

**Ministry of Higher Education and Scientific Research
Scientific Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department
Accreditation Section**



Academic Program and Course

2025/2026

Academic Program Description Form

University Name: Basrah
Faculty/Institute: Science College
Scientific Department: Biology
Academic or Professional Program Name: BSc. of Biology
Final Certificate Name: BSc. of Biology
Academic System: Courses
Description Preparation Date: 10/9/2025
File Completion Date: 10/9/2025

Signature: 

Head of Department Name:

Prof. Dr. Inham Mahmod Najem

Date: 10/9/2025

Signature: 

Scientific Associate Name:

Date:

الأستاذ الدكتور
عادل علي عبد الحسن
معاون العميد للشؤون العلمية والدراسات العليا

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Dunya Ali Hussain

Signature:

10/9/2025

Approval of the Dean

الأستاذ الدكتور
علي عبد الامام عبد الزهرة
عميد كلية العلوم / جامعة البصرة

introduction

The educational program is a coordinated and organized package of courses that include procedures and experiences organized into study modules. The primary purpose of the program is to build and refine graduates' skills, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs, such as the .External Examiner Program

The academic program description provides a brief summary of the program's main features and courses, indicating the skills students are expected to acquire based on the program's objectives. The importance of this description is evident in that it represents the cornerstone of program accreditation and is written by faculty members under the supervision of academic committees in the academic .departments

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the new developments and changes in the educational system in Iraq, which included a description of the academic program in its traditional form (annual, semester) in addition to adopting the description of the academic program circulated pursuant to the letter of the Department of Studies TM3 /2906 dated 5/3/2023 with regard to .programs that adopt the Bologna process as the basis for their work

In this context, we cannot but emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth running of the educational .process

:Concepts and terms

Academic Program Description: This academic program description provides a concise summary of the program's key features and the learning outcomes the student is expected to achieve, demonstrating whether the student has made the most of the available opportunities. It is accompanied by a description of each course within the program

Course Description: Provides a concise summary of the course's key features and the learning outcomes expected of the student, demonstrating whether the student has made the most of the available learning opportunities. It is derived from the program description

Program Vision: An ambitious vision for the future of the academic program to be an advanced, inspiring, motivating, realistic, and applicable program

Program mission: It briefly explains the objectives and activities required to achieve them, and also identifies the program's development paths and directions

Program objectives: These are statements that describe what the academic program intends to achieve within a specific time period and are measurable and observable

Curriculum structure: All courses/subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether required by (ministry, university, college, or scientific department), along with the number of academic units

Learning outcomes: A consistent set of knowledge, skills, and values acquired by a student after successfully completing the academic program. Learning outcomes for each course must be defined in a manner that achieves the program's objectives

Teaching and learning strategies : These are the strategies used by faculty members to develop student teaching and learning. They are plans followed to achieve learning

objectives. They describe all classroom and extracurricular activities to achieve the .program's learning outcomes

1. Program vision

seeks Preparing graduates in the field of life sciences to of Science The College work in health departments and other departments and benefit from the . specialization in the practical and applied field

2. Program message

Working to prepare and graduate pioneering scientific and leadership competencies in the field of life sciences and to develop the knowledge base in the field of scientific research in the field of biology to serve the local regional and international community, in addition to training and refining the minds of students scientifically and cognitively, emphasizing social and cultural values and responding to the requirements of the health reality of . society

3. Program objectives

. Teaching the student the basic principles of life sciences -1

Preparing specialists in life sciences and their practical -2 applications, who are responsible for studying the country's need for development and progress and are able to meet the needs of the labor market in state institutions and the health, agriculture, and . pharmaceutical sectors

Preparing an educated population armed with science and -3 adopting it as a basic means of bringing about radical changes and putting scientific knowledge and the scientific method into thinking , analyzing and adapting to the development of technology in order to . keep pace with the expansion of human needs

Providing an academic environment conducive to study and research , -4 enabling the student to pursue his academic studies and contribute to . finding solutions to problems using appropriate techniques

4. Program accreditation

nothing

5. Other external influences

nothing

6. Program structure				
Program structure	Number of courses	Study unit	percentage	* comments
Institutional requirements	6	credit 13 hours	%9	Represents the courses that all students of the University of Basra participate in
College requirements	7	credit 20 hours	%14	Represents the courses that all students of the College of Science participate in
Department requirements	27	86 compulsory study units	%59	Represents the courses that all students of the Life Sciences Department participate in
	16	elective 27 credits	%18	These are the courses that all students in the Life Sciences Department participate in (they are called elective courses because the actual number of elective courses open to students exceeds the number required of the student, but the student is required to take only 27 academic units, from which he chooses (what suits his scientific interest
Summer training	There is	-	-	A student is not considered a graduate of the Life Sciences Department without passing the summer training and is given an acceptable evaluation by the supervisor who follows up on his training from the institution where the training was completed
Other				The total number of credits required to graduate from the

				Department of Life Sciences is .credits 146
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.Notes may include whether the course is core or optional *

7. Program description				
Year/Level	Course code	Course name	Credit hours	
First/2025-2026	B101	Life Sciences in General	3	3
First/2025-2026	B104	General microbiology	3	3
First/2025-2026	B105	Fundamentals of Ecology	2	3
First/2025-2026	Th101	human rights	3	0
First/2025-2026	C100	General Geologist	2	0
First/2025-2026	H127	Calculators	2	0
First/2025-2026	D101	Arabic literature	2	0
First/2025-2026	R117	Vital statistics	2	0
First/2025-2026	D101	sports	1	0
First/2025-2026	F103	physics	2	3
First/2025-2026	K112	Organic Chemistry	2	3
First/2025-2026	R101	mathematics	3	0
First/2025-2026	K131	Analytical Chemistry	3	3
Second/2025-2026	B204	Bacteria Basics	3	3
Second/2025-2026	Th201	freedom and democracy	3	0
Second/2025-2026	K240	vitality	2	3
Second/2025-2026	B210	Plant classification	3	3
Second/2025-2026	B230	Plant environment and classification	3	3
Second/2025-2026	B206	animal tissues	3	3
Second/2025-2026	B205	Plant anatomy	3	0

Second/2025-2026	B207	Microscopic preparations	0	1
Second/2025-2026	B212	insects	3	3
Second/2025-2026	B208	invertebrates	3	3
Second/2025-2026	B203	cell	3	3
Second/2025-2026	H260	Calculator applications	2	3
Third/2025-2026	D301	English literature	2	0
Third/2025-2026	B301	heredity	2	3
Third/2025-2026	B306	parasites	2	3
Third/2025-2026	B311	mushrooms	2	3
Third/2025-2026	B316	algae	2	3
Third/2025-2026	B321	Animal physiology	2	3
Third/2025-2026	B322	Microbial genetics	2	3
Third/2025-2026	B366	immunity	2	3
Third/2025-2026	B310	Embryos	2	3
Third/2025-2026	B376	pollution	2	3
Third/2025-2026	B323	Chordata	2	3
Third/2025-2026	B341	medicinal bacteria	2	3
Third/2025-2026	K343	Clinical Chemistry	2	3
Third/2025-2026	B362	Medical insects	2	3
Third/2025-2026	B356	aquatic plants	2	3
Third/2025-2026	B373	aquatic environment	2	3
Third/2025-2026	B378	medicinal plants	2	3
Third/2025-2026	B379	Molecular Biologist	2	3
Fourth/2025-2026	B412	Plant physiology	2	3
Fourth/2025-2026	B454	genetic engineering	2	3
Fourth/2025-2026	B424	Comparative anatomy	2	3
Fourth/2025-2026	B416	Research project	1	0
Fourth/2025-2026	Q400	Philosophy of science	2	0

