Academic Program Description Form

University Name: Al-Muthanna

Faculty/Institute: .Science of collage

Scientific Department: Biology

Academic or Professional Program Name: .BSc

Final Certificate Name: .BSc in Biology

Academic System: .....

Description Preparation Date: 26\5\2024

File Completion Date:26\5\2024

Signature:

Head of Department Name:

Dr. Hanaa Ali Aziz

Date:26/5/2024

جامعة المثنى
كلية العلوم
مكتب معاون العميد
للشؤون العلمية والدراسات العليا

Signature:

Scientific Associate Name:

أ.م. ميثم عباس مكي

Date: 26/5/2024

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

جامعة المثنى / كلية العلوم
مكتب العميد

Approval of the Dean

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

Academic Program and Course Description Guide

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are

followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

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 Completion Date: **26\5\2024**

Signature:	**Signature**:
Head of Department Name:	**Scientific Associate Name**:
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**
.

2. **Program Mission**

3. **Program Objectives**

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	
second		**Research method**	**theoretical**	

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Understanding and knowing how to write scientific research and what are the characteristics of a researcher
Skills	
Learning Outcomes 2	**Learning Outcome Statement 2:** Learn how to choose a research title and how to write a research summary and introduction
Learning Outcomes 3	**Learning Outcome Statement 3:** How to write a research proposal and results and how to discuss these results
Ethics	
Learning Outcomes 4	How to write sources and learn how to quote from other research.
Learning Outcomes 5	

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.
- **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.
- **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.
- 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	Ecology of Algae				

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

•

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		Research method	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: research method
2. Course Code:
3. Semester / Year: second /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. Ibtehal Aqeel Abdulmuneem Email: ibtihalaqq@mu.edu.iq
8. Course Objectives

Course Objectives	• **Definition of scientific research** • **Specifications of the scientific researcher** • **How to choose a research title** • **How to write a research summary, introduction and method of work** • **How to present the results and how to discuss them** • **How to write sources**

9. Teaching and Learning Strategies

Strategy	• **Active Participation and Interaction: Engage students in discussions and interactive lectures to deepen understanding.** • **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.** • **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 name	Learning method	Evaluation method

		Outcomes			
1	2	Introduction to scientific research and its steps			
2	2	Specifications of a good scientific researcher and his ethics			
3	2	The most important scientific research methods			
4	2	The descriptive method			
5	2	What is the research problem, its formulation and conditions			
6	2	Introduction to the research, its importance and objectives			
7	2	Hypotheses of scientific research			
8	2	The nature of the research plan and its importance			
9	2	Writing a research summary			
10	2	Writing the research method			
11	2	Defining the samples			
12	2	Analysis of data			
13	2	Writing the research results			
14	2	Writing a discussion of the research results			
15		Citation			

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…)	
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:

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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: **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 Microbiology 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 Microbiology, 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 and knowledge of all existing types of microorganisms.
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	
second		**Microbiology I**	**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:** Having experience in knowing modern techniques in detecting microorganisms, methods of prevention, and knowing their types
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 Microbiology.

- 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).**

14. Program Development Plan

The development plan for the 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 Microbiology 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
Second		Microbiology I	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: **Microbiology I**

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	• -Introducing the student to microbiology and explaining the relationship of this science to other sciences • Learn about the study of microorganisms, their types, and the composition of each type based on a set of scientific foundations • Teaching the student how to detect microorganisms. • Introducing the student to the use of modern methods in the treatment, prevention and vaccination against diseases caused by microorganisms

