotics…..** **Explaining the interferences that may occu the inhibition zones of antibiotics** **Explaining the mechanics of the tests and h to deal with models of various types…..** **Knowing the mechanism of killing or inhibit different microorganisms** **Knowing how to interpret the results and how write test results reports……** • ….. • …..
9. Teaching and Learning Strategies	
Strategy	.Providing students with experience in applied life sciences .1 .Providing state institutions with specialized cadres .2 Preparing cadres with high experience in life sciences and experience in

	.ch deviceste-knowing high Providing students with scientific techniques in using devices and .equipment that can be used in their theoretical and applied studies Research and study everything new in biological sciences and keep .n this fieldpace with scientific developments i

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1		duction to antibiot	roduction of t	Use data sh	Daily and month
		and the ma	antibiot	devices to displ	exams
				the lecture or gi	
2		characteristics		simultaneously	Daily and month
		antibioti		with	exams
3		echanisms of action	Structure of Cell w	demonstration	Daily and month
4		antibiotics: Cell w	synthesis inhibit	Use data sh	exams
		synthesis inhibit	antibiot	devices to displ	
		antibiotics (e		the lecture or gi	
		Penicillin		simultaneously	
				with	
5		Cephalospor	Group of Cell w	demonstration	Daily and month
		Other cell w	inhibit	Use data sh	exams
		synthesis inhibit	Other beta lacta	devices to displ	
6		ntibiotics and pepti	antibiot	the lecture or gi	
7		antibiot		simultaneously	
		Protein synthe	Aminoglycosi	with	
8		inhibitor antibiot		demonstration	Daily and month
		)Tetracyclines		Use data sh	exams
		Aminoglycosid	Macrolid	devices to displ	
9		her protein synthe		the lecture or gi	Daily and month
		inhibitor antibiot	Chloramphenic	imultaneously s	exams
10		(e.g., Macrolid		with	Daily and month
		Exan		demonstration	exams
11		Chloramphenic	Antibiotics correlat	Use data sh	
12		&Clindamy	with nucleic a	devices to displ	y Daily and mor
13		Nucleic acid synthe	Sulfonamid	the lecture or gi	exams
		inhibitor antibiot	Study the structure	simultaneously	
14		Sulfonamides a	Quinolor	with	Daily and month
		Trimethopr		demonstration	exams
		Quinolor		Use data sh	Daily and month
		Pharmacokinetics a		devices to displ	exams
				the lecture or gi	
				simultaneously	

15		Pharmacodynamics the antibiot ntibiotic action in t ody and its resistar and Applications antibiotics in l Exam 2	Pharmacokinet resistance	with demonstration Use data sh devices to disp the lecture or gi simultaneously with demonstration	Daily and month 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)	Antibiotics
Main references (sources)	Finkel, R. S., 2009. Lippincot illustrated reviews: pharmacolo Fourth edition, Philadelphia Lippincott Williams & Wilkins
Recommended books and references (scientific journals, reports…)	Review of medical microbiolog Jawetz
Electronic References, Websites	

Ministry of Higher Education and Scientific Research
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Academic Program Description Form

University Name: **Al Muthanna**
Faculty/Institute: **Science**
Scientific Department: **Biology**
Academic or Professional Program Name: **Bachelor's**
Final Certificate Name: **Bachelor's in Biology**
Academic System: **courses**
Description Preparation Date:
File Completion Date:

Signature:
Head of Department Name:
Asst. Prof. Dr. Hanaa Ali Aziz
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:
Signature:

Approval of the Dean

1. Program Vision

Our vision is to establish a leading program in clinical analysis that cultivates a deep understanding of pathological principles and innovations. We aim to foster a learning environment that promotes scientific curiosity, critical thinking, and the application of clinical knowledge to solve real-world health problems.

2. Program Mission

Our mission is to provide a comprehensive education in clinical analysis, equipping students with the knowledge and skills necessary to excel in academic, research, and healthcare settings. We strive to advance the field through cutting-edge research, ethical practices, and the development of innovative solutions to global health challenges.

3. Program Objectives

The objectives of the clinical analysis program are designed to provide students with a comprehensive understanding of clinical laboratory techniques and their applications. These include:

Examination of Urine: Teach the principles of pathological analysis in the laboratory, including urine tests and the use of urine strips for detecting chemical components and urine cultures.

Renal Function Tests: Educate on urine tests and urine strips to evaluate kidney function.

Chemical Components of Urine: Develop skills in performing and interpreting urine culture results.

Liver Function Tests: Provide knowledge on biochemical tests to assess liver function.

Examination of Feces: Train students in stool tests for detecting gastrointestinal diseases.

Semen Analysis: Guide students through semen tests to evaluate male fertility.

Pregnancy Tests: Explain the principles and methods of conducting pregnancy tests.

Blood and Components: Teach about blood sugar levels and the diagnosis of Diabetes Mellitus, including hypoglycemia and hyperglycemia.

Laboratory Tests in Anemia: Instruct on blood smear techniques, Hb, PCV, RBC, and WBC counts for diagnosing various forms of anemia such as aplastic, pernicious, and megaloblastic anemia.

Laboratory Tests in Hematological Malignancies: Train students to perform blood smears and other tests for leukemia patients.

Coagulation Factors and Bleeding Disorders: Educate on tests like ESR, bleeding time, and blood grouping.

Examination of Sputum: Teach the use of acid-fast stains for TB bacteria and sample cultures.

Examination of Cerebrospinal Fluid: Provide skills in using acid-fast stains and cultures for diagnosing

infections.

Sexually Transmitted Diseases (STD): Instruct on the collection and culture of swabs for STD testing.

Science Serology: Educate on serological tests for autoimmune diseases, including tests for Rheumatoid Arthritis, C-Reactive Protein (C.R.P), Widal test, Rose Bengal, Antistreptolysin test (A.S.O.T), and the principles of ELISA, PCR, and real-time PCR.

4. Program Accreditation

Yes- Ministry of Higher Education and Scientific Research (Iraq)

5. Other external influences

Ministry of Higher Education and Scientific Research (Iraq)

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	X	3		
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

Four			**theoretical**	**practical**

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Understand the fundamental principles of clinical analysis, including the structure and functions of various biological fluids and tissues, and the processes of laboratory testing and analysis.
Skills	
Learning Outcomes 2	**Learning Outcome Statement 2:** Explain the mechanisms of disease detection and diagnosis through laboratory tests, such as urine tests, blood tests, and microbiological cultures, and their significance in clinical decision-making and patient care.
Learning Outcomes 3	**Learning Outcome Statement 3:** Analyze and interpret experimental data relevant to clinical analysis, such as results from biochemical tests, hematological assessments, and serological assays, and apply statistical methods for data analysis to ensure accuracy and reliability.
Ethics	
Learning Outcomes 4	Understand the ethical considerations in clinical analysis, including the responsible handling of patient samples, confidentiality, and the ethical use of diagnostic techniques.
Learning Outcomes 5	Make informed decisions regarding ethical dilemmas in clinical analysis, emphasizing the importance of patient privacy, consent, and responsible reporting of test results.