Fourth/2025-2026	B415	development	2	0
Fourth/2025-2026	B443	Artificial microbiology	2	3
Fourth/2025-2026	B414	Viruses	2	3
Fourth/2025-2026	B465	Serology	2	3
Fourth/2025-2026	B413	Plant diseases	2	3
Fourth/2025-2026	B431	Physiology of aquatic organisms	2	3
Fourth/2025-2026	B430	environmental toxins	2	3
Fourth/2025-2026	B455	Archikons	2	3
Fourth/2025-2026	B464	biotechnology	2	3
Fourth/2025-2026	B466	plant tissue culture	2	3
Fourth/2025-2026	B468	biological resistance	2	3
Fourth/2025-2026	B470	Fish farming	3	0
Fourth/2025-2026	B473	Hematology	2	3
Fourth/2025-2026	B485	Hematology	2	3

8. Expected learning outcomes of the program	
knowledge	
Enable the student to - know and understand the . basics of life sciences Enable the student to - know and understand the practical applications of . life sciences The ability to use - modern technologies in the field of	

analysis and conducting scientific · research	
Skills	
Sound scientific - ·research	
Constructive scientific - discussions and ·expressing opinions	
The ability to apply the - theoretical and practical experience gained from his studies in practical life areas , taking into account medical · restrictions	
values	
Developing students' ability to share ideas	

9. Teaching and learning strategies
. Use the board and pen - Present lectures using -Power Point . Using practical study methods for students through practical laboratories - . available in the department and under the supervision of academic staff . Graduation projects -

10. Evaluation methods
final exam

11. Faculty						
Faculty members						
Academic rank	Specialization		Special requirements/skills (if any)		Faculty preparation	
	general	private			angel	lecturer
Mr	Life Sciences	immunity			1	
Mr	Life Sciences	biological resistance			1	
Mr	Life Sciences	Plant classification			3	
Mr	Life Sciences	biotechnology			2	
Mr	Life Sciences	tissues			3	
Mr	Agricultural Sciences, Horticulture and Palm Trees	plant tissue culture			1	
Mr	Agricultural Sciences	Functional histology			1	
Mr	Life Sciences	Molecular Genetics of Medical Microbiology			1	

Mr	Life Sciences	Viruses			1	
Mr	Life Sciences	Ornithology/Environmental Pollution			1	
Mr	Life Sciences	Microscopic biology			2	
Mr	Life Sciences	mushrooms			3	
Mr	Life Sciences	parasites			1	
assistant professor	Life Sciences	genetic engineering			1	
assistant professor	Life Sciences	Environment and pollution			1	
assistant professor	Life Sciences	Physiology			2	
assistant professor	Life Sciences	Fungi			5	
assistant professor	Life Sciences	algae			2	
assistant professor	Life Sciences	and Nanoscale Genetics			4	
assistant professor	Life Sciences	Plant physiology			1	
assistant professor	Life Sciences	Microscopic biology			2	
assistant professor	Life Sciences	immunity			1	
assistant professor	Life Sciences	parasites			1	
teacher	Life Sciences	plant tissue culture			3	

teacher	Life Science s	genetic engineeri ng			1	
teacher	Life Science s	Embryos			1	
teacher	Life Science s	Algal biotechno logy			1	
teacher	Life Science s	insects			1	
teacher	Life Science s	mushroo ms			2	
teacher	Life Science s	tissues			2	
teacher	Life Science s	parasites			1	
teacher	Life Science s	Plant physiolog y			2	
teacher	Life Science s	Molecular genetics			2	
teacher	Life Science s	Microscop ic biology			3	
teacher	Life Science s	invertebra tes			1	
teacher	Life Science s	Animal physiolog y			1	
teacher	Life Science s	Cell science			2	
teacher	Life Science s	Viruses			1	
teacher	Life Science s	Computer Science			1	
teacher	Life Science s	Biotechno logy			1	
teacher	Life Science s	Environm ent and pollution			2	

Assistant Professor	Life Sciences	Viruses			4	
Assistant Professor	Life Sciences	Molecular Biologist			1	
Assistant Professor	Life Sciences	cell			1	
Assistant Professor	Computer Science	Image processing and artificial intelligence			2	
Assistant Professor	Life Sciences	Zoology and Physiology			4	
Assistant Professor	Life Sciences	Environmental and pollution			3	
Assistant Professor	Life Sciences	biological resistance			1	
Assistant Professor	Veterinary medicine and surgery Veterinary medicine	Obstetrics and gynecology			1	
Assistant Professor	Life Sciences	mushrooms			1	
Assistant Professor	Life Sciences	Microscopic biology			4	
Assistant Professor	Life Sciences	algae			1	
Assistant Professor	Life Sciences	immunity			1	
Assistant Professor	Life Sciences	biotechnology			1	
Assistant Professor	Life Sciences	immunity			1	

Assistant Professor	Life Sciences	Bioprocessing			1	
Assistant Professor	Life Sciences	insects			1	
Assistant Professor	History/Girls' Education	Modern history			1	
Assistant Professor	Science in Agriculture	Horticulture and landscape design			1	
Assistant Professor	Life Sciences	Animal physiology			1	
Assistant Professor	Life Sciences	Life Sciences			1	

Professional development
Orientation of new faculty members
Professional development for faculty members

12. Acceptance criteria

13. The most important sources of information about the program

- 1- The curriculum approved by the Ministry of Higher Education and Scientific Research and its guidelines
- 2- Decisions and recommendations of the scientific committees in the college and the Department of Life Sciences in particular
- 3- Development and qualification courses in teaching methods
- 4- Internet research for similar experiences

Personal experiences of leading professors in the -5
college and department

14. Program Development Plan

1. Developing students' skills in writing and designing projects related to histology in the form of articles from modern sources
2. Assigning students laboratory tasks related to dissection, how to collect samples, isolate organs, and prepare tissue slides

Program Skills Map															
				Required learning outcomes of the program											
Year / Level	Course code	Course name	Essential or optional	knowledge				Skills				values			
				A1	A2	A3	A4	B1	B2	B3	B4	Part 1	Part 2	Part 3	Part 4
First/2025-2026	B101	Life Sciences in General	essential	√	√	√	√	√	√	√	√	√	√	√	
	B104	General microbiology	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	B105	Fundamentals of Ecology	essential	√	√	√	√	√	√	√	√	√	√	√	
	Th101	human rights	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	C100	General Geologist	essential	√	√	√	√	√	√	√	√	√	√	√	
	H128	Calculators	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	D101	Arabic literature	essential	√	√	√	√	√	√	√	√	√	√	√	
	R117	Vital statistics	essential	√	√	√	√	√	√	√	√	√	√	√	

First/2025-2026	D101	sports	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	F103	physics	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	K112	Organic Chemistry	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	R101	mathematics	essential	√	√	√	√	√	√	√	√	√	√	√	
First/2025-2026	K131	Analytical Chemistry	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B204	Bacteria Basics	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	Th201	freedom and democracy	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	K240	vitality	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B210	Plant classification	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B230	Plant environment and classification	essential	√	√	√	√	√	√	√	√	√	√	√	

Second/2025-2026	B206	animal tissues	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B205	Plant anatomy	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B207	Microscopic preparations	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B212	insects	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B208	invertebrates	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	B203	cell	essential	√	√	√	√	√	√	√	√	√	√	√	
Second/2025-2026	H260	Calculator applications	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	D301	English literature	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B301	heredity	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B306	parasites	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B311	mushrooms	essential	√	√	√	√	√	√	√	√	√	√	√	