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	Microbiology,Microorganisms, History of Microbiology Early Studies, Spontaneous Generation, Cell theory Theory of Biogenesis,The Germ Theory of Disease, Koch's postulates, Modern Developments in Microbiology	Introduction and history of microbiology	Lecture and Discussion	Quiz
2	2	Phylogeny, Five-Kingdom System of Biological Classification , The Three Domain System Classification of Organisms.Scientific Nomenclature Classification of Bacteria. Scientific Nomenclature Classification of Viruses	Classification of microorganisms	Laboratory Session	Report
3	2	Morphological characteristics Chemical characteristics Metabolic characteristics Genetic characteristics Pathogenicity Ecological ...	Characteristics of microorganisms	Practical Workshop	Report
4	2	1-Prokaryotes (bacteria) 2-Eukaryotes (alge, fungi and parasites) Bacteria Archea Differences (Archaea & Bacteria)	Types of microorganisms	Lecture and Discussion	Mid-term Exam
5	2	Fungal Characteristics 1- Yeasts 2- Molds and Fleshy Fungi Comparison of Fungi and Bacteria Life cycle of fungi	Fungi	Laboratory Session	Report
6	2	Types of hosts Classification of Parasites Protozoa Nutrition	**Parasite**	Lecture and Discussion	Quiz
7	2	General properties of viruses The structure of viruses Types of symmetry of virus particles Viral classification Viral Multiplication	**viruses**	Practical Workshop	Assignment
8	2	Prokaryotic Cells / Bacteria Size, Shape ,Arrangement Gram-positive Gram-negative	Bacterial groups and their characteristics	Laboratory Session	Report
9	2	A. Structures External to the	Internal and	Lecture and	Quiz

		Cell Wall B. Cell Wall C. Structures Internal to the Cell Wall	external structure of bacteria	Discussion	
10	2	Minimum requirement for growth & multiplication of bacteria Requirements for Growth A-Physical Requirements B-Chemical Requirements	Bacterial nutrition	Lecture and Case Study	Assignment
11	2	Microbial Growth Generation time	Growth and reproduction of bacteria	Practical Workshop	Mid-term Exam
12	2	Phases of growth 1. Lag phase 2. Exponential or logarithmic (log) phase 3. Stationary phase 4. Death phase (decline phase)	Growth and reproduction of bacteria	Lecture and Discussion	Quiz
13	2	Controlling microbial growth by chemical and physical methods	Controlling microbial growth	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 Microbiology
Electronic References, Websites	• PubMed • Microbiology Society website

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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**

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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

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2. Program Mission

Our mission is to provide a comprehensive education in Microbiology, 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 and knowledge of all existing types of microorganisms.
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	
second		**Microbiology II**	**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	
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9. Teaching and Learning Strategies

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- Evaluation methods are implemented at various stages of the program, including:
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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.
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Professional development of faculty members

The academic and professional development plan includes:

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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).**

14. Program Development Plan

The development plan for the 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 Microbiology 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
Second	Bio 219	Microbiology II	optional	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: **Microbiology II**

2. Course Code: **Bio 219**

3. Semester / Year: Second 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	• -Introducing the student to microbiology and explaining the relationship of this science to other sciences • Learn about the study of microorganisms, their types, and the composition of each type based on a set of scientific foundations • Teaching the student how to detect microorganisms. • Introducing the student to the use of modern methods in the treatment, prevention and vaccination against diseases caused by microorganisms

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	Association between the microorganisms and immune system. Host immune response against microorganisms infection.	Immune system.	Lecture and Discussion	Quiz
2	2	Genetics , Gene,Genome Genomics,Genotype,Phenotype DND ,RNA	Microbial Genetics	Laboratory Session	Report
3	2	Human–Microbial Interactions: Types of bacterial pathogens Types of bacterial pathogens Steps involved in the pathogenesis of the bacteria	Pathogenic microorganisms	Practical Workshop	Report
4	2	The roles of microorganisms in food production, Foodborne Illnesses	Food Microbiology	Lecture and Discussion	Mid-term Exam
5	2	The Roles of Microbes in Industrial Fermentations	Industrial microbiology	Laboratory Session	Report
6	2	Industrial Products of Microorganisms	Industrial microbiology	Lecture and Discussion	Quiz
7	2	Microbial Ecology, Biodiversity held in balance	Environmental Microbiology	Practical Workshop	Assignment
8	2	Environmental factors affecting microbial abundance in soils, Microbes perform a number of functions	Soil Microbiology	Laboratory Session	Report
9	2	Microbial populations present in the soil	Soil Microbiology	Lecture and Discussion	Quiz
10	2	Waterborne diseases The most common pathogens transmitted through water	Aquatic Microbiology	Lecture and Case Study	Assignment
11	2	Bacterial Indicator Organisms Commen Group	Aquatic Microbiology	Practical Workshop	Mid-term Exam
12	2	Microbial Communities The origin of microorganisms in air. Air micro flora significance in human health	Air Microbiology	Lecture and Discussion	Quiz
13	2	Recombinant DNA Technology General Description of Recombinant DNA Procedures Applications of Genetic Engineering	Biotochnology	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).**
Recommended books and references (scientific journals, reports…)	Scientific journals on Microbiology
Electronic References, Websites	• PubMed • Microbiology 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 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: **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 Completion Date: **26\5\2024**