9. Teaching and Learning Strategies

The program adopts a variety of teaching and learning strategies, including:

- **Active Participation and Interaction:** Encouraging students to participate in lectures, ask questions, and engage in discussions.
- **Active Listening:** Emphasizing attentive listening during explanations and demonstrations.
- **Hands-on Laboratory Sessions:** Providing practical laboratory sessions to apply theoretical knowledge.
- **Case Studies and Practical Workshops:** Incorporating real-world scenarios to enhance problem-solving skills.
- **Communication Skills Training:** Focusing on effective scientific communication, both written and oral.
- **Integration of General and Transferable Skills:** Developing critical thinking, problem-solving, and research skills.
- **Ethical Considerations:** Teaching responsible use of genetic engineering and discussing ethical dilemmas.
- **Staying Updated with Research:** Encouraging students to keep up with the latest advancements in the field.
- **Collaboration and Teamwork:** Promoting group projects and assignments to simulate real-world scientific collaborations.

10. Evaluation methods

- Evaluation methods are implemented at various stages of the program, including:
- Continuous Assessment: Regular quizzes, assignments, and participation.
- Laboratory Reports: Evaluation of practical work and experimental results.
- Examinations: Mid-term and final exams to assess comprehensive understanding.
- Projects and Presentations: Assessing the ability to apply knowledge and communicate findings.
- Peer and Self-Assessment: Encouraging reflective learning and peer feedback.
- Mid exam
- Final exam

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Dr.	Biology	Molecular biology and biotechnology				

Professional Development

Mentoring new faculty members

- Orientation programs to familiarize them with departmental policies and teaching methodologies.
- Regular meetings with experienced faculty mentors to discuss teaching strategies and research integration.

Professional development of faculty members

The academic and professional development plan includes:

- Workshops on innovative teaching and learning strategies.
- Seminars on the latest research advancements in microbial genetics.
- Opportunities for faculty to attend conferences and participate in collaborative research projects.
- Regular assessments and feedback sessions to enhance teaching effectiveness.

12. Acceptance Criterion

The program follows the central admission regulations set by the university, which include academic qualifications, entrance exams, and interviews.

13. The most important sources of information about the program

- Essentials of Clinical Pathology Book First Edition: 2010 ISBN 978-93-80704-19-7
- Manual of laboratory and Diagnostic Tests. Edition (8) copyright2009 Vol. (1) (2).by Lippincott Williams& wilkins.
- Robbins Pathology Books
- Textbook of Diagnostic Microbiology ISBN: 978-1-4160-6165-6-Fourth Edition.

14. Program Development Plan

The development plan for the Clinical Analysis program involves continuous curriculum review and updates based on the following key elements:

- **Feedback from Students, Faculty, and Industry Partners**: Regularly collect and incorporate feedback from students, faculty, and industry partners to ensure the curriculum remains relevant and meets the needs of all stakeholders.
- **Emerging Trends and Technological Advancements**: Stay abreast of the latest trends and technological advancements in clinical analysis and laboratory medicine to integrate new knowledge and techniques into the curriculum.
- **Accreditation Requirements and Standards**: Adhere to accreditation requirements and standards set by relevant accrediting bodies to ensure the program maintains high educational and professional standards.

- **Periodic Assessments**: Conduct regular assessments and evaluations of the program to ensure it meets its educational and professional objectives, making adjustments as necessary to improve outcomes and maintain excellence.
-

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
Four		Clinical analysis	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: Clinical analysis
2. Course Code:
3. Semester / Year: First /2024
4. Description Preparation Date: 26-5-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: Asst Prof. Dr. Yasir Adil Jabba Alabdali Email: yasir.alabdali@mu.edu.iq
8. Course Objectives

Course Objectives	• **Provide a Thorough Understanding of the Chemical Basis of Disease: Ensure students comprehend the chemical and biochemical foundations underlying various diseases and pathological conditions.** • **Equip Students with Practical Skills in Laboratory Techniques: Train students in practical skills for collecting and analyzing various biological samples, such as blood, urine, stool, sputum, and cerebrospinal fluid.** • **Explore the Processes of Diagnosis and Monitoring: Educate students on the processes and techniques involved in diagnosing and monitoring diseases, including the use of biochemical tests, urine tests, and hematological assessments.** • **Analyze Genetic and Metabolic Disorders: Investigate genetic and metabolic disorders through laboratory tests, focusing on mutations, repair mechanisms, and methods for detecting genetic abnormalities.** • **Investigate the Mechanisms of Disease Transmission and Detection: Study the mechanisms of disease transmission and detection, including the identification of pathogens through microbiological cultures and serological assays.**

	• **Understand the Regulation of Biological Processes: Provide an understanding of how various biological processes are regulated in health and disease, including the regulation of blood sugar, liver function, and renal function.** • • **Introduce Advanced Diagnostic Techniques: Introduce students to advanced diagnostic techniques, such as molecular diagnostics, including PCR, real-time PCR, and ELISA, for detecting and quantifying specific biomarkers and pathogens.**

9. Teaching and Learning Strategies

Strategy	• **Active Participation and Interaction: Engage students in discussions and interactive lectures to deepen** • **understanding.** • **Hands-on Laboratory Sessions: Facilitate practical experiments to apply theoretical knowledge.** • **Case Studies and Practical Workshops: Provide real-world scenarios to enhance problem-solving skills.** • **Communication Skills Training: Develop written and oral communication skills for scientific contexts.** • **Integration of General and Transferable Skills: Incorporate critical thinking, problem-solving, and research skills** • **into the curriculum.** • **Ethical Considerations: Discuss ethical issues related to genetic research and engineering.** • **Staying Updated with Research: Encourage students to read scientific journals and participate in research activities.** • **Collaboration and Teamwork: Promote group projects and teamwork to simulate scientific collaboration.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Examination of Urine	Principles of Pathological Analysis Laboratory	Lecture and Discussion	Quiz
2	2	Renal Function Tests	Urine test , urine strips	Laboratory Session	Lab Report
3	2	Chemical components of urine	Urine culture	Practical Workshop	Lab Report
4	2	Liver Function Tests	Biochemical Test	Lecture and Discussion	Mid-term Exam
5	2	Examination of Feces	Stool test	Laboratory Session	Lab Report
6	2	Semen Analysis	Semen test	Lecture and Discussion	Quiz
7	2	Pregnancy Tests	Pregnancy Test	Practical Workshop	Assignment
8	2	Blood and components, blood sugar Diabetes Mellitus types and disease (Hypoglycemia and Hyperglycemia)	Blood sugar	Laboratory Session	Lab Report
9	2	Laboratory Tests in Anemia Blood disease Anemia Aplastic anemia	Blood smear such as Hb , PCV, RBC counts and WBC counts	Lecture and Discussion	Quiz

		Pernicious anemia Megaloblastic anemia			
10	2	Laboratory Tests in Hematological Malignancies	Blood smear for Leukemia patients	Lecture and Case Study	Assignment
11	2	Coagulation factors bleeding disorder Erythrocyte Sedimentation Rate	ESR, bleeding time, blood groups	Practical Workshop	Mid-term Exam
12	2	Examination of Sputum	Acid fast stains for TB bacteria and Samples cultures	Lecture and Discussion	Quiz
13	2	Examination of Cerebrospinal Fluid	Acid fast stains for TB bacteria and Samples cultures	Laboratory Session	Lab Report
14	2	Sexually Transmitted Diseases (STD)	Swabs cultures	Lecture and Discussion	Assignment
15	2	Science Serology Serological tests for autoimmune diseases Rheumatoid Arthritis C-Reactive Protein C.R.P Widal test Wrights agglutination test or Rose Bengal Antistreptolysin test (A.S.O.T) ELISA test principal Poly chain reaction PCR, and real-time PCR	Serological tests Rheumatoid Arthritis C-Reactive Protein C.R.P Widal test Rose Bengal Antistreptolysin test (A.S.O.T) ELISA test Poly chain reaction PCR, and real-time PCR	Lecture and Case Study	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

