



Ministry of Higher Education & Scientific
Research

Madenat Alelem University

College of Science

Department of Biology



Academic Program Description

2025 - 2026



Academic Program Description Form

University Name: Madenat Alelem University
Faculty/Institute: College of Science
Scientific Department: Department of Biology
Academic or Professional Program Name: Bachelor of Biology
Final Certificate Name: Bachelor in Biology
Academic System: 1st Year to 3rd Year Bologna System 4th Semesters
Description Preparation Date: 28/2/2026
File Completion Date: 29/2/2026

Signature:

Head of Department Name:

Ass. Prof. Dr. Mahmood M. Abdul-Hussein

Date: 1/3/2026

Signature:

Scientific Associate Name:

Ass. Prof. Dr. Mahmood M. Abdul-Hussein

Date: 1/3/2026

Signature:

The file is checked by: Ass. Lect. Abrar Kareim dharey
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:

Date: 1/3/2026

Signature:

Ass. Prof. Dr. Walid Nassar Raja

Approval of the Dean



1. Program Vision

To be a distinguished department in education and scientific research in the fields of biological sciences, and to take a leading role in serving the community by preparing qualified graduates capable of contributing to the advancement of scientific knowledge and solving health and environmental problems.

2. Program Mission

The Department of Biology seeks to prepare distinguished scientific personnel who possess both theoretical knowledge and practical skills in various fields of life sciences. This enables them to actively contribute to scientific research, education, healthcare, and environmental protection. The department is also committed to providing an academic environment that fosters creativity and innovation, and to encouraging applied research that contributes to community service and sustainable development.

3. Program Objectives

1. Preparing graduates with a strong scientific foundation in zoology, botany, microbiology, and all major branches of life sciences such as genetics, physiology, and ecology.
2. Developing research skills among students and faculty members, and encouraging scientific publication in local and international journals.
3. Serving the community through scientific consultations and applied projects in health, environmental, and agricultural fields.
4. Updating curricula to keep pace with modern scientific and technological developments in life sciences.
5. Enhancing scientific collaboration with counterpart departments inside and outside Iraq through cultural agreements, as well as through seminars, conferences, and joint research programs.
6. Promoting environmental and health awareness within the community and encouraging practices that support environmental sustainability.
7. Preparing qualified graduates to work in education, laboratory analysis, environmental institutions, and scientific research centers.



4. Program Accreditation

No

5. Other external influences

Labor market, field visits to government departments and students summer training.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	5	16	11%	Essential
College Requirements	8	37	17%	Essential
Department Requirements	33	187	72%	Essential
Summer Training				
Other				

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



1. Faculty						
Faculty Members						
Name	Degree	Academic Rank	Specialization		Angel	Ex. Lecturer
			General	Specific		
1. Jabbar F. Al-Maadhidi	Ph.D.	Prof.	Biology	Microbial. Physiology	*	
2. Falah A. Attawi	Ph.D.	Prof.	Agricul.	Plant Taxonomy	*	
3. Assif H. Al-Maadhidi	Ph.D.	Prof.	Biology	Pathogenic bacteria	*	
4. Abdul_hameed. M. Hamoody	Ph.D.	Prof.	Biology	Fungi	*	
5. Mahmood M. Al-Madahdawi	Ph.D.	Prof. Ass.	Biology	Freshwater Biology	*	
6. Jawad K. Jabber	Ph.D.	Prof. Ass.	Agricul.	Soil Chemistry	*	
7. Hamzah Y. Essa	Ph.D.	Lecturer	Chemistry	Org. Chemistry		
8. Abdul -Fatah S. Khodair	Ph.D.	Lecturer	Biology	Ecology	*	
9. Sama fakhri Ali	Ph.D.	Lecturer	Biology	Genetic Engineering	*	
10. Labeeb Ahmed Kadhimi	Ph.D	Lecturer	Biology	Biotechnology		*
11. Akram Fadil Mahdi	M.Sc.	Lecturer	Biology	Animal Physiology	*	
12. Abrar Karcim dharey	M.Sc.	Lect. Ass.	Biology	Zoology	*	
13. Milad Abdullah Hafedh	M.Sc.	Lect. Ass.	Biology	Animal Physiology	*	
14. Noor Talal Ali	M.Sc.	Lect. Ass.	Chemistry	Inform. Chemistry	*	
15. Noor Jabbar Hattab	M.Sc.	Lect. Ass.	Chemistry	Physic. Chemistry	*	
16. Maarb salih abdulraziq	M.Sc.	Lect. Ass.	Biology	Algology		*
17. Jumah mohammed suhail	B.Sc.	Tech. Ass.	Chemistry	—	*	
18. Azar Majeed Shahyed	B.Sc.	Tech. Ass.	Biology	—	*	
19. Raea k. Abdalazez	B.Sc.	Tech. Ass.	Biology	—	*	
20. Noor Amir qassim	B.Sc.	Tech. Ass.	Biology	—	*	
21. Mayameen Alaa kadhimi	B.Sc.	Tech. Ass.	Biology	—	*	