Third/2025-2026	B316	algae	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B321	Animal physiology	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B366	immunity	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B310	Embryos	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B376	pollution	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B323	Chordata	essential	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B341	medicinal bacteria	optional	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	K343	Clinical Chemistry	optional	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B362	Medical insects	optional	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B356	aquatic plants	optional	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B373	aquatic environment	optional	√	√	√	√	√	√	√	√	√	√	√	

Third/2025-2026	B378	medicinal plants	optional	√	√	√	√	√	√	√	√	√	√	√	
Third/2025-2026	B379	Molecular Biologist	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B412	Plant physiology	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B454	genetic engineering	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B424	Comparative anatomy	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B416	Research project	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	Q400	Philosophy of science	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B415	development	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B414	Viruses	essential	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B465	Serology	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B413	Plant diseases	optional	√	√	√	√	√	√	√	√	√	√	√	

Fourth/2025-2026	B431	Physiology of aquatic organisms	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B430	environmental toxins	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B455	Archikons	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B464	biotechnology	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B466	plant tissue culture	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B468	biological resistance	optional	√	√	√	√	√	√	√	√	√	√	√	
Fourth/2025-2026	B470	Fish farming	optional												
Fourth/2025-2026	B473	Hematology	optional												
Fourth/2025-2026	B485	Toxicology	optional												

Please tick the boxes corresponding to the individual learning outcomes of the programme being assessed

Course Description Form B105

1. Course name: Environmental Science	
2. : Course code Bio105	
3. Semester/Year 2025/2026	
4. Date of preparation of this description : 11/9/2025	
5. Weekly : Available attendance forms	
6. theoretical study hours: 30 (a) Practical 30 Total 60 hours / Number of = units (total) 3	
7. Course instructor name (if applicable) More than one name is mentioned) Prof. Dr. Salwa Abdel Zahra Abdel Jalil	
Course objectives .8	
This course aims to provide students with basic _ 1 information about the environment and the sciences that deal with ecology, its importance, its living and non-living components, and the nature of the relationships and .interactions between these components	Course objectives

students about the importance of Educating -2 natural resources, preserving biodiversity, and using sustainable methods to preserve the environment. This is done by studying the cycles of elements in the environment, food chains, food pyramids, and the nature of food relationships between various living organisms and natural .resources					
Learning and teaching strategies .9					
Providing students with advanced skills to understand natural resources and learn how to solve environmental problems. 2. Providing students with basic information .about natural energy sources and how to conserve them			Strategy		
Course structure .10					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

Course Description Form B106

Course name : Botany
Course code : Bio 106
Semester/Year: 2025-2026
4. Date this description was prepared: 2025-2026

5. Available attendance forms: Weekly	
6. Number of study hours (total) / Number of units (total)30 theoretical hours+ 60 working hours	
7. Course instructor name (if applicable) (More than one name mentioned): Al-Sadi Prof. Dr. Sahar Abdel Abbas Malek Prof. Dr. Majid Abdel Hamid Ibrahim	
Course objectives .8 which includes the study of ‘Introducing the student to the principles of botany cell and tissue components and the plant life cycle, in addition to the study of plant morphology, anatomy and cytology, the development of plant classification and classification system, as well as the study of plant communities and ecosystems, and the classification of plants and their developments according to anatomical characteristics by introducing internal anatomy . For leaves, epidermis, vascular bundles, and secondary wood. Study .of the processes of respiration, photosynthesis, and nutrition in plants	
• plant classification and ‘Definition of botany .structure • .Knowledge of botany and its definition • and functions structure Study of the internal . of cells • Study of the processes of photosynthesis, .respiration, and nutrients • Dissection of leaves, stems and roots And .different parts of the plant • . Study of biodiversity in plants	Course objectives

● .Anatomy of the internal structure of plants					
Learning and teaching strategies .9					
The main strategy encourages students to understand the structure of cells and tissues in plants and highlights the importance of diversity in the plant kingdom. This will be achieved through interactive lessons and classes, and the study of simple experiments that include activities such as sampling and conducting experiments of interest .to students			Strategy		
Course structure .10					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
		Plant Cells and Tissues: Shape and Functions Cell membrane, cytoplasm, nucleus, Kolgi bodies , nucleolus, mitochondria, cytoskeleton Mechanism of movement of water and molecules across the plasma membrane in the plant cell wall Contents of a plant cell Plant cell / living components Plant cell / non-living components Cellular respiration and glycolysis Classification of plant tissues, meristematic tissue First test: permanent tissue Conductive tissues in plants Plant tissue: the internal structure of plant organs (leaves, stems, and roots) Algae, fungi , and plant diversity of mosses and ferns Gymnosperms, Angiosperms , Monocots and Dicots Cytology, plant ecology, and adaptation in plants			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Course Evaluation . Daily tests and reports -1 .Monthly exams and final exam -2	
Learning and teaching resources .	
1- Botany, Dr. K. AJITHADOSS,2006	
2- Paula J. Rudall (2007) Anatomy of flowering plants	
3- lectures power points	
4- Books and references that he recommends (scientific journals, reports.....)	

Course Description Form B210

8. Course name
Plant classification
9. Course code
B210
10. semester/year
– Second2 2025/2026
11. Date this description was prepared

2025-9-11	
12. Available attendance forms	
Theoretical and practical	
13. Number of study hours (total) / Number of units (total)	
hours theoretical - 3 30	
14. (Course instructor name (if applicable) More than one name is mentioned	
Prof. Dr. Abdullah Hamad Lafta	
Course objectives .8	
• Learn the most important taxonomic terms • Knowing the names of families and races • Focus on diagnostic characteristics of families	Course objectives
Learning and teaching strategies .9	
Through lectures, illustrations, and dry .and fresh plant specimens	Strategy
Course structure .10	

Course Description Form B212

Course name .1 Entomology

2. Course code : B 212	
3. Semester/Year : Second Semester2025/2026	
4. Date this description was prepared: 1/9/2025	
5. Available attendance forms : In-person	
6. Number of study hours (total) / Number of units (total): 45 / 4	
7. Course instructor name (if applicable) More than one name is mentioned) Prof. Dr. Kazem Saleh Al-Hadlak Asst. Prof. Dr. Zainab Fadel Mansour	
Course objectives : Introducing the student .8 Introducing the student to the characteristics of the insect class and how to differentiate it from other .classes belonging to the Arthropoda phylum Learn about the importance of insects in the environment Study the external appearance of the insect and identify the important characteristics in classification Study the internal organs of the insect and learn about its working mechanism Study the different orders, identify their most important characteristics, and prepare a cadre capable of .classifying insects	
	Course objectives

• Introducing the student to the characteristics of the insect class and how to differentiate it from other classes .belonging to the Arthropoda phylum • Learn about the importance of insects in the environment • Study the external appearance of the insect and identify the important characteristics in classification • Study the internal organs of the insect and learn about its working mechanism • Study the different orders, identify their most important characteristics, and prepare a cadre capable of classifying .insects	
Learning and teaching strategies .9	
• Lectures and multimedia - presentations to deliver .essential knowledge • Interactive discussions and debates to encourage critical thinking. • Case study and problem-based learning for practical applications. • Field work and outdoor activities to directly monitor ecosystems. • work Laboratory.	Strategy