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	1-4160-6165-6-Fourth Edition.
Electronic References, Websites	• PubMed • Microbiology Society website

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Faculty/Institute: **Science of college**
Scientific Department: **Biology**
Academic or Professional Program Name: **Bsc Biology**
Final Certificate Name: **Bsc Biology**
Academic System: **course**
Description Preparation Date: **19/9/2024**
File Completion Date: **19/9/2024**

Signature:	**Signature**:
Head of Department Name:	**Scientific Associate Name**:
Assist prof.Dr Hanaa Ali Aziz	**Lecture Dr .Salah Abdulkhuther**
Date:	**Date**:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approval of the Dean

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

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

3. **Program Objectives**
1-Providing students with experience in applied life sciences. 2- Providing state institutions with specialized cadres. 3- Preparing cadres with high experience in life sciences and experience in knowing high-tech devices. 4- Providing students with scientific techniques in using devices and equipment that can be used in their theoretical and applied studies. 5--Research and study everything new in biological sciences and keep pace with scientific developments in this field.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency? NO

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				
College Requirements				
Department Requirements				
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	
fourth		**Comparative Anatomy**	**theoretical**	**practical**
			2	**2**

8. Expected learning outcomes of the program

Knowledge	
Cognitive goals 1- Providing the student with sufficient information to gain experience in dealing with life sciences and laboratory techniques. 2- Gain experience in knowing all laboratory equipment and modern technologies. 3- Providing him with sufficient information to keep up with and study modern sciences.	
Skills	

Skills objectives of the programme 1- He has experience in knowing and operating equipment for laboratory tests. 2- Possessing scientific knowledge to keep pace with modern developments in biological sciences.	

Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Practical theoretical lectures, scientific seminars, application in laboratories, in addition to the training courses held by the department.

10. Evaluation methods

Through weekly and quarterly examinations, in addition to scientific reports.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Prof	Biology	physiology			✓	

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.

Professional development of faculty members

Personal development is planned through access to modern scientific sources, in addition to participating in training courses inside and outside the country in the field of scientific specialization.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

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
fourth		Comparative Anatomy	Basic	+	+	+	+	+	+	+	+	+	+		

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

Course Description Form

1. Course Name: Comparative Anatomy
2. Course Code:
3. Semester / Year: Semester
4. Description Preparation Date:1/3/2024
5. Available Attendance Forms: 1/3/2024
6. Number of Credit Hours (4) / Number of Units (3)
7. Course administrator's name (mention all, if more than one name)
Name: Assist.Prof. Hanaa Ali Aziz Email: hanabio-1983@mu.edu.iq
8. Course Objectives

Course Objectives	1. This course is designed to cover Introducing students to the most important phenotypic and anatomical characteristics through the similarities and differences between different types of vertebrate organisms such as mammals, birds, fish, and providing the student with the necessary skill to study the anatomical characteristics of various organisms. 2. This course give an overview Define the physiological science in the deferent systems .Diagnosis the main character of specific signs of cells Determined the relationship between the internal and external environment 3. Develop and encourage the field of scientific research and provide all stude with a broad education in the basic aspects and understand laboratory tests

9. Teaching and Learning Strategies

Strategy	The main strategy that will be adopted to study the animal phyla. It will expected to be familiar with the names and characteristics of the phyla, be a to identify specimens and their morphology, and discuss their ecology a evolution. We will leave for field trips promptly when lab begins, so be on ti You will not be allowed to make up missed labs

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	4hours		**Chordate definition, evolutionary foundations characteristics, and origi**	Smart screen	**Daily and monthly exams**
2	4hours		**Respiratory system and respiratory mechanism**	Smart screen	**Daily and monthly exams**
3	4hours		**Digestive system and glan attached to the digestive system**	Smart screen	**Daily and monthly exams**
4	4hours		**Circulation and circulat system**	Smart screen	**Daily and monthly exams**
5	4hours		**excretory system**	Smart screen	**Daily and monthly exams**
6	4hours		**dermatology**	Smart screen	**Daily monthly exams**
7	4hours		**Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circ**	Smart screen	**Daily monthly exams**
8	4hours		**male reproductive system**	Smart screen	**Daily monthly exams**
9	4hours		**female reproductive system**	Smart screen	**Daily monthly exams**
10	4hours		**Oral cavity and digestive system**	Smart screen	**Daily monthly exams**
11	4hours		**Comparative anatomy organs in different chordates**	Smart screen	**Daily monthly exams**

12	4hours		**Types of gills and comparative anatomy**	Smart screen	**Daily monthly exams**
13	4hours		**The lymphatic system a the movement of lymphatic fluid**	Smart screen	**Daily monthly exams**
14	4hours		**Muscular system**	Smart screen	**Daily monthly exams**
15	4hours		**Skeletal system**	Smart screen	**Daily monthly 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)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	**•Anatomy & Physiology of Animals, Floron C. Faries, Jr., DVM, MS,2015** **•Color atlas of avian anatomy, J.McLelland 1990** **• التشريح المقارت للفقريات (د. منى فريد عبد الرحمن)** **Biology journals, medical journal,**
Electronic References, Websites	

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

Academic Programand CourseDescription 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 theyhave 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 Name:Al Muthanna

Faculty/Institute:Science

Scientific Department: Biology

Academic or Professional Program Name:Bachelor's

Final Certificate Name: **Bachelor's in Biology**

Academic System:**courses**

Description Preparation Date: **26–5–2024**

File CompletionDate: **26–5–2024**

Signature:

Head of DepartmentName:

Asst. Prof. Dr. Hanaa Ali Aziz

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Departmentof Quality Assurance and University Performance

Director of the Quality Assurance and UniversityPerformance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

Our vision is to create a pioneering program in Immunology that advances a deep understanding of the principles of Microbiology that cause disease. We aim to foster an educational environment that fosters scientific curiosity, critical thinking, and the application of clinical knowledge to solve real-world health problems.

2. Program Mission

Our mission is to provide a comprehensive education in Immunology, equipping students with the knowledge and skills necessary to excel in academic, research, and healthcare settings. We strive to advance the field through cutting-edge research, ethical practices, and the development of innovative solutions to global health challenges.

3. Program Objectives

1- Providing students with experience in applied life sciences.
2- Providing state institutions with specialized cadres.
3- Preparing cadres with high experience in life sciences and experience in knowing high-tech devices for investigating microorganisms.
4- Providing students with scientific techniques in using devices and equipment that can be used in their theoretical and applied studies.
5--Research and study everything new in biological sciences and keep pace with scientific developments in this field.