2. Program Description					
Year/Level	Course Code	Course Name	Credit Hours		Credit
			Theo.	Pract.	
4 th . Year 1 st . Term	MBIO14101	Molecular Biology	2	2	3
	MBIO14102	Food Microbiology	2	2	3
	MBIO14103	Enzymology	2	2	3
	MBIO14104	Biotechnology and Genetic Engineering	2	2	3
	MBIO14105	Pathogenic bacteria	2	2	3
	MBIO14106	Medical Analysis	2	2	3
4 th . Year 1 st . Term	MBIO14207	Microbial Genetics	2	2	3
	MBIO14208	Industrial Microbiology	2	2	3
	MBIO14209	Toxicology	2	2	3
	MBIO14210	Virology	2	2	3
	MBIO14211	Antibiotics	2	2	3
	MBIO14212	Chordates	2	2	3
	MBIO14213	Graduation Research Project	2	-	2
Total Credits					38

3. Expected learning outcomes of the program	
A-Knowledge	
A1	Students recognize the historical development of life sciences across different fields.
A2	Students categorize the specific requirements for each laboratory analysis.
A3	Students identify and describe the tools and instruments required for each type of analysis.
A4	Students are able to analyze and interpret the results of laboratory examination techniques

B-Skills	
B1	Students recognize the interrelationship between life sciences and other scientific disciplines.
B2	Students are able to identify biological activities and their connections with different organisms.
B3	Students are able to evaluate results using various statistical tests.
B4	Students gain the ability to identify and interpret different types of relationships among living organisms

C-Ethics	
C1	Developing thinking skills according to the student's individual abilities.
C2	Developing a spirit of respect and appreciation for his teachers, those older than him, and those he works with.
C3	Developing a spirit of humane treatment in society
C4	How to properly handle different living organisms.



4. Teaching and Learning Strategies

1. Thinking strategy based on the student's ability.
2. High-level thinking skills strategy.
3. Critical thinking strategy in learning.
4. Brainstorming.

5. Evaluation methods

1. Exams (daily and monthly).
2. Feedback learning.
3. E-Learning.
4. Reports.

6. Professional Development

Mentoring new faculty members

- Academic orientation for new faculty members and its impact on improving university performance.
- Identifying the academic and administrative guidance needs of new faculty members in higher education institutions.
- Developing a proposal for a comprehensive orientation program for new faculty members in line with global academic quality standards.

Professional development of faculty members

- Workshops aimed at improving faculty performance in light of the requirements of digital higher education.
- Enhancing active teaching strategies for faculty members.
- Professional development programs and their role in increasing the research productivity of faculty members.

7. Acceptance Criterion

Central Admission



8. The most important sources of information about the program

- Textbooks
- E-Books
- Internet scientific Sites

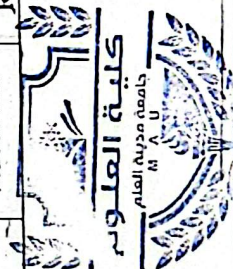
9. Program Development Plan

Review and evaluate the current curricula by forming a specialized committee of faculty members and experts, especially from the government college with which it is twinned (College of Science at Anbar University).



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

Program Skills Outline															
Year/Level	Course Code	Course Name	Basic or Optional	Required program Learning outcomes											
				Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
4th Year 1st Term	MBIO14101	Molecular Biology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14102	Food Microbiology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14103	Enzymology	Optional	✓	✓	✓	✓	✓				✓	✓	✓	✓
	MBIO14104	Biotechnology and Genetic Engineering	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14105	Pathogenic bacteria	Basic	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4th Year 1st Term	MBIO14106	Medical Analysis	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14207	Microbial Genetics	Basic	✓	✓	✓				✓	✓	✓	✓	✓	✓
	MBIO14208	Industrial Microbiology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14209	Toxicology	Optional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14210	Virology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14211	Antibiotics	Basic	✓		✓	✓		✓	✓	✓	✓	✓	✓	
	MBIO14212	Chordates	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MBIO14213	Graduation Research Project	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓





Course Description Template

1. Course Title			
genetic microbiology			
2. Course Code			
Click or tap here to enter text.			
3.			
Second Semester / Fourth Stage			
4. Date			
4/22/2026			
5. Attendance Format			
Theoretical and Practical			
6. Credit Hours /			
2	العملي	8	النظري
7. / Course Coordinator Name of the lecturer			
Dr. sama Fakhri ali			
8. Aims of subject			
☐ Knowledge Objectives: To enable students to comprehend and assimilate the fundamental principles and concepts of microbial genetics from both theoretical and applied perspectives. ☐ Skill Objectives: To enhance students' practical and analytical skills in applying genetic concepts, with emphasis on experimental design, data interpretation, and molecular techniques.			Aims of subject
9. Teaching and Learning Strategies			
☐ Lectures supported by PowerPoint and PDF materials. ☐ Educational films and guided use of specialized online resources. ☐ Laboratory sessions focusing on DNA/RNA extraction, mutagenesis, bacterial transformation, conjugation, and transduction. ☐ Continuous assessment through quizzes, monthly exams, midterm, and final examinations. ☐ Weekly reports and discussions to reinforce theoretical and practical understanding.			Strategies





10. ب Course Structure

Assessment method	Learning methods	Unit/Topic	Learning Outcomes	Hours	Weeks
Quizzes, midterm, final exams, weekly reports	Lectures (PDF/PowerPoint)	DNA extraction from <i>E. coli</i>	Chemical basis of heredity	8hr	1
		دراسة نتائج استخلاص DNA وقياسه مع دراسة المنحني القياسي له	النظام البائي للمادة الوراثية في الخلية	8hr	2
		DNA quantification and standard curve analysis	Structural organization of genetic material	8hr	3
		RNA extraction from <i>E. coli</i>	Replication of genetic material	8hr	4
		فحص نتائج الطبق المدرج	ترجمة المعلومات الوراثية وصناعة البروتين	8hr	5
		Study of spontaneous mutations using gradient plate method	Transcription and RNA types	8hr	6
		فحص نتائج الطفرات التلقائية ودراسة التردد الطبيعي لها	امتحان	8hr	7
		Analysis of gradient plate results	Translation and protein synthesis	8hr	8
		Isolation of mutants and bacterial counts	Genetic mutations, mutagens, and repair	8hr	9
		Evaluation of spontaneous mutation frequency	Examination	8hr	10
		Study of induced mutations	Plasmids and bacterial conjugation	8hr	11
		Laboratory experiment on bacterial transformation and F-factor transfer	Genetic transformation	8hr	12
		Laboratory experiment on bacterial conjugation	Conjugation – genetic transfer	8hr	13
		Demonstration of genetic transduction using bacteriophages	ransduction – genetic transfer	8hr	14
		exam	exam	8hr	15

Signature

م. د. سما خفري علي
مدرسة المقر



أ. م. د. محمد سلطان عبد الحفيظ
رئيس القسم



☐ Course Assessment Attendance and participation: 5% ☐ Daily quizzes: 5% ☐ Class performance: 5% ☐ Midterm examination: 25% ☐ Final examination: 60% ☐ Total: 100%	
11. مصادر التعلم والتدريس	
Gillies R.R. & Dodds, 1984: Bacteriology illustrated, 5 th edition. Long man group limited. USA. (Text book).	
Jeremy W. Dale and Simon F. Park (2010) Molecular Genetics of Bacteria 5th edition, 2010 by John Wiley & Sons, Ltd University of Surrey, UK. ISBN: 978-0-470-74184-	References
Web sites	Books
المواقع الإلكترونية في مواضيع الأبحاث , Web sites of Microbiology	المراجع الإلكترونية، مواقع الانترنت
course will be continuously updated through content revision, adoption of modern teaching methodologies, integration of e-learning, and enhancement of assessment tools to n with contemporary scientific and professional requirements in health and medical technology.	Course Development Plan

نموذج وصف مقرر

12. اسم المقرر			
Chordata			
13. رمز المقرر			
14. الفصل / السنة			
الفصل الثاني		كورسات	
15. تاريخ إعداد هذا الوصف			
5/16/2026			
16. أشكال الحضور المتاحة			
عملي ونظري			
17. عدد الساعات الدراسية (الكلية) // عدد الوحدات (الكلية) 5			
النظري	64	العملي	61
18. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)			
م. م ابرار كريم ضاري			
19. اهداف المقرر			
A. Studying the organisms within the phylum Chordata			
B..Classifying these species into Protozoa and Vertebrates			
C. Defining the details and characteristics of these organisms			



Republic Of Iraq
Ministry of Higher Education & Scientific
Research
College of science
Department of biology