Course structure .10

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
monthly exams	Lecture + PowerPoint + Q&A	Parts of the insect body 1- Head area	Student understanding of the lecture	theoretical + 3 practical 2	1
	Lecture + PowerPoint + Q&A	2- chest area	Student understanding of the lecture	theoretical + 3 practical 2	2
-Lecture participation -Absences -Pop quizzes -Academic activities -Attendance -Reports	Lecture + PowerPoint + Q&A	3- abdominal area	Student understanding of the lecture	theoretical + 3 practical 2	3
	Lecture + PowerPoint + Q&A	Ice formation and shedding Digestive and fecal system	Student understanding of the lecture	theoretical + 3 practical 2	4
	Lecture + PowerPoint + Q&A	First monthly exam	Student understanding of the lecture	theoretical + 3 practical 2	5
	Lecture + PowerPoint + Q&A	Respiratory + reproductive system	Student understanding of the lecture	theoretical + 3 practical 2	6
	Lecture + PowerPoint + Q&A	Nervous system + circulation	Student understanding of the lecture	theoretical + 3 practical 2	7
	Lecture + PowerPoint + Q&A	Classification study Primary ranks + tremors	Student understanding of the lecture	theoretical + 3 practical 2	8
	Lecture + PowerPoint + Q&A	Order of locusts and order of cockroaches	Student understanding of the lecture	theoretical + 3 practical 2	9
	Lecture + PowerPoint + Q&A	Second theoretical exam	Student understanding of the lecture	theoretical + 3 practical 2	10
	Lecture + PowerPoint + Q&A	Order Hemiptera Order Coleoptera	Student understanding of the lecture	theoretical + 3 practical 2	11
	Lecture + PowerPoint + Q&A	Diptera order + order Hymenoptera	Student understanding of the lecture	theoretical + 3 practical 2	12
	Lecture + PowerPoint + Q&A	Final practical exams	Student understanding of the lecture	theoretical + 3 practical 2	13

Course Evaluation

Tests, discussion, practical tests	
Learning and teaching resources	
Written by: Hussein Abbas Al-Ali and his group	General Entomology / Hussein Abbas Al-Ali and his group
Written by: George Rizkallah	Structure and classification of insects / George Rizkallah
Imm s Text book of Entomology	by Richard & Davis
Useful and distractive insects	By Borrer and Borrer

Course Description Form B207

Course name : Microscopic preparations .

Course code : B207 .

: Semester/Year .2025/2026

2025-Date of preparation of this description : 12- 9 .

Available attendance forms : Weekly					
Number of study hours (total) / Number of units (total): 30					
Name of the course administrator (if applicable) More than one name is mentioned) : Mr. . Dr. Sanaa Jamil Thamer + A.M.D. Sondos Walid					
Course objectives					
• Understanding the basic principles of the microscope • Developing practical skills in laboratory preparations • Learn about the structure of cells and tissues under the microscope • Applying theoretical knowledge to laboratory practices • Developing analytical and observational skills				Course objectives	
Learning and teaching strategies .					
• Practical and laboratory learning • Active Learning • Interactive Lectures • Formative Assessment				Strategy	
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

Conduct experiments, questions and discussions	Practical lectures	• Introduction to microscopic preparations, laboratory safety, first aid • Types of microscopes and their composition • Microtomes: Types and Structure • Types of microscopic preparations • Full preparations • Drugged and killed animals, obtaining samples • First exam • Method of cutting and preparation of skeletons • Preparation of living cells, crushing method • Vital staining methods • Smear method • Installation and solutions used • Dehydration and Clearing • Embedding and sectioning	• knowledge and understanding • Analysis and interpretation • Problem Solving and Clinical Application • Ethical and professional awareness	2 hours per week	15
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		• Staining and labelling • Second exam			
Course Evaluation					
• Written Exams • Practical/Lab Exams • Projects & Reports					
Learning and teaching resources .					
Microscopic preparations Dr. Kawakib Abdul Qader Al-Mukhtar			book		
https://fac.ksu.edu.sa/sites/default/files/lthdyrt_lmjhry_ljz_lthny.pdf			Website		

Course Description Form B208

Course name: Invertebrates
Course code: B 208
Year/Semester: Semester

2025/2026	
Date of preparation of this description: 2025/13/9	
Available attendance forms: attendance lists	
3. Number of study hours (total) / Number of units (total) hours theoretical, 120 hours practical 45/90	
Course instructor name (if applicable) More than one name is mentioned) Dr. Muhammad Ghazi Khalifa	
Course objectives	
• Identify the animal phyla in .the subject of invertebrates • The ability to diagnose and classify invertebrate species or .genera • Use compound microscopes and slides to describe the general appearance and internal parts of .invertebrate species	Course objectives
Learning and teaching strategies	
	The strategy followed in delivering this unit is to encourage students to participate in collecting invertebrate genera and

	species from freshwater, marine, and terrestrial soils, while at the same time refining and expanding their thinking skills through .interactive lessons
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9. Course structure .

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Exams	Lectures	Protozoa, sponges, cnidarians, flatworms, annelids, roundworms, arthropods, nematodes, echinoderms	Description, diagnosis and classification of invertebrate genera Understanding the basic information and knowledge in the application of invertebrate science, realizing the role of invertebrate science with other sciences in the development of life,	3 theoretical, practical 8	6

			acquiring the student scientific and practical ability in the field of invertebrate science, learning to prepare slides of samples of invertebrate species, and using the various devices specific to the specialty of invertebrate science		
Course Evaluation: 10 -point exams . Daily exams 10 marks Project discussion degrees 20 A Practical exam degrees 10					
Learning and teaching resources .					
			Dr.Meisch2000		
			Dr.Karanovic2012		

	Introduction to Marine Biology_Dr. Bayard A. and Dr. Mac Konavi 1985 University of Oregon
	Invertebrates_Zuhair Mohammed Abdullah and Najm Shlemon_1989 University of Mosul Introduction

Course Description Form B206

Course name /tissues .	
2. Course code / B 206	
3. Second semester/year2025/2026	
4. Date of preparation of this description : 12/9/2025	
5. Available forms of attendance / in person	
6. Number of study hours (total) / Number of units (total)	
hours of theory + 2 hours of practical (4 units) 3	
7. (Course instructor name (if applicable) More than one name is mentioned	
Prof. Dr. Maha Khalil Al-Mulla Prof. Dr. Karim Hilal Thamer	
8. Course objectives	
• Study of the histological structure of the body's various systems • Examination of tissue sections and identification of the normal structure of each organ • Study of histological changes in tissues and cells	Course objectives

9. Learning and teaching strategies					
			Strategy Theoretical and practical lectures .Use visual aids such as software and graphic aids Explanation and live delivery Pre-lecture tests		
10. Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

Questions and discussion	Class lectures	Epithelial tissue	Introduction to histology, tissues and their basic types and basic components of tissue, epithelial tissue, diagnostic characteristics of epithelial tissue, intercellular communications of . epithelial cells		1
		Types of epithelial and glandular tissue	Types of epithelial tissues Simple and compound glandular tissue.	theoretical 3 practical 2 + hours	2
		Connective tissue, fibres, loose and dense connective tissue, adipose tissue.			3
		Cartilage types	Connective tissue, its types, cells, fibers, and the basic substance of connective tissue, adipose tissue, and its types	theoretical 3 practical 2 + hours	4
		Nervous tissue, types of neurons, synapses, neuromuscular junction	Cartilage, chondrocytes, histogenesis of cartilage and bone, classification of bones and joints		5
		Muscular system			6
			First exam		7