4. Program Accreditation

Yes– Ministry of Higher Education and Scientific Research (Iraq)

5. Other external influences

Ministry of Higher Education and Scientific Research (Iraq)

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	X	3		
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**	
Third		Immunology	**theoretical**	**practical**

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	• Providing the student with sufficient information to gain experience in dealing with life sciences and laboratory techniques • Gain experience in knowing all laboratory equipment and modern technologies. • Providing him with sufficient information to keep up with and study modern sciences
Skills	
Learning Outcomes 2	**Learning Outcome Statement 2** :To learn how to imitate and imitation • To learn the method of experimentation • Improving the student's ability to observation
Learning Outcomes 3	**Learning Outcome Statement 3:** Possessing scientific knowledge to keep pace with modern developments in biological sciences.
Ethics	
Learning Outcomes 4	Understand the ethical considerations, including the responsible handling of patient samples, confidentiality, and the ethical use of diagnostic techniques.
Learning Outcomes 5	• Enhancing the student's level of understanding through modern methods of learning • Providing him with accurate information • Making the student bear part of enhancing the scientific aspect

9. Teaching and Learning Strategies

Through weekly and quarterly examinations, in addition to scientific reports.

10. Evaluation methods

- Evaluation methods are implemented at various stages of the program, including:
- Continuous Assessment: Regular quizzes, assignments, and participation.
- Laboratory Reports: Evaluation of practical work and experimental results.
- Examinations: Mid-term and final exams to assess comprehensive understanding.
- Projects and Presentations: Assessing the ability to apply knowledge and communicate findings.
- Peer and Self-Assessment: Encouraging reflective learning and peer feedback.
- Mid exam
- Final exam

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Dr.	Biology	Medical Microbiology			✓	

Professional Development

Mentoring new faculty members

• Orientation programs to familiarize them with departmental policies and teaching methodologies.
• Regular meetings with experienced faculty mentors to discuss teaching strategies and research integration.

Professional development of faculty members

The academic and professional development plan includes:

- Workshops on innovative teaching and learning strategies.
- Seminars on the latest research advancements in Immunology.
- Opportunities for faculty to attend conferences and participate in collaborative research projects.

- Regular assessments and feedback sessions to enhance teaching effectiveness.

12. Acceptance Criterion

The program follows the central admission regulations set by the university, which include academic qualifications, entrance exams, and interviews.

13. The most important sources of information about the program

1- **Medical Microbiology: Jawetz, Melnick & Adelberg's (2013).**
2- **Medical Microbiology & Immunology: Warren Levinson (2012).**
3- **Microbiology and Immunology ,Subhash Chandra Parija,2012**

14. Program Development Plan

The development plan for the Immunology program involves continuous curriculum review and updates based on the following key elements:

- **Feedback from Students, Faculty, and Industry Partners**: Regularly collect and incorporate feedback from students, faculty, and industry partners to ensure the curriculum remains relevant and meets the needs of all stakeholders.
- **Emerging Trends and Technological Advancements**: Stay abreast of the latest trends and technological advancements in immunity to integrate new knowledge and techniques into the curriculum.
- **Accreditation Requirements and Standards**: Adhere to accreditation requirements and standards set by relevant accrediting bodies to ensure the program maintains high educational and professional standards.
- **Periodic Assessments**: Conduct regular assessments and evaluations of the program to ensure it meets its educational and professional objectives, making adjustments as necessary to improve outcomes and maintain excellence.

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
Third		Immunology	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: **Immunology**

2. Course Code:

3. Semester / Year: First Semester

4. Description Preparation Date: 26-5-2024

5. Available Attendance Forms:

6. Number of Credit Hours (Total) / Number of Units (Total):
   4/3

7. Course administrator's name (mention all, if more than one name)
   Name: Asst Prof. Dr. Noor Sami Aboud
   Email: drnoor_s78@mu.edu.iq

8. Course Objectives

Course Objective	- Knowing the mechanisms of action innate immunity and acquired immunity - Study of the lymphatic system and immune cells - Study of antigens and antibodies - Understanding how immunity system acts against microbes - Understanding the occurrence of diseases resulting from immunodeficiency or hyperimmunity, such as allergies, autoimmunity, and AIDS - Linking information to reality and applying it

9. Teaching and Learning Strategies

Strateg	• Active Participation and Interaction: Engage students in discussions and interactive lectures to deepen understanding. • Hands-on Laboratory Sessions: Facilitate practical experiments to apply theoretical knowledge. • Case Studies and Practical Workshops: Provide real-world scenarios to enhance problem-solving skills. • Communication Skills Training: Develop written and oral communication skills for scientific contexts. • Integration of General and Transferable Skills: Incorporate critical thinking, problem-solving, and research skills • into the curriculum. • Ethical Considerations: Discuss ethical issues related to genetic research and engineering. • Staying Updated with Research: Encourage students to read scientific journals and participate in research activities. • Collaboration and Teamwork: Promote group projects and teamwork to simulate scientific collaboration.

10. Course Structure

Week	Hours	Required Learning	Unit or subject	Learning	Evaluation

		Outcomes	name	method	method
1	2	Immune system, Role of the immune system,Historical Background of Immunology , Types of immunity	Introduction to Immunology as Science	Lecture and Discussion	Quiz
2	2	Characteristics of non-specific (Innate) immunity A. Anatomical barriers against infections: 1. Mechanical (physical) factors 2. Chemical factors 3. Biological factors B. Humoral barriers against infections C. Cellular barriers against infections	Types of Innate Immunity	Laboratory Session	Report
3	2	Characteristics of acquired Immunity: Classification of adaptive immunity according to the nature of the components Classification of adaptive immunity according to the route acquirement Factors affecting the immune system	Adeptive immunity	Practical Workshop	Report
4	2	Granulocytes:- polymorphonuclear cells (PMNs) Non- granulated cells Lymphocytes	Cells of the immune system	Lecture and Discussion	Mid-term Exam
5	2	Lymph and Lymphoid Tissues Organs of Immune System 1- Primary (central) lymphoid organs 2- Secondary (peripheral) lymphoid organs	Lymphatic organs	Laboratory Session	Report
6	2	Mechanisms of immune response Primary immune response Secondary immune response	The effectiveness of the immune system and the immune response	Lecture and Discussion	Quiz
7	2	Structure of Immunoglobulin Classes of immunoglobulines	Antibodies	Practical Workshop	Assignment
8	2	The properties of foreign substances that induce an	Antigens and Immunogen	Laboratory Session	Report

		immune response Factors Influencing Immunogenicity Epitope, Paratope, Hapten, adjuvant			
9	2	Antigen-Antibody Complex Affinity 1. Neutralization of microbes and toxins. 2. Activation of complement system 3. Opsonization: 4. Agglutination 5. Antibody-dependent cell-mediated cytotoxicity (ADCC):	Antigen-Antibody Reaction	Lecture and Discussion	Quiz
10	2	Complement System	1.Synthesis and metabolism of complement components. 2. Activation of the complement system. 3. Function of the complement system 4. Complement Pathways 5.Membrane attack complex Formation:	Lecture and Case Study	Assignment
11	2	Autoimmune diseases	Origin of T Cells thymic education Immunologic Tolerance	Practical Workshop	Mid-term Exam
12	2	Immunologic Tolerance	Central T-cell tolerance Peripheral T-cell tolerance Central B Cell Tolerance Peripheral B-cell tolerance	Lecture and Discussion	Quiz
13	2	Relationship between tumor and immunity	Immune cell with antitumor activity Tumor associated antigens immunotherapy	Laboratory Session	Report
11. Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, dailyoral, monthly, or written exams, reports .... etc					
12. Learning and Teaching Resources					

Required textbooks (curricular books, if any)	
Main references (sources)	1- Medical Microbiology: Jawetz, Melnick & Adelberg's (2013). 2- Medical Microbiology & Immunology: Warren Levinson (2012). 3- Microbiology and Immunology ,Subhash Chandra Parija,2012
Recommended books and references (scientific journals, reports...)	Scientific journals on Immunology
Electronic References, Websites	• PubMed • Immunology Society website