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة مدينة العلم
كلية العلوم
قسم علوم الحياة

D. The surgical stage between these stages	
20. استراتيجيات التعلم والتعليم	
Body systems and organs. Studying the general and secondary characteristics of these animal groups to understand their classification and difference	الاستراتيجية





21. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	4	Click or tap here to enter text.	Classification of Chordates, their characteristics and features, and the study of their different phyla	محاضرات نظرية باستخدام PDF والبوربوينت	الامتحانات اليومية الامتحانات الفصلية امتحانات نصف السنة الامتحانات النهائية
2	4	Click or tap here to enter text.	Classification of Vertebrates in general, their features and characteristics		
3	4	Click or tap here to enter text.	Classification of Fish, their features and characteristics		
4	4	Click or tap here to enter text.	Classification of Amphibians and Reptiles, their features and characteristics		
5	4	Click or tap here to enter text.	Classification of Birds, their features and characteristics		
6	4	Click or tap here to enter text.	Classification of Mammals, Their Characteristics, and Features		
7	4	Click or tap here to enter text.	EXAM		
8	4	Click or tap here to enter text.	Comparison of Body Structure Components and Supporting Parts		
9	4	Click or tap here to enter text.	Comparison of Body Muscles, Their Types, and Structure		
10	4	Click or tap here to enter text.	Comparison of the Kidneys, Ureters, Bladder, and Urethra of Different Animals		
11	4	Click or tap here to enter text.	Comparison of the Nasal Cavity, Pharynx, Gills, Trachea, and Lungs of Different Animals		
12	4	Click or tap here to enter text.	Comparison of Skin Components (Epidermis, Dermis, Accessory Glands, Hair, Nails, Claws, and Feathers) of Different Animals		
13	4	Click or tap here to enter text.	Comparison of the Oral Cavity, Esophagus, Stomach, Small and Large Intestines, and Rectum		
14	4	Click or tap here to enter text.	Understanding Animal Behavior		
15	4	Click or tap here to enter text.	Final Exam		
16	4	Click or tap here to enter text.	Classification of Chordates, their characteristics and features, and the study of their different phyla		
17	4	Click or tap here to enter text.	Classification of Vertebrates in general, their features and characteristics		
18	4	Click or tap here to enter text.	Classification of Fish, their features and characteristics		
19	4	Click or tap here to enter text.	Classification of Amphibians and Reptiles, their features and characteristics		
20	4	Click or tap here to enter text.	Classification of Birds, their features and characteristics		
21	4	Click or tap here to enter text.	Classification of Mammals, Their Characteristics, and Features		
22	4	Click or tap here to enter text.	Exam		





	Comparison of Body Structure Components and Supporting Parts	Click or tap here to enter text.	4	23
	Comparison of Body Muscles, Their Types, and Structure	Click or tap here to enter text.	4	24
	Comparison of the Kidneys, Ureters, Bladder, and Urethra of Different Animals	Click or tap here to enter text.	4	25
	Comparison of the Nasal Cavity, Pharynx, Gills, Trachea, and Lungs of Different Animals	Click or tap here to enter text.	4	26
	Comparison of Skin Components (Epidermis, Dermis, Accessory Glands, Hair, Nails, Claws, and Feathers) of Different Animals	Click or tap here to enter text.	4	27
	Comparison of the Oral Cavity, Esophagus, Stomach, Small and Large Intestines, and Rectum	Click or tap here to enter text.	4	28
	Understanding Animal Behavior	Click or tap here to enter text.	4	29
	Final Exam	Click or tap here to enter text.	4	30





22. تقييم المقرر	
درجة الحضور والغياب = 5 درجة الامتحانات اليومية = 5 درجة تقييم الطالب في الدرس = 5 درجة امتحان نصف الكورس = 25 درجة امتحان نهاية الكورس = 60 الدرجة النهائية = 100.	
23. مصادر التعلم والتدريس	
1. Kenneth J. R. (2022). Sherris & Ryan's Medical Microbiology, Eighth Edition. McGraw.Hill Higher Education. New York. 2. Miller, J. M., Binnicker, M. J., Campbell, S., Carroll, K. C., Chapin, K. C., Gilligan, P. H., Gonzalez, M. D., Jerris, R. C., Kehl, S. C., Patel, R., Pritt, B. S., Richter, S. S., Schwartzman, J. D., Snyder, J. W., Telford, S., Theel, E. S., Thomson, B., Weinstein, M. P., & Yao, J. D. (2018). A Guide to Utilization of the microbiology Laboratory for Diagnosis of Infectious Diseases: 2018 date by the Infectious Diseases Society of America and the American Society for Microbiology. Clinical Infectious Diseases, 67(6), e1-e94. https://doi.org/10.1093/cid/ciy381.	الكتب المقررة المطلوبة (المنهجية أن وجدت)
Required course materials: - Fundamentals of Comparative Anatomy of Chordata	المراجع الرئيسية (المصادر)
Scientific journals and websites	الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير....)
Websites on research topics	المراجع الإلكترونية، مواقع الانترنت
1. Developing the course content through deletion, addition, and replacement. 2. Using modern teaching methods that are appropriate to the learners' level from time to time. 3. Updating assessment methods and measuring student performance. 4. Encouraging e-learning. 5. Equipping students with the skills required for the health and medical technology profession and the changing demands of the modern era	خطة تطوير المقرر الدراسي