Signature:	**Signature**:
Head of Department Name:	**Scientific Associate Name**:
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**
.

2. **Program Mission**

3. **Program Objectives**

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	
second		**Plant group**	**theoretical**	**practical**

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	Understanding and knowing algae science through knowing the algal cell, its structure, and its locations.
Skills	
Learning Outcomes 2	**Learning Outcome Statement 2:** Explain the number of algal groups, which kingdom they belong to, and what are the characteristics of each group.
Learning Outcomes 3	**Learning Outcome Statement 3:** The main groups of algae are classified into their genera, species, distinctive characteristics, methods of reproduction, and environment..
Ethics	
Learning Outcomes 4	Learn how to collect, preserve and examine samples under a microscope and how to identify species.
Learning Outcomes 5	

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.
- **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	Ecology of Algae				

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

- Archegonia and Algae (2009).

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		Plant group	Basic	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: plant group
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. Ibtehal Aqeel Abdulmuneem Email: ibtihalaqq@mu.edu.iq
8. Course Objectives

Course Objectives	• **Explaining the science of algae** • **Recognizing the importance of algae to the environment** • **Explaining the vegetative forms, growth stages, life cycles and methods of reproduction** • **Identifying its position in relation to the kingdoms of living organisms**

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.** • **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.** • **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 name**	**Learning method**	**Evaluation method**

		Outcomes			
1	2	**phycology**	**phycology**		
2	2	**Blue green algae**	**Blue green algae**		
3	2	**Classification of blue green algae**	**Classification of blue green algae**		
4	2	**Green algae**	**Green algae**		
5	2	**Caryophyta**	**Caryophyta**		
6	2	**Euglenophyta**	**Euglenophyta**		
7	2	**chrysophyta**	**chrysophyta**		
8	2	**phaeyophyta**	**phaeyophyta**		
9	2	**Rhodophyta**	**Rhodophyta**		
10	2	**Ecological importanta of algae**	**Ecological importanta of algae**		
11	2	**Plant group**	**Plant group**		
12	2	**Brouphyta**	**Brouphyta**		
13	2	**Petridophyta**	**Petridophyta**		
14	2	**classification**	**classification**		
15		**Exam**	**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

Required textbooks (curricular books, if any)	
Main references (sources)	• PHYCOLOGY (2011) • Archegonia and Algae (2009)
Recommended books and references (scientific journals, reports…)	Scientific journals on algae
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:

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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.

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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 University**
Faculty/Institute: **College of Science**
Scientific Department: **of Biology**
Academic or Professional Program Name: **Bachelor's**
Final Certificate Name: **Bachelor's in Biology**
Academic System: **courses**
Description Preparation Date: **27–6–2024**
File Completion Date: **27–6–2024**

Signature:	**Signature**:
Head of Department Name:	**Scientific Associate Name**:
Assis. Prof. Dr. Hanaa Ali Aziz	**Assis. Prof. Maythem Abas Makki**
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? Yes And from which agency? Ministry of Higher Education and Scientific Research.