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

Academic Programand CourseDescription Guide

2024

Introduction:

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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 Name:**Al Muthanna**

Faculty/Institute:**Science**

Scientific Department: **Biology**

Academic or Professional Program Name:**Bachelor's**

Final Certificate Name: **Bachelor's in Biology**

Academic System:**courses**

Description Preparation Date: **1–9–2024**

File Completion Date: **1–9–2024**

Signature:

Head of DepartmentName:

Asst. Prof. Dr. Hanaa Ali Aziz

Date:

Signature:

Scientific Associate Name:

Date:

The file is checked by:

Departmentof Quality Assurance and University Performance

Director of the Quality Assurance and UniversityPerformance Department:

Date:

Signature:

Approval of the Dean

1. **Program Vision**
Our vision is to create a pioneering program in Immunology that advances a deep understanding of the principles of Microbiology that cause disease. We aim to foster an educational environment that fosters scientific curiosity, critical thinking, and the application of clinical knowledge to solve real-world health problems.

2. **Program Mission**
Our mission is to provide a comprehensive education in Immunology, equipping students with the knowledge and skills necessary to excel in academic, research, and healthcare settings. We strive to advance the field through cutting-edge research, ethical practices, and the development of innovative solutions to global health challenges.

3. **Program Objectives**
1- Providing students with experience in applied life sciences. 2- Providing state institutions with specialized cadres. 3- Preparing cadres with high experience in life sciences and experience in knowing high-tech devices for investigating microorganisms. 4- Providing students with scientific techniques in using devices and equipment that can be used in their theoretical and applied studies. 5--Research and study everything new in biological sciences and keep pace with scientific developments in this field.
4. **Program Accreditation**
Yes– Ministry of Higher Education and Scientific Research (Iraq)
5. **Other external influences**
Ministry of Higher Education and Scientific Research (Iraq)

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements	X	3		
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	
Fourth		Food Microbiology	theoretical	practical

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	• Providing the student with sufficient information to gain experience in dealing with life sciences and laboratory techniques • Gain experience in knowing all laboratory equipment and modern technologies. • Providing him with sufficient information to keep up with and study modern sciences
Skills	
Learning Outcomes 2	**Learning Outcome Statement 2** :To learn how to imitate and imitation • To learn the method of experimentation • Improving the student's ability to observation
Learning Outcomes 3	**Learning Outcome Statement 3:** Possessing scientific knowledge to keep pace with modern developments in biological sciences.
Ethics	
Learning Outcomes 4	Understand the ethical considerations, including the responsible handling of patient samples, confidentiality, and the ethical use of diagnostic techniques.
Learning Outcomes 5	• Enhancing the student's level of understanding through modern methods of learning

	• Providing him with accurate information • Making the student bear part of enhancing the scientific aspect

9. Teaching and Learning Strategies

Through weekly and quarterly examinations, in addition to scientific reports.

10. Evaluation methods

- Evaluation methods are implemented at various stages of the program, including:
- Continuous Assessment: Regular quizzes, assignments, and participation.
- Laboratory Reports: Evaluation of practical work and experimental results.
- Examinations: Mid-term and final exams to assess comprehensive understanding.
- Projects and Presentations: Assessing the ability to apply knowledge and communicate findings.
- Peer and Self-Assessment: Encouraging reflective learning and peer feedback.
- Mid exam
- Final exam

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor Dr.	Biology	Biotechnology			✓	

Professional Development

Mentoring new faculty members

• Orientation programs to familiarize them with departmental policies and teaching methodologies.
• Regular meetings with experienced faculty mentors to discuss teaching strategies and research integration.

Professional development of faculty members

The academic and professional development plan includes:

- Workshops on innovative teaching and learning strategies.
- Seminars on the latest research advancements in Immunology.
- Opportunities for faculty to attend conferences and participate in collaborative research projects.
- Regular assessments and feedback sessions to enhance teaching effectiveness.

12. Acceptance Criterion

The program follows the central admission regulations set by the university, which include academic qualifications, entrance exams, and interviews.

13. The most important sources of information about the program

1- **Food Microbiology , Fundamentals challenger and health Implications, Elaine Perkins Editor, 2016**
2- **Food Microbiology and laboratory practice , chris Bell , Paul Neaves & Anthony P. Williams , 2012**
3- **Microorganism in food 7, Second editor, 2017**

14. Program Development Plan

The development plan for the food microbiology program involves continuous curriculum review and updates based on the following key elements:

•Feedback from students, faculty, and Industry Partners: Regularly collect and incorporate feedback from students, faculty, and industry partners to ensure the curriculum remains relevant and meets the needs of all stakeholders.

•Emerging Trends and Technological Advancements: Stay abreast of the latest trends and technological advancements in food microbiology to integrate new knowledge and techniques into the curriculum.

•Accreditation Requirements and Standards: Adhere to accreditation requirements and standards set by relevant accrediting bodies to ensure the program maintains high educational and professional standards.

•Periodic Assessments: Conduct regular assessments and evaluations of the program to ensure it meets its educational and professional objectives, making adjustments as necessary to improve outcomes and maintain excellence.

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
Fourth		Food Microbiology	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: **Food Microbiology**
2. Course Code:
3. Semester / Year:First Semester
4. Description Preparation Date: 1-9-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total):
4/3
7. Course administrator's name (mention all, if more than one name)
Name: Asst Prof. Dr. Hana Kadum Shanan Email: hanakadum@mu.edu.iq
8. Course Objectives

Course Objective	**Food Microbiology is a comprehensive course designed for students interested in microbiology and food science. This the course provides an introductory knowledge of food composition and food processing methods essential in the control of microbial growth and food contamination. Students will also learn the different microorganisms important in food microbiology; will acquire general information about food contamination, protection, and spoilage of different kinds of foods; and will learn about the importance of food safety.**

9. Teaching and Learning Strategies

Strateg	• **Active Participation and Interaction: Engage students in discussions and interactive lectures deepen understanding.** • **Hands-on Laboratory Sessions: Facilitate practical experiments to apply theoretical knowledge.** • **Case Studies and Practical Workshops: Provide real-world scenarios to enhance problem-solv skills.** • **Communication Skills Training: Develop written and oral communication skills for scien contexts.** • **Integration of General and Transferable Skills: Incorporate critical thinking, problem-solving, research skills** • **into the curriculum.** • **Ethical Considerations: Discuss ethical issues related to food microbiology research .**