د. م. سجاد عبد الله حافظ
رئيس قسم العلوم الحياتية

د. م. محمد هادي عبد الجبار
رئيس قسم العلوم الحياتية



نموذج وصف مقرر

1. اسم المقرر			
Pathogenic Bacteria بكتريا مرضية			
2. رمز المقرر			
3. الفصل / السنة			
كورسات الفصل الاول			
4. تاريخ إعداد هذا الوصف			
5/16/2026			
5. أشكال الحضور المتاحة			
عملي ونظري			
6. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية) 5			
النظري	64	العملي	61
7. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)			
م. م ابرار كريم ضاري			
8. اهداف المقرر			
This course aims to clarify and define the key concepts of pathogenic bacteria, providing a comprehensive introduction to important terminology, methods of infection and epidemiology, methods for measuring bacterial virulence, and bacterial genetic evolution. It then delves into the important groups of pathogenic bacteria based on their scientific classification, studying the specific characteristics and pathogenicity of each bacterial genus. The course covers laboratory diagnostic methods for these genus, including microscopic examination, culture on various bacterial media, serological and phage typing, and modern microbiological diagnostic techniques to enhance accurate diagnosis. Emphasis is placed on the epidemiology of each bacterial genus, infection prevention methods, and developing students' ability to accurately diagnose pathogenic bacteria. Students will work in research groups to learn about sterilization methods, media preparation, and microbiological culture. They will then accurately diagnose clinically important genus species through biochemical tests and culture characteristics, developing their ability to accurately identify bacteria isolated from various pathogenic samples.		اهداف المادة الدراسية	
9. استراتيجيات التعليم والتعلم			
The focus is on pathogenically important bacterial groups in bacteriology, how to accurately diagnose pathogenic species, their epidemiology, and methods of prevention.		الاستراتيجية	





10. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	4	Click or tap here to enter text.	مقدمة شاملة لعلم البكتريا المرضية		
2	4	Click or tap here to enter text.	واجناسها Staphylococcus		
3	4	Click or tap here to enter text.	واجناسها Streptococcus		
4	4	Click or tap here to enter text.	Enterobacteriaceae E. coli, Proteus, Klebsiel		
5	4	Click or tap here to enter text.	Enterobacteriaceae Salmonella, Shigella, Yersinia		
6	4	Click or tap here to enter text.	Enterobacteriaceae Salmonella, Shigella, Yersinia		
7	4	Click or tap here to enter text.	واجناسها Neisseria		
8	4	Click or tap here to enter text.	Aerobic spore forming bacteris Bacillus, Clostridium		
9	4	Click or tap here to enter text.	EXAM		
10	4	Click or tap here to enter text.	واجناسها Pseudomonas		
11	4	Click or tap here to enter text.	Spirochaetes		
12	4	Click or tap here to enter text.	Bacteroides		
13	4	Click or tap here to enter text.	Corynebacteria		
14	4	Click or tap here to enter text.	Mycobacteria		
15	4	Click or tap here to enter text.	Final Exam		
16	4	Click or tap here to enter text.	مقدمة شاملة لعلم البكتريا المرضية		
17	4	Click or tap here to enter text.	واجناسها Staphylococcus		
18	4	Click or tap here to enter text.	واجناسها Streptococcus		
19	4	Click or tap here to enter text.	Enterobacteriaceae		
20	4	Click or tap here to enter text.	E. coli, Proteus, Klebsiel Enterobacteriaceae		
21	4	Click or tap here to enter text.	Salmonella, Shigella, Yersinia		
22	4	Click or tap here to enter text.	Aerobic spore forming bacteris		