			Central and peripheral nervous tissue, types of neurons, neuromuscular junction Muscle tissue, organization, types of muscles, diagnostic characteristics of each type, contraction mechanics, muscle spindles Skin, basic layers, skin appendages such as sweat glands, hair and nails Second exam Circulatory system, vascular and lymphatic systems and lymphatic organs Digestive system, oral cavity, esophagus, stomach, intestines Accessory glands of the digestive system, such as the salivary glands, liver, and pancreas Urinary system, kidneys, tissue structure, ureter, urinary bladder Respiratory system, lungs, trachea, bronchioles, alveoli		
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11. Course Evaluation .	
Monthly tests and short weekly tests Preparing special reports on the topics required within the curriculum and discussing these topics Discussion and questions during the lecture time	
12. Learning and teaching resources	
	*Junqueira's Basic Histology TEXT AND ATLAS, Anthony L. Mescher, PhD, 2018 Junqueira's Basic Histology TEXT AND ATLAS, Anthony L. Mescher, PhD, 2016

Course Description Form B205

1. Course name: Plant Anatomy
2. Course code .Bio 205
3. First 2025/2026 semester/year
4. Date of preparation of this description : 11/9/2025

5. Available attendance forms						
Mandatory in classrooms						
6. Number of study hours (total) / Number of units (total)						
hours (2 theoretical and 2 practical hours per week) 6						
7. (Course instructor name (if applicable) More than one name is mentioned						
Prof. Dr. Iman Mohamed Abdel Zahra and Asst. Prof. Dr. Sajida Yassin Sweid						
Course objectives .8						
• Definition of the types of plant . tissues that make up the plant body • Knowing the specifications and ... origin of each fabric • Knowing the mutations that occur in exposed to The plant when unfavorable conditions - Knowing the relationship between plants and their environment			Course objectives			
Learning and teaching strategies .9						
Use of theoretical and practical lectures			Strategy			
Course structure .10						
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week	
Questions and discussion	Lectures	Plant cell wall composition and characteristics	plant cell	2	the first	
			plant tissues	2	the second	
Questions	Lectures	Knowing the living and non-living components of the cell	plant tissues	2	the third	
	Lectures		plant tissues	2	Fourth	
Questions	Lectures	Types of meristematic tissues	Systemic systems in plants	2	Fifth	
Discussion	Lectures				2	Sixth
and questions	Lectures				2	Seventh

Oral questions discussion	Lectures	Types of permanent tissues	Systemic systems in plants	2	Eighth
Questions discussion	Lectures	connective tissue system	First exam	2	Ninth
Questions discussion	Lectures	basic tissue system	Systemic systems in plants	2	tenth
Questions discussion	Lectures	Tissue transport system	Internal structure of the body	2	eleventh
discussion	Lectures	Internal structure of the root	Internal structure of the plant body		twelfth
		Internal structure of the stem and leaf	Internal structure of the plant body		thirteenth
		The relationship between the internal structure of the plant body and its environment	Internal structure of the plant body		fourteenth
		Secretory tissues in the plant body	secondary growth		fifteenth
		Vascular cambium and secondary growth	secondary growth		
		secondary growth in the root and stem	Second exam		

Course Evaluation .11

Daily and monthly exams and monitoring student interaction with the course

Learning and teaching resources .12

	plant anatomy
K. ESUE	Plant anatomy

Course Description Form B 203

Cell Science : Course name

2. Course code : BIO 203	
3. 2026-2025 the chapter / First year	
4. 2025-Date of preparation of this description : 11-9	
5. Available attendance forms : in-person - online	
6. Number of study hours (60) / Number of units) 7(	
7. : Course instructor name Prof. Dr. Karim Hilal Thamer Asst. Prof. Dr. Talib Abdul Majeed Ramadan M.D. Azhar Abdul Jabbar Amin	
8. Course objectives .	
• He will recognize students on structure and .1 purposes the components Basic For cells primitive nucleus And real nucleus, Especially molecules The . big one and membranes And the organelles • He will recognize students on How to Use .2 This is amazing the components Cellular To generate Energy and use it in cells • He will recognize students on the .3 . components Cellular latent behind split cells Divisive • Will be applied students Their knowledge .4 Biology cell on Examples Selected For changes or	Course objectives

losses in Jobs Cells . Can. that Includes This is amazing Responses For changes Environmental or Physiological, or Changes in Jobs cells The resulting on Mutations					
9. Learning and teaching strategies					
It is represented by Strategy Home Followed in teaching This is amazing Unity in to encourage students on Participation in Exercises, with refine skills thinking cash They have And expand it . And it comes true that from during Chapters Academic, and lessons Interactive, And study Types from experiments simple that Includes some Activities simulation that Charges Students			Strategy		
10.Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Exam	Lectures	1- Introduction to Cell	By completing This is amazing Unity Successfully, You will be able to from... Clarification .1 Features Home For cells, primitive nucleus And real The nucleus Explanation .2 relationship between structure cell And its function. Determine .3 Technologies empiricism used	2	First week
		2- Classification of Cells- Prokaryotes and Eukaryotes.		2	The second week
		- Prokaryotic cells			
		- Eukaryotic cells			
		- Animal cells			
		Cell Fractionation			
		3-Cellular Organization: The Cytoskeleton		2	The third week
		-4- Cell structure and function		2	Fourth week
		-Eukaryotic Cell Organelles		2	
		Membrane-Structure and Function		2	
- -5-Plasma membrane		Fifth week			
-6-Movement Of Molecules into and Out of Cells	2	Week 6			
-Transport of Ions					
-7-Endocytosis and Exocytosis	2	The seventh week			
-8-Exam. 1	2				

		-9-Prokaryotic Chromosomes and cell division -Eukaryotic Chromosomes and cell division -10- Cell Cycle -Cytokinesis in Animal Cells -11-Cell Reproduction: Meiosis -12-Comparison of Meiosis and Mitosis 13-Types of Cells in the Human Body 14-Exam.2 Protein Synthesis 15- Preparatory week before the final exam	To study cells , And show efficiency Use microscope Photovoltaic .4By completing This is amazing Unity Successfully, You will be able to from... Clarification .5 Features Home For cells, primitive nucleus And realThe nucleus Explanation .6 relationship between structure cell And its function. Determine .7 Technologies empiricism used To study cells, And show efficiency Use microscope Photovoltaic	2 2 2 2 2 2	The eighth week Week 9 The tenth week Week 11 Week 12 Week 13 Week 14 Week 15
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11. Course Evaluation

Evaluation formative	The jugs	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Duties	2	10% (10)	8 and 12	LO #3, #4 and #6, #7
	Projects: Laboratory	1	10% (10)	Continuous	All
	a report	1	10% (10)	13	LO #5, #8 and #10
Evaluation Final	Midterm exam	2hr	10% (10)	7	LO #1 - #7
	Final exam	2hr	50% (50)	16	All
Full evaluation			100% (100 Marks)		

.12. Learning and teaching resources

Required Texts	David M. Prescott - Cell , 1980
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Recommended Texts	Cell Biology: A Comprehensive Treatise, Volume 2: The Structure and Replication of Genetic Material Paperback – 11 Nov. 2012, by David M. Prescott (Editor)
Websites	https://www.commonsense.org/education/reviews/cell-and-cell-structure

Course Description Form B306

1. Parasitology : Course name .
2. Course code: B 306
3. Semester/Year: 2024-2025 .
4. 2025-Date of preparation of this description: 12-9 .
5. Available attendance forms: Weekly .
6. Number of study hours (total) / Number of units (total): 30 hours .
7. Name of the course supervisor (if more than one name is mentioned): Prof. Dr. Adhraa Abdul-Amir Aziz + Asst. Prof. Dr. Shaima Abdul-Razzaq Hamid Asst. Dr. Farhan Badan Hajem +