	• **Staying Updated with Research: Encourage students to read scientific journals and participate research activities.** • **Collaboration and Teamwork: Promote group projects and teamwork to simulate scien collaboration.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	**Introduction of An outline history of microbiology and microbiology in Food**	**Introduction to practical study in food microbiology (Food Microbiology Division)**	Lecture and Discussion	Quiz
2	2	**Sources of food contamination (natural sources of food contamination, contamination of food during trading and manufacturing)**	**The agriculture media (division, types, methods of preparation, farm characteristics of microorganisms.**	Laboratory Session	Report
3	2	**Food preservation methods - Temperature and drying**	**Bacteria growth (Food Needs) Methods used in the growth of microorganisms in the media,**	Practical Workshop	Report
4	2	**Food preservation methods - radiation, freezing, and preservatives**	**Preparation of samples for microbiological examination**	Lecture and Discussion	Mid-term Exam
5	2	**Microbiology in milk**	**Staining of bacteria**	Laboratory Session	Report
6	2	**Microbiology in meat, poultry, and fish**	**Study of some physical factors affecting the growth of microorganisms in food (pH, radiation, heat, pressure)**	Lecture and Discussion	Quiz
7	2	**Microbiology in cereals and their products**	**Study of the most important microbiological organisms causing staphylococcal food poisoning**	Practical Workshop	Assignment
8	2	**Microbiology in fruits and vegetables**	**Isolation of microorganisms from milk**	Laboratory Session	Report
9	2	**Microbiology in canned foods**	**Isolation of microorganisms from meat**	Lecture and Discussion	Quiz
10	2	**Pollution and poisoning food - bacterial toxins**	**Isolation of microorganisms from fruits**	Lecture and Case Study	Assignment
11	2	**Food poisoning Salmonella , Staphylococcus and Clostridium**	**Food poisoning**	Practical Workshop	Mid-term Exam

12	2	**Food fungal toxins**	**Check canned food**	Lecture and Discussion	Quiz
13	2	**Microbial corruption in food**	**Isolation of microorganisms from carbohydrates**	Laboratory Session	Report
14	2	**Standard specification for microbial limits in food**	**Microbial hazards**	Lecture and Discussion	Quiz
15		**Exam**	**Exam**		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1- Food Microbiology , Fundamentals challenger and health Implications, Elaine Perkins Editor, 2016 2- Food Microbiology and laboratory practice , chris Bell , Paul Neaves & Anthony P. Williams , 2012 3- Microorganism in food 7, Second editor, 2017
Recommended books and references (scientific journals, reports...)	• Scientific journals on food microbiology • Healthcare scientist
Electronic References, Websites	• NSF International's food science and food microbiology training programs provide the practical and technical information you need to develop, manufacture and launch innovative, superior, safer and high-quality products for your consumers. • https://www.nsf.org/training/series/food-science-food-microbiology

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.

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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 Name: **Al Muthanna**
Faculty/Institute: **Science of college**
Scientific Department: **Biology**
Academic or Professional Program Name: **Bsc Biology**
Final Certificate Name: **Bsc Biology**
Academic System: **course**
Description Preparation Date: **1/3/2024**
File Completion Date: **1/3/2024**

Signature:	**Signature**:
Head of Department Name:	**Scientific Associate Name**:
Assist prof. Dr Hanaa Ali Aziz	**Lecture Dr. Salah Abdulkhuther**
Date:	**Date**:

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approval of the Dean

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

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

3. **Program Objectives**
1-Providing students with experience in applied life sciences. 2- Providing state institutions with specialized cadres. 3- Preparing cadres with high experience in life sciences and experience in knowing high-tech devices. 4- Providing students with scientific techniques in using devices and equipment that can be used in their theoretical and applied studies. 5--Research and study everything new in biological sciences and keep pace with scientific developments in this field.

4. **Program Accreditation**
Does the program have program accreditation? And from which agency? NO

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				
College Requirements				
Department Requirements				
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**	
Third		**ecology**	**theoretical**	**practical**
			2	**2**

8. **Expected learning outcomes of the program**	
Knowledge	
Cognitive goals 1- Providing the student with sufficient information to gain experience in dealing with life sciences and laboratory techniques. 2- Gain experience in knowing all laboratory equipment and modern	

technologies. 3- Providing him with sufficient information to keep up with and study modern sciences.	
Skills	
Skills objectives of the programme 1- He has experience in knowing and operating equipment for laboratory tests. 2- Possessing scientific knowledge to keep pace with modern developments in biological sciences.	
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Practical theoretical lectures, scientific seminars, application in laboratories, in addition to the training courses held by the department.

10. Evaluation methods

Through weekly and quarterly examinations, in addition to scientific reports.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof	Biology	Ecology& pollution			✓	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Personal development is planned through access to modern scientific sources, in addition to participating in training courses inside and outside the country in the field of scientific specialization.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan

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
Third		ecology	Basic	+	+	+	+	+	+	+	+	+	+		

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

Course Description Form

1. Course Name: Ecology
2. Course Code:
3. Semester / Year: Semester
4. Description Preparation Date:1/3/2024
5. Available Attendance Forms: 1/3/2024
6. Number of Credit Hours (4) / Number of Units (3)
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Ali Abduihamza Email: **alialfanharawi@mu.edu.iq**
8. Course Objectives

Course Objectives	1. The student learns: Basic facts, 2. concept of Environment, 3. its main branches, 4. its importance, 5. environmental zones, 6. ecosystem and components, 7. relationship between biota, 8. sample collection and analysis.

9. Teaching and Learning Strategies

Strategy	Type something like: The main strategy that will be adopted in delivering t module is to encourage students' participation in the exercises, while at same time refining and expanding their critical thinking skills. This will achieved through classes, interactive tutorials and by considering type of sim experiments involving some sampling activities that are interesting to students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4hours	Introduction, Definition of ecol and its relation other science.	Introduction to ecology lab., types of environment and ecosystems. Ecology lab. safe	Smart screen	**Daily and monthly exams**
2	4hours	Branches of ecol Aquatic ecology classification, Terrestrial ecol and classification	Laboratory equipment, Air temperature, pressure and measurement	Smart screen	**Daily and monthly exams**
3	4hours	Ecosystem components	Air humidity, rain measurem	Smart screen	**Daily and monthly exams**
4	4hours	Limited factors tolerance laws	Wind, light intensity	Smart screen	**Daily and monthly exams**
5	4hours	A biotic factors limited factors	Devices and tools used in sampling.	Smart screen	**Daily and monthly exams**
6	4hours	Food chains and f nets	Water flow and measurement	Smart screen	**Daily monthly exams**
7	4hours	Productivity measurement methods, Environmental pyramids	Soil types, soil moisture measurement	Smart screen	**Daily monthly exams**
8	4hours	Gasous sedimentary cycles	Analysis of soil textures by tv methods	Smart screen	**Daily monthly exams**
9	4hours	Population, distribution, structu	Productivity and plant area surface measurement	Smart screen	**Daily monthly exams**
10	4hours	Communities, classification analysis	Study of ecosystem	Smart screen	**Daily monthly exams**
11	4hours	Ecosystem divers Freshwater ecosystems	Types of food chain in the environment	Smart screen	**Daily monthly exams**

12	4hours	Ecosystem divers Terrestrial ecosyste	Population size measurement	Smart screen	**Daily and monthly exams**
13	4hours	Environmental succession, water land success Ecosystem development.	Visit to the meteorological stat	Smart screen	**Daily and monthly exams**
14	4hours	Local Environm case study		Smart screen	**Daily and monthly exams**
15	4hours	Open Lecture		Smart screen	**Daily and monthly 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)	
Main references (sources)	Ecology and pollution. Hussein Al-Saadi, 2002
Recommended books and references (scientific journals, reports…)	Ecology, Hattog& Ubaidah, 2009 Basic concepts of ecology and pollution. Ihsan al-Gohary, 2019 Essentials of Ecology. Miller and Spoolman, 2009
Electronic References, Websites	

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Academic Program Description Form

University Name: **Al Muthanna**
Faculty/Institute: **College of Science**
Scientific Department: **Biology**
Academic or Professional Program Name: **Bsc**
Final Certificate Name: **Bsc of Biology**
Academic System: Semester \ Bologna system
Description Preparation Date: **11/9/2024**
File Completion Date: **11/9/2024**

Signature:
Head of Department Name:
Assist. Prof. Dr. Hanaa.A. Aziz
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:
Signature:

Approval of the Dean

1. Program Vision

Working according to a solid program that achieves leadership and excellence in the academic and research field, taking into account national and international quality and academic accreditation standards.