الامتحانات اليومية
الامتحانات الفصلية
امتحانات نصف السنة
الامتحانات النهائية

محاضرات نظرية
باستخدام PDF
والبوربوينت





	EXAM	Click or tap here to enter text.	4	23
	Pseudomonas واجناسها	Click or tap here to enter text.	4	24
	Pseudomonas واجناسها	Click or tap here to enter text.	4	25
	Spirochaetes	Click or tap here to enter text.	4	26
	Bacteroides	Click or tap here to enter text.	4	27
	Corynebacteria	Click or tap here to enter text.	4	28
	Mycobacteria	Click or tap here to enter text.	4	29
	Final Exam	Click or tap here to enter text.	4	30





11. تقييم المقرر	
درجة الحضور والغياب = 5 درجة الامتحانات اليومية = 5 درجة تقويم الطالب في الدرس = 5 درجة امتحان نصف الكورس = 25 درجة امتحان نهاية الكورس = 60 الدرجة النهائية = 100.	
12. مصادر التعلم والتدريس	
الكتب المقررة المطلوبة (المنهجية أن وجدت)	كتب المقرر المطلوبة
المراجع الرئيسية (المصادر)	1- الجبوري . محميد مدالله . - علم البكتريا الطبية . جامعة الموصل . الطبعة الأولى . -Jawetz, Melnick & Adelberg, s Medical Microbiology twenty fourth edition Geo.F.Book.s. et al - Alex3-Shrris Medical Micobiology An Introduction to Infectious Disease ed .Kenneth J. Ryan M. et al 4th edition.
الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير....)	المجلات العلمية والمواقع الالكترونية
المراجع الإلكترونية، مواقع الانترنت	المواقع الإلكترونية في مواضيع الأبحاث
1. Developing the course content through deletion, addition, and replacement. 2. Using modern teaching methods that are appropriate to the learners' level from time to time. 3. Updating assessment methods and measuring student performance. 4. Encouraging e-learning. 5.ipping students with the skills required for the health and medical technology profession and the changing demands of the modern era	خطة تطوير المقرر الدراسي

م.م. ميلاد عبد الله هاشم
رئيس قسم

أ.م.د. محمد هادي عبد الحميد
رئيس قسم



نموذج وصف مقرر

24. اسم المقرر			
Clinical analyses			
25. رمز المقرر			
26. الفصل / السنة			
first semester			
27. تاريخ إعداد هذا الوصف			
5/16/2026			
28. أشكال الحضور المتاحة			
عملي ونظري			
29. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية) 5			
النظري	64	العملي	125
30. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)			
م. م. ميلاد عبدالله حافظ			
31. أهداف المقرر			
1. Give students an understanding of how samples are collected. 2. Provide an understanding and experience of basic methods of dealing with Specimens. 3. Give students an understanding of how procedures used to investigate bacteria and other infectious agents from clinical materials. 4. Teach the student how to collect and examine pathological and serological samples.			أهداف المادة الدراسية
He also learns how to conduct analyzes for the diagnosis of infectious			
32. استراتيجيات التعليم والتعلم			
This module's contact teaching will be conducted through lecturing (15 lectures) and compulsory 15 practical sessions, which include data show presentations and learning videos. Students will be invited to participate in interactive discussion throughout this program.			الاستراتيجية





33. بنية المقرر

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	4	Click or tap here to enter text.	Diagnosis of infectious disease, Upper respiratory tract infections	محاضرات نظرية باستخدام PDF والبوربوينت	الامتحانات اليومية الامتحانات الفصلية امتحانات نصف السنة الامتحانات النهائية
2	4	Click or tap here to enter text.	Diagnosis of Gastrointestinal tract infections		
3	4	Click or tap here to enter text.	Diagnosis of Urinary tract infections		
4	4	Click or tap here to enter text.	Laboratory Diagnosis of Sexually Transmitted Infections (STDs) in women		
5	4	Click or tap here to enter text.	Laboratory Diagnosis of Sexually Transmitted Infections (STDs) in men		
6	4	Click or tap here to enter text.	Leptospirosis,		
7	4	Click or tap here to enter text.	Skin, wound and soft tissue infections		
8	4	Click or tap here to enter text.	Mid-term Exam		
9	4	Click or tap here to enter text.	Bacteremia and Meningitis		
10	4	Click or tap here to enter text.	Mycology		
11	4	Click or tap here to enter text.	Clinical Pathology		
12	4	Click or tap here to enter text.	Acute and Chronic inflammation		
13	4	Click or tap here to enter text.	Introduction to Serology		
14	4	Click or tap here to enter text.	Serological test of some infectious diseases		
15	4	Click or tap here to enter text.	Autoimmune diseases		
16	4	Click or tap here to enter text.	Preparatory week before the final Exam		
17	4	Click or tap here to enter text.	Samples collections		
18	4	Click or tap here to enter text.	General urine examination- physical examination		
19	4	Click or tap here to enter text.	General urine examination- chemical examination		
20	4	Click or tap here to enter text.	General stool examination		
21	4	Click or tap here to enter text.	Hematology		
22	4	Click or tap here to enter text.	Blood tests		
23	4	Click or tap here to enter text.	Blood culture		