.8. Course objectives: Identifying microorganisms and parasites that cause diseases.	
• Understanding the life cycles of parasites and their transmission mechanisms. • Developing laboratory diagnostic skills for parasites. • Study of the pathological and medical effects of parasites on humans and animals. • Learn how to prevent and control parasitic diseases. • Preparing students to work efficiently in medical, veterinary and research fields related to parasitology.	
• Providing students with accurate scientific knowledge of parasite types, their life cycles, and their effects on .humans and animals • Developing critical thinking and scientific analysis skills in interpreting the results of diagnostics and .parasitological studies • Enhance the ability to conduct simple laboratory tests and experiments related to the identification and diagnosis of .parasites in the laboratory • Preparing the student for postgraduate studies or practical practice in the medical and veterinary fields through a .solid knowledge base in parasitology • Understand the basics of parasitic diseases, their transmission mechanisms, their pathological effects, and link theoretical knowledge to .clinical and preventive application	Course objectives
.9. Learning and teaching strategies	
ActiveLearning Hands-on / Laboratory Learning Interactive Lectures Formative Assessment	Strategy
.10. Course structure	

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watch es	week
Questions and discussion	Lectures/ Class	• Introduction to Parasitology • Parasitic protozoa order Sarcozoa - - parasitic amoebae • Parasitic flagellates - intestinal flagellates • - Haemoflagellates - Spore class • vaginal flagellates • Parasitic worms - flatworms • liver fluke • Lungworms • bloodworms • tapeworms • Nematodes	• knowledge and understanding • Analysis and interpretation • Problem Solving and Clinical Application • Ethical and professional awareness	2 hours per week	15
.11.Course Evaluation					
Written Exams Practical/Lab Exams Projects& Reports					
.12. Learning and teaching resources					
Foundations of parasitology ,			book		
Diagnosing Medical Parasites.			book		
Essentials of Medical Parasitology			book		

Course Description Form B321

1. Course name .: Animal Physiology
2. Course code: B 321
3. : Semester/Year2025/2026
4. Date of preparation of this description : 12-9-2025
5. Available attendance forms : Weekly
6. Number of study hours (total) / Number of units (total): 30 hours
7. Name of the course administrator (if applicable) More than one name is mentioned) : Prof. Dr. Sanaa Jameel Thamer + Asst. Prof. Dr. Iqbal Abdul Aziz
8. Course objectives : 1 Understanding the functions of the human -body . 2 Linking Explaining the organizational mechanisms . 3- -structure to function . 4 Interpretation of physiological responses . . knowledge in the clinical field Application of -5

• Providing the student with accurate scientific knowledge of the principles and functions of organs and cells • Develop critical and analytical thinking skills in interpreting experimental and clinical results • Enhance the ability to conduct simple practical experiments in the physiology laboratory • Preparing the student for graduate studies or medical practice through a strong knowledge base • Understand the fundamentals of diseases and disorders of vital functions and link theory to clinical application			Course objectives		
9. Learning and teaching strategies					
Active Learning Hands-on / Laboratory Learning Interactive Lectures Formative Assessment			Strategy		
10. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures/Class	• Cell physiology • digestive system • Digestive system diseases • urinary system • Urinary system diseases	• knowledge and understanding • Analysis and interpretation • Problem Solving and Clinical Application	2 hours per week	15

		• respiratory system • Respiratory diseases • circulatory system • Circulatory system diseases • reproductive system • Reproductive system diseases • nervous system • Diseases of the nervous system • endocrine glands • diabetes • high blood pressure	• Ethical and professional awareness		
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11. Course Evaluation

Written Exams
 Practical/Lab Exams
 Projects& Reports

Learning and teaching resources .12

Guyton and Hall Textbook of Medical Physiology – Arthur C. Guyton & John E. Hall

book

Ganong's Review of Medical Physiology – Kim E. Barrett

book

Principles of Physiology – Michael L. Johnson

book

Human Physiology: From Cells to Systems – Lauralee Sherwood	book
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Course Description Form B316

Course name: Algae
Course code : B316
Semester/Year : First Semester/2025-2026
2025-Date of preparation of this description : 11-9
.Available forms of attendance : in person or online, if needed
:Number of study hours (total) / Number of units (total) .
2 One hour per week (30) hours in the course/three units
Name of the course administrator (if applicable) More than one name is . (mentioned
Assistant Professor Nidaa Jassim Mohammed Al-Mousawi Assistant Professor Adnan Abdullah Hamad Al-Mousawi
Course objectives

- Introducing the student to the importance of algae science and addressing the most important divisions and orders to which they belong, while explaining the differences between them in terms of body shape, pigment type, and methods of reproduction - Identifying algal environments and methods for collecting and handling them in the laboratory - Learn about the importance of algae in environmental purification or its use in the pharmaceutical industry	Course objectives
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Learning and teaching strategies

Strategy

Course structure .

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Discussions and short tests	a lecture	Introduction to Algae Introduction to algae	Theoretical lecture, PowerPoint presentation and discussions on the topic	/2 Theoretical Practical /2	3+2+1
=	=	cyanobacteria	=	=	4
Monthly evaluation		exam			5
		Chlorophyte			6

		Xanthophyta and cryophyte			
		bacillariophyceae			
		Pyrrophyta and euglenophyta			
		phaeophyta			
		rhodophyta			
		Second monthly test			
Course Evaluation : 40 points					
Short tests + monthly tests + reports					
Learning and teaching resources					
Books and references that he recommends (scientific journals, reports.....)					
lectures power points					
book2010					

Course Description Form B376

Course name: Pollution	
Course code : B376 .	
Semester/Year 2025/2026	
Date of preparation of this description : 11/9/2025	
Available forms of attendance : In-person	
Number of study hours (total) 30 / Number of units (total) 3	
Name of the course administrator (if applicable) More than one name is mentioned) Prof. Dr. Salwa Abdel Zahra Abdel Jalil	
Course objectives .	
✓ This course aims to provide students with basic information about pollution in general and environmental pollution in particular, and to identify the types of pollution present in our environment and the degrees of pollution ✓ Different and different sources of pollution, focusing on air pollution, water pollution, soil pollution,	Course objectives

and radiation pollution, in addition to other types of pollution such as noise and visual pollution ✓ Also, addressing the most important methods of - treating the various types of these pollutants and the most important damages and diseases they cause to the environment and living organisms. Also, providing advice and guidance for the individual, student and society to contribute to reducing pollution and preserving the environment ✓ The practical course on pollution aims to teach students methods for preparing chemical solutions and standard solutions used to measure various environmental pollutants Training students to solve equations related to environmental pollution ● -	
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Learning and teaching strategies

The main strategy that encourages students to understand and familiarize themselves with general terms related to the topic of pollution. Introducing students to the types of environmental pollutants, their sources, and their risks to the environment and life. Promote environmental awareness among students to help them preserve their environment. Encourage others to participate in preserving or reducing environmental pollution, such as planting trees, using green technology, reducing the waste of pollutants, and finding environmentally friendly alternatives to achieve sustainable development	Strategy
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Course structure .