2. Program Mission

 The Department of Life Sciences is committed to providing specialized programs that meet national needs, including qualifying students with the skills and knowledge necessary for the requirements and needs of society.

 Commitment to national and international quality standards in preparing competent graduates capable of academic and research work and meeting the requirements of the labor market.

 The department seeks to improve and develop program quality standards to keep pace with the continuous changes in the needs of society through periodic review of the department's plan, objectives and mission.

3. Program Objectives

 Providing the labor market with graduates with a high level of scientific and practical competence.

 Developing scientific and academic research capabilities and encouraging innovation for instructors and students.

 Transferring the cognitive skills of instructors, researchers and graduates to the community.

. Achieving advanced ranks in academic classification locally, regionally and globally

 Communicating with leading local and international academic and research bodies to achieve the maximum possible benefit through the formation of joint research teams and benefiting from accumulated experiences and research capabilities to advance.

4. Program Accreditation

Does the program have program accreditation? And from which agency? **NO**

5. Other external influences

Is there a sponsor for the program? **NO**

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
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
Fourth		**Pathogenic Bacteria**	2	2

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Completed
Skills	
Learning Outcomes 2	Completed
Learning Outcomes 3	Completed
Ethics	
Learning Outcomes 4	Completed
Learning Outcomes 5	Completed

9. Teaching and Learning Strategies

- Theoretical lectures according to the approved curriculum.
- Short tests and brainstorming after the lecture.
- Conducting scientific discussions inside the classroom.
- Submitting scientific reports in the subject area during the semester.
- Stimulating knowledge exchange among students.

10. Evaluation methods

- This is done by testing students theoretically, practically and orally (seminars, class and extracurricular activities, scientific reports).
- Motivating the student by encouraging the free generation of ideas, accepting them and training him in the skill of brainstorming.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist.Prof	Biology	Microbiology			✓	

Professional Development

Mentoring new faculty members

- Familiarizing the new faculty member with the university, its development vision, its plan towards globalization, and its development programs.
- Helping the new faculty member adapt practically and psychologically and reducing the anxiety that may hinder his participation and integration in university work and activities.
- Providing the new faculty member with the opportunity to build a network of relationships and communicate with his peers from other departments and colleges.
- Familiarizing the new faculty member with his administrative and legal rights and duties.

 Developing the skills of the faculty member in teaching, learning, and managing the educational process.

Professional development of faculty members

Technical development and its impact on the educational process in terms of employing information and communication technology and learning and teaching techniques.

 Institutional development that includes development planned and supervised by a specialized unit in the university, which can employ continuous training courses, workshops, discussion groups, hosting visiting professors, exchanging visits and research participation.

 Holding continuing education courses on teaching methods and the developments that have occurred in them and keeping pace with them.

 Self-development to acquire psychological and cognitive skills.

 Continuous improvement and development of faculty members through training programs and workshops inside and outside the department, university and country.

 Encouraging faculty members to obtain the highest academic and administrative ranks through promotions.

12. Acceptance Criterion

The Department of Life Sciences is subject to the mechanism of the Ministry of Higher Education and Scientific Research/Central Admissions Department, where graduates of preparatory studies in the scientific branch are nominated for admission to the department based on their graduation rates.

13. The most important sources of information about the program

 The curriculum approved by the Ministry of Higher Education and Scientific Research and its guidelines.

 Decisions and recommendations of the scientific committees in the department and the university.

 Courses in developmental teaching methods.

 Self-evaluation report SSR for previous years.

 Description of the courses.

 Conferences, seminars, workshops and discussion groups.

 State institutions related to the department's specializations.

- Alumni Unit.
- Research in global databases for similar experiences.
- Personal experiences.

14. Program Development Plan

Updating study plans and scientific curricula by keeping pace with global developments and using modern sources to keep pace with the labor market, in addition to updating, developing and diversifying learning and teaching methods.

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
Fourth		Pathogenic Bacteria	essential	+	+	+	+	+	+	+	+	+	+	+	+

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

Course Description Form

1. Course Name:
Pathogenic Bacteria
2. Course Code:
3. Semester / Year:
Semester 1/ Fourth
4. Description Preparation Date:
11/9/2024
5. Available Attendance Forms:
weekly
6. Number of Credit Hours (Total) / Number of Units (Total)
(30) theoretical hours / (30) practical hours / (3) units
7. Course administrator's name (mention all, if more than one name)
Name: Maitham Abas Makei Email: mabbas@mu.edu.iq
8. Course Objectives

Course Objectives	A. Introduction to Pathological Bacteriology B. Study of the internal structure of pathogenic bacteria C. Identify and study the basics of classification of pathogenic bacteria D. Identify and study pathogenic bacteria E. Study of the most important diseases caused by pathogenic bacteria

9. Teaching and Learning Strategies	
Strategy	1. Lecture method, use of interactive board, presentation and use of explanatory films - explanation and clarification 2. Asking the student a set of questions about pathogenic bacteria during lectures such as what, how, when and why for specific topics 3. Assigning the student homework that requires studying a specific type of bacteria in all its details.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2		**Some Medically Important Bacteria: Staphylococcus: Cluster-Forming Gram +ve cocci, *Staphylococcus aureus*: Morphology a**	Live lecture, mutual scientific discuss smart screen.	Homework Daily Exams Monthly Exams Discussion Groups

			culture characters, *S. aureus* infection Biochemical characters, Diagnosis.		
2	2		**Streptococcus and Enterococcus: Classification of Streptococci, *Streptococcus Pyogenes:* Enzymes & toxins, Pathogenicity, Lab Diagnosis, *Streptococcus agalactiae***		
3	2		**Non- beta haemolytic Streptococci: *Streptococcus pneumoniae* Viridans *Streptococci***		
4	2		**Genus: Enterococcus (Fecal Streptococcus):- *Enterococcus Faecalis, Enterococ faecuim***		
5	2		**The Gram positive spore- forming rod: *Bacillus anthracis*: General characters, Pathogenicity *Bacillus subtilis, Bacillus cereus***		
6	2		**The Gram positive spore- forming rod: *Clostridium tetanus*: General characters, Pathogenicity**		
7	2		**Neisseria, Moraxella: (Gram –ve cocci): *Neisseria meningitides*: Pathogenicity, Lab diagnosis, *Neisseria gonorrhoeae*: Pathogenesis, Lab. Diagnosis. Moraxella: *Moraxella catarrhalis***		
8	2		**Gram-Negative Rods (Enterobacteriaceae): *Escherichia coli, E.coli* in human infections.**		
9	2		**Klebsiella: The virulence factors of Klebsiella. *Klebsiella Pneumoniae* (*K. aerogenes*): Lab diagnosis**		
10	2		***Salmonella*: Morphology, Pathogenesi Diagnosis,**		
11	2		**Shigella: Morphology& Characteristi Pathogenicity, Diagnosis. Genus: Proteus: Identification, Pathogenicity**		
12	2		**Pseudomonas: Characteristics, Pathogenicity, Diagnosis. Genus:Vibrio:*Vibriocholera*, Pathogenesis, Lab Diagnosis,**		
13	2		**Genus:Vibrio:*Vibriocholera*, Pathogenesis, Lab Diagnosis,**		
14	2		**Genus:Brucella:Pathogenesis, Diagnosis,**		
15	2		**Genus:Compylobacter:Pathogenesis, Lab Diagnosis,**		

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)	
Main references (sources)	Mahon, C. R., & Lehman, D. C. (2022). Textbook of Diagnostic Microbiology-E-Book: Textbook of Diagnostic Microbiology-EBook. Elsevier Health Sciences.