		Mid-term Exam	Click or tap here to enter text.	4	24
		Agglutination tests	Click or tap here to enter text.	4	25
		Precipitation	Click or tap here to enter text.	4	26
		Seminal fluid analysis	Click or tap here to enter text.	4	27
		Clinical biochemistry	Click or tap here to enter text.	4	28
		Hormones and tumor markers	Click or tap here to enter text.	4	29
		Histopathology-Acute inflammation	Click or tap here to enter text.	4	30





34. تقييم المقرر	
درجة الحضور والغياب = 5 درجة الامتحانات اليومية = 5 درجة تقييم الطالب في الدرس = 5 درجة امتحان نصف الكورس = 25 درجة امتحان نهاية الكورس = 60. الدرجة النهائية = 100.	
35. مصادر التعلم والتدريس	
3. Kenneth J. R. (2022). Sherris & Ryan's Medical Microbiology, Eighth Edition. McGraw.Hill Higher Education. New York. 4. Miller, J. M., Binnicker, M. J., Campbell, S., Carroll, K. C., Chapin, K. C., Gilligan, P. H., Gonzalez, M. D., Jerris, R. C., Kehl, S. C., Patel, R., Pritt, B. S., Richter, S. S., Schwartzman, J. D., Snyder, J. W., Telford, S., Theel, E. S., Thomson, B., Weinstein, M. P., & Yao, J. D. (2018). A Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases: 2018 update by the Infectious Diseases Society of America and the American Society for Microbiology. Clinical Infectious Diseases, 67(6), e1-e94. https://doi.org/10.1093/cid/ciy381.	الكتب المقررة المطلوبة (المنهجية أن وجدت)
	المراجع الرئيسية (المصادر)
المجلات العلمية والمواقع الالكترونية	الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير....)
المواقع الالكترونية في مواضيع الأبحاث	المراجع الإلكترونية، مواقع الانترنت
2. التطوير على المحتوى الدراسي بالحذف والإضافة والاستبدال. 3. استعمال طرق حديثة للتدريس تتلاءم مع مستوى المتعلمين بين الحين والآخر. 4. تحديث وسائل التقويم وقياس مستوى الطلبة. 5. تشجيع التعليم الالكتروني. 6. إكساب الطالب المهارات التي تتطلبها مهنة التقني الصحي والطبي ومتغيرات العصر.	خطة تطوير المقرر الدراسي

أ.د. عامر محمد عبد الكريم
مدير قسم الأبحاث

أ.م.د. محمد علي عبد الحسین
رئيس القسم



نموذج وصف مقرر

36. Bacterial toxins اسم المقرر			
37. Bio-422 رمز المقرر			
38. الفصل / السنة			
كورسات			
الفصل الثاني			
39. تاريخ إعداد هذا الوصف			
5/16/2026			
40. أشكال الحضور المتاحة			
عملي ونظري			
41. عدد الساعات الدراسية (الكلية) / عدد الوحدات (الكلية) 5			
النظري	79	العملي	71
42. اسم مسؤول المقرر الدراسي (إذا أكثر من اسم يذكر)			
م. م ميلاد عبدالله حافظ			
43. اهداف المقرر			
1. This class discusses the fundamental aspects of bacterial toxins . 2. its importance to mankind in a brief and articulate explanation of this newly originated science. 3. Highlights the most important toxins produced by bacteria, their types, mechanism of action and effects. Recognizing the importance of toxins produced by different bacterial species and their important role in the virulence of bacterial cells.			اهداف المادة الدراسية
44. استراتيجيات التعليم والتعلم			
The main strategy that will be adopted in delivering this unit is to encourage students to participate in exercises as well as a series of lectures and practical classes designed to introduce you to bacterial toxins. At the same time refine and broaden critical thinking skills through topics covered in the lectures including what bacterial toxins are, their prevalence and quantification. An interactive educational program through looking at the types of simple experiments (practical classes) provides training in basic techniques including isolation of pathogenic bacteria, their dissemination and extraction of their different toxins. These activities are fun for the students.			الاستراتيجية