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
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Course Description Form B378

: Course name . medicinal plants	
Course code .Bio 378	
First 2025/2026 Semester/Year .	
Date of preparation of this description : 11/9/2025 .	
Available forms of attendance .	
Mandatory in classrooms	
Number of study hours (total) / Number of units (total) .	
6 Hours (2 theoretical and 2 practical hours per week)	
Name of the course administrator (if applicable) More than one name is (mentioned	
Prof. Dr. Iman Mohamed Abdel Zahra	
Course objectives	
• Definition of medicinal plants • Knowing the specifications and classification of medicinal plants • Knowing the active ingredients in ... plants	Course objectives

- Knowing how to use medicinal plants					
Learning and teaching strategies					
Use of theoretical and practical lectures			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion Questions Questions Discussion and questions Oral questions discussion Questions discussion Questions Questions discussion discussion	Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures Lectures	History of the development of medicinal plants			
		The importance of medicinal plants to humans and the environment			
		What are alkaloids, their importance and classification	Historical overview		the first
		Chemical classification of alkaloids	The importance of medicinal plants	2	the second
		What are glycosides, what is their importance, and where are they manufactured	alkaloids alkaloids glycosides glycosides	2 2 2 2	the third Fourth Fifth
		Classification of glycosides		2	Sixth
		General characteristics of oils, their importance, classification and types	First exam essential oils Pardon	2 2 2	Seventh The eighth Ninth
		Its types, medical importance and general characteristics	plant resins bitter substances	2 2	tenth eleventh
		Its presence in plants, types of resins and their general properties	Examples of some medicinal plants	2	twelfth
		What are bitter substances, what are their types and what is their medical importance	Diseases that medicinal plants treat	2	thirteenth
		Families rich in medicinal plants	Second exam		fourteenth
		Examples of some diseases and how to			fifteenth

		treat them with medicinal plants			
Course Evaluation					
Daily and monthly exams and monitoring student interaction with the course					
Learning and teaching resources .					
			Medicinal plants and herbal medicine		
			Encyclopedia of Medicinal and Aromatic Plants		
			Websites for medicinal plants		

Course Description Form B310

Course name: Embryology
Course code : B310
2026-2025/ Second : Semester/Year

Date this description was prepared :12.9.2025					
in-person teaching : Available forms of attendance					
Number of study hours (total) / number of units (total): 4 / 2 theoretical + 2 practical					
Name of the course administrator (if applicable) More than one name is . mentioned) : Prof. Dr. Ilham Jabbar Jalil+ Assoc. Dr. Anwar Nader Saywan					
Course objectives					
• .Understanding the principles of embryology • Using embryology to reveal the timing of . tissue formation during the life history of organisms				Course objectives	
Learning and teaching strategies					
Developing the student's ability to understand the importance of embryological development, identify organ structures, and recognize embryonic .abnormalities during the early stages of development				Strategy	
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

The above strategy		1.Gametogenesis	Student understanding of the lesson	2 theoretical	
		2.Fertilization	Student understanding of the lesson	practical 2 +	
		3.Clean in Amphioxus, Frog & Chicken.	Student understanding of the lesson	2 theoretical	
		4.Blastula in Amphioxus, Frog & Chicken.	Student understanding of the lesson	practical 2 +	1
	Presentation	5.Gastrulation in Amphioxus & Frog	Student understanding of the lesson	2 theoretical	2
	Presentation	6.Gastrulation in Bird.	Student understanding of the lesson	practical 2 +	3
	Presentation	7.Neurulation & Germ layer formation of Amphioxus, Frog & Chicken.	Student understanding of the lesson	2 theoretical	4
	Presentation	8.Examination 1	Student understanding of the lesson	practical 2 +	5
	Presentation	9.Organogenesis: Section1: Muscle and eye development in the vertebrates	Student understanding of the lesson	2 theoretical	6
	Presentation	10.Organogenesis: Section2: Development of nervous system.	Student understanding of the lesson	practical 2 +	7
	Presentation	11.Neurogenesis and Axon guidance.	Student understanding of the lesson	2 theoretical	8
	Presentation	12.The Organizer and origin of organs.	Student understanding of the lesson	practical 2 +	9
	Presentation	13.Examination 2	Student understanding of the lesson	2 theoretical	10

Course Evaluation

as well as weekly reports, daily and monthly ‘This is done through displaying questions and discussions .exams

Learning and teaching resources

	Developmental Biology /Book. Louis, B. (2011). Embryology Early Development from a Phenomenological Point of View. Publication number: GVO 01.
	Fundamentals of Human Embryology (cambridge.org)

Course name : Microbiology Genetics
Course code : B322
Semester/Year : 2024-2025 .
Date of preparation of this description : 11/9/2025
Available attendance formats : hall and laboratory
Number of study hours (total) / Number of units (total): 8 hours per week
Name of the course administrator (if applicable) More than one name is mentioned) : Prof. Dr. Manaf Joda Abdel Abbas and Asst. Prof. Dr. Yassin Yaqoub Youssef and Asst. Prof. Dr. Mona Abdel Imam Ahmed
: Course objectives To introduce the student to the science of microbiological genetics and the scientific terms related to it, and to familiarize him with the existence and spread of these microorganisms in different environments, their role in their survival, and their impact on humans and other living organisms.

• Introducing the student to the scientific terms related to microbiology genetics. • Study of the presence and spread of microorganisms in different environments. • Study the role of DNA mutations and repairs. • Study the role of DNA in identifying bacteria. • Study of genetic relationships between microorganisms. • .Transfer of genes between cells			Course objectives		
Learning and teaching strategies					
The main strategy encourages students to understand the presence of DNA in microorganisms and explains its important role in their lives. This will be achieved through interactive lessons and tutorials, in addition to studying simple experiments that include some sampling activities that stimulate students' interest in extracting DNA from microorganisms			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Quick exam and monthly exam	theoretical	-1Chemistry and structure of deoxyribonucleic acid (DNA) and deoxyribonucleic acid (RNA)	Understanding the lecture	per 2 lecture	Week 1
		-2DNA replication			Week 2
		Gene -3expression			Week 3
					Week 4
					Week 5

		Structural -4genes An exam Dominant genes or -5 operons 6- 7- Viruses 8- Classification of mutations 9- Mutation in germs Mutagenic agents 10- Reform 11- Plasmids 12- Deoxyribonucleic Acid(DNA) 13- Molecular 14- Identification of microorganisms using 16S rRNA 15- Genetic methods for identifying and classifying microorganisms exam			Week 6 Week 7 Week 8 Week 9 Week 10 Week 11 Week 12 Week 13 Week 14 Week 15 Week 16
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Course Evaluation

Quizzes	2	10% (10)
Assignments	2	10% (10)
Projects / Lab.	1	10% (10)
Report	1	10% (10)
Midterm Exam	1hour	10% (10)
Final Exam	2hours	50% (50)

Learning and teaching resources .