	Todar, K. (2004). Todar's online textbook of bacteriology.
Recommended books and references (scientific journals, reports…)	Schwartz, I., & Wormser, G. P. (2002). Bacterial pathogenesis: A molecular approach.
Electronic References, Websites	

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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 Name: .....

Faculty/Institute: .....

Scientific Department: ……

Academic or Professional Program Name: ……

Final Certificate Name: ……

Academic System: ……

Description Preparation Date:

File Completion Date:

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:

Signature:

Approval of the Dean

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

2. Program Mission

Program mission is written here as stated in the university's catalogue 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				
College Requirements				
Department Requirements				
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

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan

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

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

Course Description Form

1. Course Name:
Molecular biology
2. Course Code:
3. Semester / Year:
1/4
4. Description Preparation Date:
21.09.2024
5. Available Attendance Forms:
21.09.2024
6. Number of Credit Hours (Total) / Number of Units (Total)
2
7. Course administrator's name (mention all, if more than one name)
Name: Professor Dr. Laith AbdulHassan M.Jawad Email: atabdlih@mu.edu.iq
8. Course Objectives

Course Objectives	**1. Knowledge of the theoretical and basic concepts principles of molecular biology and sciences relate biotechnology. 2. Explain the relationship interactions between molecular biology, biotechnol and the environment. 3. Employ the theoret foundations of molecular biology and biotechnol and their applications in industry and the environm 4. Build an academic scientific base for gradu students in the fields of molecular biology biotechnology and their applications in econo development • Apply the theories and concepts molecular biology to explain the basic processes of from the cell to the organism. • Develop knowledge experience in working with contemporary laborat techniques related to various specializations molecular biology and biotechnology. • Acquire**

	practical skills necessary to work in laboratories research centers, companies, factories and rela bodies in the fields of work during the years of study

9. Teaching and Learning Strategies

Strategy	1. Lecture. 2. Discussion groups. 3. Brainstorming. 4. Mind maps. Problem solving. 6. Discovery learning. 7. Collaborative learning. Discussion strategy. 9. Project-based learning. 10. E-learning.

10. 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

Monthly exam 15 marks
Daily exam and attendance with discussion 5 marks

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Molecular biology/ weaver 5ed 2011
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

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.

Academic Program Description Form

University Name: .....

Faculty/Institute: .....

Scientific Department: ……

Academic or Professional Program Name: ……

Final Certificate Name: ……

Academic System: ……

Description Preparation Date:

File Completion Date:

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:

Signature:

Approval of the Dean

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

2. Program Mission

Program mission is written here as stated in the university's catalogue 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				
College Requirements				
Department Requirements				
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
Third		Mycology	2	2

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Learning Outcomes Statement 1
Skills	
Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Ass . prof.	Biology	Medical microbiology			✓	

Professional Development
Mentoring new faculty members
Briefly describes the process used to mentor new, visiting, full-time, and part-time faculty at the institution and department level.
Professional development of faculty members
Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. **Acceptance Criterion**
(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. **The most important sources of information about the program**
State briefly the sources of information about the program.

14. Program Development Plan

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
Third		Mycology	Basic	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: ycology
2. Course Code:
3. Semester / Year: semester
4. Description Preparation Date: 1-9-2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total) 4+4
7. Course administrator's name (mention all, if more than one name)
Name: Ass. Prof. Dhay Ali Azeez Email: dhayali_1985@mu.edu.iq
8. Course Objectives

Course Objectives	**1. Coverage of the main human fungal infections and how to identify their causative agents.** **2. Describe the basic structure and classification fungi.** **3. Demonstrate knowledge and understanding of t pathogenesis, manifestations, diagnosis and management of different types of fungi;** **4. Develop and encourage the field of scientific research.** **5. Provide all students with a broad education in t first year and provide them with and higher knowledge and understanding of the chosen subje in the second year.** **6. Discover knowledge and understanding of the main aspects of microbiology.** **7. In the third year a training programme on**

	practical exercises is organized. **8. Students of the fourth year students research skills.** **9. Apply relevant identification techniques and ski in any laboratory settings using molds or yeasts 1 Morphology and classification of fungi 11. Fungi - superficial, cutaneous, subcutaneous, and system 12. Focus on elements, elements, chemical elements.**

9. Teaching and Learning Strategies

Strategy	1-Lectures and tutorials provide basic information about eac type of fungal infection/disease and introduce fungal identification methods. Practical classes enable students to develop fungal identification skills and learn how to use thei knowledge of diseases and fungi to help interpret laboratory tests. Practical procedures are essential to developing the skills needed to conduct the practical test. 2- Student interaction during the lecture. 3- Student listens attentively to the explanation. 4- Student interacts and participates in extracurricular activities. 5- Student learns professional behavior. 6- General and transferable skills (other skills relevant to employment and personal development) 7. Enable the student to pass personal interviews and succee in the labor market 7- Enable the student to develop himself after graduation 8- Assessment includes a midterm and final exam in addition to assignments and tests in addition to homework and repor 9. The practical assessment tests practical skills and understanding of identification keys and methods, which wh combined lead to an identification result. However, it also requires knowledge and understanding of the clinical aspect of fungal infections that may be characteristic of a particular fungus or disease type. Many of the exam questions include clinical information. 10. The course essay tests the understanding of a single type fungus in terms of what the fungus is, how it is recognised, it epidemiology, what diseases it causes, what its pathological features are, and how the infection is managed and treated. I

	represents lectures that would otherwise cover a range of fungi of medical importance, but provides an opportunity for the individual to demonstrate their in-depth knowledge and understanding of just one type. It also enables the student to demonstrate their ability to research a topic and prepare a concise report in the style of a review article from a clinical microbiology journal. 11. This course provides theoretical knowledge of fung infections and practical skills for identifying fungi in t laboratory, so the assessment tests both aspects.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
	4 eve we	introduction Mycology History of Fungi Nutrition in Fungi Importance Fungi Reproductio Asexual reproductio Sexual reproductio Mycotoxins Systemic fu infections Systemic fungal infections Deep systemic funga diseases Aspergillosis Skin fungal diseases		Using display devices (smart screen)	Daily a monthl exams

		Skin fungal diseases			

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)	
Main references (sources)	**Course text book: Identification of Pathog Fungi by CK Campbell *et al.***
Recommended books and references (scientific journals, reports…)	**Mycology textbooks available in the LSHTM library.** **Journals: Medical Mycology, Journal of Clinical Microbiology, Clinical Microbiology Reviews, etc.** **Deacon, J. W. (2000) *Modern Mycology*. Blackwell, Oxford.** **Carlile, M. J., Watkinson, S. C. and Gooday, G. W. (2001) *The Fungi* (2nd edn). Academic, London**
Electronic References, Websites	The Mycology online website is excellent and is curated expert mycologists :_ https://mycology.adelaide.edu.au/