45. بنية المقرر					
الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة او الموضوع	طريقة التعلم	طريقة التقييم
1	4	Click or tap here to enter text.	Introduction of bacterial toxins	محاضرات نظرية باستخدام PDF والبوربوينت	الامتحانات اليومية الامتحانات الفصلية امتحانات نصف السنة الامتحانات النهائية
2	4	Click or tap here to enter text.	Classification of bacterial toxins		
3	4	Click or tap here to enter text.	ADP-ribosylation toxins		
4	4	Click or tap here to enter text.	Cholera toxins		
5	4	Click or tap here to enter text.	Other V. cholerae 01/0139 toxins		
6	4	Click or tap here to enter text.	E. coli heat-labile enterotoxin		
7	4	Click or tap here to enter text.	Exam		
8	4	Click or tap here to enter text.	<i>E. coli</i> heat-stable enterotoxin		
9	4	Click or tap here to enter text.	<i>Bordetella pertussis</i>		
10	4	Click or tap here to enter text.	Tetanus toxin		
11	4	Click or tap here to enter text.	Toxins that act on 28S rRNA		
12	4	Click or tap here to enter text.	Exam		
13	4	Click or tap here to enter text.	Pore-forming toxins1		
14	4	Click or tap here to enter text.	Pore-forming toxins2		
15	4	Click or tap here to enter text.	Endotoxins		
16	4	Click or tap here to enter text.	Preparatory week before the final Exam		
17	4	Click or tap here to enter text.	Lab 1: Disinfection and sterilization in laboratories		
18	4	Click or tap here to enter text.	Lab 2: General introduction to bacterial toxins		
19	4	Click or tap here to enter text.	Lab 3: Endotoxins and Exotoxins		
20	4	Click or tap here to enter text.	Lab 4: Bacterial food poisonings		
21	4	Click or tap here to enter text.	Lab 5: Virulence factors produced by bacteria as toxins1		
22	4	Click or tap here to enter text.	Lab 6: Virulence factors produced by bacteria as toxins2		
23	4	Click or tap here to enter text.	Lab 7: Enteric toxins		





		Lab 8: Estimation of toxic doses	Click or tap here to enter text.	4	24
			Click or tap here to enter text.	4	25
			Click or tap here to enter text.	4	26
			Click or tap here to enter text.	4	27
			Click or tap here to enter text.	4	28
			Click or tap here to enter text.	4	29
			Click or tap here to enter text.	4	30





46. تقييم المقرر	
درجة الحضور والغياب = 5 درجة الامتحانات اليومية = 5 درجة تقييم الطالب في الدرس = 5 درجة امتحان نصف الكورس = 25 درجة امتحان نهاية الكورس = 60. الدرجة النهائية = 100.	
47. مصادر التعلم والتدريس	
5. Kenneth J. R. (2022). Sherris & Ryan's Medical Microbiology, Eighth Edition. McGraw.Hill Higher Education. New York. 6. Miller, J. M., Binnicker, M. J., Campbell, S., Carroll, K. C., Chapin, K. C., Gilligan, P. H., Gonzalez, M. D., Jerris, R. C., Kehl, S. C., Patel, R., Pritt, B. S., Richter, S. S., Schwartzman, J. D., Snyder, J. W., Telford, S., Theel, E. S., Thomson, B., Weinstein, M. P., & Yao, J. D. (2018). A Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases: 2018 update by the Infectious Diseases Society of America and the American Society for Microbiology. Clinical Infectious Diseases, 67(6), e1-e94. https://doi.org/10.1093/cid/ciy381.	الكتب المقررة المطلوبة (المنهجية أن وجدت)
المراجع الرئيسية (المصادر)	
المجلات العلمية والمواقع الإلكترونية	الكتب والمراجع السائدة التي يوصى بها (المجلات العلمية، التقارير....)
المواقع الإلكترونية في مواضيع الأبحاث	المراجع الإلكترونية، مواقع الانترنت
7. التطوير على المحتوى الدراسي بالحذف والإضافة والاستبدال. 8. استعمال طرق حديثة للتدريس تتلاءم مع مستوى المتعلمين بين الحين والآخر. 9. تحديث وسائل التقييم وقياس مستوى الطلبة. 10. تشجيع التعليم الإلكتروني. 11. إكساب الطالب المهارات التي تتطلبها مهنة التقني الصحي والطبي ومتغيرات العصر.	خطة تطوير المقرر الدراسي

٢٠٢٣ ميلاد عبد الله مانتا
أ.م.د. ريسان

٢٠٢٣ د. محمد علي عبد الجبار
رئيس القسم