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	1	3		Basic
Summer Training				
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
Second	217	Insect of Taxonomy	theoretical	practical
			✓	✓

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	A- Cognitive objectives 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 science. Developing the student's ability to remember what he has learned 1- The first level: developing knowledge about the microorganisms that live in soil and water. 2- The second level is improving the level of comprehension (comprehension), developing the ability to interpret, predict, and conclude.

	3- The third level is developing applied capabilities. 4-The fourth level provides the student with the ability to analyze. 5- The fifth level is developing the student's ability to integrate ideas and information, the level of synthesis, which is the opposite of analysis. The sixth level: Evaluation: Developing the student's ability to make a judgment on the value of the material learned.
Skills	
Learning Outcomes 2	B - The skills objectives of the course. 1- To learn how to imitate and imitate 2- To learn the method of experimentation Improving the student's ability to observe
Learning Outcomes 3	• Lecture, use the blackboard, and deliver using the Data Show • Illustrations using diagrams, pictures and educational films • Interactive discussion • Self-education E-learning, scientific seminars
Ethics	
Learning Outcomes 4	• Short oral and written tests • Preparing reports • Practical tests • Home duties • Other contributions and activities Urging the student to review modern scientific sources.
Learning Outcomes 5	C- Emotional and value goals 1- Teaching the student to receive 2- Developing the student's ability to respond 3- The student should be able to evaluate and give a value 4 - Improving the student's ability to value organization.

9. Teaching and Learning Strategies

- Conducting fun scientific competitions (individual or team)
- Organizing lectures prepared by students.
- Forming volunteer work groups.
- Scientific trips.

10. Evaluation methods

• Allocate book awards and certificates of appreciation

• Allocating part of the student's evaluation to his participation in these activities

• Allocate a place in the scientific department or on the website to display pictures, products, and names of students

The distinguished ones.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant Professor		✓	Global registration		✓	

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
D – Transferable general and qualifying skills (other skills related to employability and personal development). • Application in hospitals and health centers. • Application in environmental centers • Teaching the student oral and written communication skills • Using modern technological tools, such as computers, the Internet, and special scientific programs • Preparing reports, tables, figures and presentations. • Encouraging the student to work collectively within a work team. Developing the student's abilities to make optimal use of time (time management).

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
Second	217	Insect of Taxonomy	Basic	+	+	+		+	+			+	+		

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

Course Description Form

1. Course Name: Insect of Taxonomy

2. Course Code: 217

3. Semester / Year: Second

4. Description Preparation Date: 27−6−2024

5. Available Attendance Forms: presence

6. Number of Credit Hours (8) / Number of Units (3)

7. Course administrator's name (mention all, if more than one name)

Name: Assistant Prof. Dr. Mohammed Qasim Waheeb
Email: mhmdkas@mu.edu.iq

8. Course Objectives

Course Objectives	**Introducing students to the most import phenotypic and anatomical characterist through the similarities and differences betw various types of insects and providing student with the necessary skill to study anatomical characteristics of various organism**

9. Teaching and Learning Strategies

Strategy	1-Teaching. 2- Learning,

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	8	Insect Taxonomy	Apterygota and pterygot	Data show	Dialy exam

2			Eph.and Odonata	Data show	Dialy exam
3			Othroptera	Data show	Dialy exam
4			Isoptera	Data show	Dialy exam
5			Mallophaga	Data show	Dialy exam
6			Mallophaga	Data show	Dialy exam
7			Anoplura	Data show	Dialy exam
8			Hemiptera	Data show	Dialy exam
9			Thysanopter	Data show	Dialy exam
10			Neuroptera	Data show	Dialy exam
11			Neuroptera	Data show	Dialy exam
12			Coleoptera	Data show	Dialy exam
13			Diptera	Data show	Dialy exam
14			Hemiptera	Data show	Dialy exam
15			Medically beneficial a harmful insects	Data show	Dialy 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

Required textbooks (curricular books, if any)	Insect of Taxonomy
Main references (sources)	Fundamental in Ins (R.Mohammed Tawfiq).
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	