1- Tortora GJ, Funke BR and Case KL. (1997). Microbiology. 6 th ed. pp: 276-89. Benjamin Cumming, Publ. Co. California.
2- Prescott LM, Harley JP and Klein DA (1999). Microbiology. 4th ^{ed} . Pp:255-334. WCB McGraw-Hill. USA.
3- Jerome JP and James TS Microbiology: Dynamics and Diversity. (Book).
4- Abd Al- Abbas MJ, Al-Hadithi, HT and Al-Badran, AI (2012). MLSTof <i>S.aureus</i> Isolates Identified by 16S rRNA Gene Sequencing. LapLambert Co. Germany.
1- Wafaa Jassim Al-Rajab and Hassan Mohammed Ali Al-Qazzaz. Microbiology, Part One, Translation, .University of Mosul (Textbook)
.Ghaleb Hamza Al-Bakri. Principles of Genetic Engineering. University of Basra (Textbook) -2

Course Description Form B366

Course name Fundamentals of Immunology
Course code B366
Second semester/year .2025/2026
Date of preparation of this description: 2025/9/12

Available forms of attendance In person					
Number of study hours (total) / Number of units (total)					
2 hour of theory + 2 hours of practical (3 units) 1					
Name of the course administrator (if applicable) More than one name is (mentioned)					
Prof Dr. Wafa Saadoun Shani, .D Marwan Yassin Abdel Majeed					
Course objectives .					
Course objectives Introducing the student to the meaning of immunology Guiding the student to know the immune system, immune cells, and their role in the immune response Expanding the student's awareness of the types of immune response and the cells and molecules involved in them			Course objectives		
Learning and teaching strategies .					
			Strategy • Theoretical and practical lectures • Use visual aids such as PowerPoint and special aids such as .models and shapes • Using the competitive competition method in the course material among students		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

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Course Evaluation

for the subject, two tests per semester, then the average for Theoretical and practical tests .both the theoretical and practical tests, in addition to the short tests

Evaluation method	Learning method	Name of unit/course or topic	Required learning outcomes	watches	week
Questions and discussion	Lectures/Class	Historical background and types of immune response		2z + 2a	1
	Lectures	Components of innate immunity		2z + 2a	2
	Lectures	Types of adaptive immunity		2z + 2a	3
	Lectures	Phagocytosis and inflammation		2z + 2a	4
	Lectures	First test		2z + 2a	5
	Lectures	Cells of immune system		2z + 2a	6
	Lectures	Tissues of immune system		2z + 2a	7
	Lectures	Antigen		2z + 2a	8
	Lectures	Antibodies		2z + 2a	9
	Lectures	Complements components		2z + 2a	10
	Lectures	Major histocompatibility complex		2z + 2a	11
	Lectures	Humoral and cellular immune response		2z + 2a	12
	Lectures	The second test		2z + 2a	13

	Lectures	Antigen and antibody reaction		$2z + 2a$	14
	Lectures	Hypersensitivity		$2z + 2a$	15
	Lectures	Autoimmunity		$2z + 2a$	16
	Lectures	Immune deficiency and transplantation		$2z + 2a$	17
	Lectures	The third test		$2z + 2a$	18

Learning and teaching resources

	:Books Immunology Kuby 2019 Roitt's essential immunology 2017 Clinical immunology 2019
	Cellular immunology 2015 Basic Immunology 2024

Course Description Form B311

Course name : Fungi .

Course code : B311
(Semester/Year : First –)2025-2026 .
2025-Date of preparation of this description : 9-13 .
Weekly : Available attendance
Number of study hours (total) / Number of hours 30 hours - Units 3
Course instructor name (if applicable) More than one name is mentioned) Prof. Dr. Nagwa Mohamed Gamil
Course objectives Introducing students to the world of fungi, their diversity and importance in nature and human life. Enable students to distinguish between fungi and other groups of organisms such as bacteria and algae. Understanding the scientific basis for fungal classification (morphological, anatomical, taxonomic). Providing students with practical skills in collecting, isolating, and preserving fungal samples. Training students on microscopic identification of fungi and species identification using taxonomic keys.

Linking theoretical concepts to practical applications in the fields of agriculture, industry, and medicine.

Developing students' scientific research skills and encouraging them to make careful observations and conduct scientific analysis

Providing the student with the skill of identifying fungi and classifying them into phyla, genera and species.

Learn the morphological, physiological, and taxonomic foundations used in classification

Course objectives

Learning and teaching strategies

Interactive theoretical lectures

- a. Presentation of scientific material using slides and microscopic images.
- b. Encourage discussion and questions during the lecture to increase student engagement.

Laboratory-based learning

- c. Conducting practical experiments to isolate, grow and diagnose fungi.
- d. Use the microscope to study morphological characteristics and distinguish between species.
- e. Training students in the use of pure culture and sterilization techniques.

Problem-Based Learning

- f. Present case studies related to fungal diseases or environmental problems and encourage students to suggest solutions.

Use of multimedia

- g. High-resolution videos and images showing the life cycle of fungi.
- h. Interactive programs or digital simulations to illustrate the classification steps.

cooperative learning

- i. Divide students into small groups to carry out short projects such as collecting fungal samples from the environment and classifying them.
- j. Present the results of teamwork in the form of reports or presentations.

FieldStudy

k. Organizing field visits to collect samples of soil or infected plants to study fungal diversity.					
Homework and research activities					
l. Assign students to write scientific reports on specific fungi or review recent articles.					
Continuous assessment					
m. Use short tests, oral questions, and practical tasks to continually assess understanding.					
n. Providing constructive feedback to improve performance.					
Encouraging critical and creative thinking					
Ask open-ended questions that encourage students to analyze the role of fungi in the ecosystem and industry.					
Use PowerPoint and video to explain lectures .and conduct practical experiments			Strategy		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures	1- Definition of fungi, their importance 2- Taxonomic positions of fungi 3- ‘ Jellyfish fungi their characteristics, importance, and life cycles 4- Plasmodiophora their importance, :fungi classification, and life cycles 5- Kingdom Chromista its ‘	Knowledge and understanding of life cycles, morphological and anatomical classification	hours 2 per week	15

		characteristics, importance, and life cycles 6- KingdomFungi, its characteristics, importance and life cycles 7- Division of zygomycetes 8- Division of sac fungi 9- Taphrinomycotina its characteristics, ‘ importance, and life cycles 10- Saccharomycotina its characteristics, ‘ importance, and life cycles 11- Pezizomycotina characteristics, importance and life cycles 12- basidiomycetes 13- Fungi echoes their characteristics, importance and life cycles 14- Smut fungi, their characteristics, importance, and life cycles			
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Course Evaluation

☐ Theory Exams –40-50 %

- Midterm Exam: Measures the student's understanding of basic concepts and classifications.
- Final Exam: Covers all course material and includes essay questions, multiple choice, and diagrams.

☐ Practical Exams –25-30 %

- Microscopic examination to identify different fungi.

- Evaluate the student's skill in performing the steps of isolation, development and diagnosis.
- ☐ Assignments& Reports – 10-15%
- Writing reports on laboratory experiments.
 - Short reviews of research or articles on fungi.

Learning and teaching resources

mycology	book
Fungi classification	book
Practical Mycology	book

Course Description Form B356

Course name aquatic plants

Course code : B 356

: Semester/Year 2025/2026

: Date of preparation of this description .2024-2025

Available attendance forms: Weekly

Number of study hours (total) / Number of units (total): 30 + hours60 practical hours	
Name of the course administrator (if applicable) More than one name is mentioned) Prof. Dr. Sahar Abdul Abbas Malik Al-Saadi	
Course objectives This course deals with aquatic plants, providing information on the importance of aquatic plants and their classification. It studies the morphology, environment, and anatomical aspects of submerged and emerging plants. The course also includes a study of the factors affecting the distribution, spread, and control of aquatic plants. It also covers methods of reproduction and growth . It also classifies the orders and families to which plants belong, providing a description of the plants.	
- Introducing the student to the existing aquatic plants In water bodies and marshes, their importance to the environment and their relationship with various organisms. Their distribution and spread are also identified, as well as how to control them, while studying them taxonomically, environmentally and anatomically. - Study of the morphology, environment and anatomical aspects of submerged and emerging plants - Study the factors affecting the distribution, spread, and control of aquatic plants, as well as their reproduction and .distribution methods - Classification of the orders and families to which . plants belong, giving a description of the plants	Course objectives
Learning and teaching strategies .	
This course covers aquatic plants, explaining their importance and classification. It also examines the morphology, environment, and anatomy of aquatic	Strategy

plants, as well as floating, protruding , and submerging plants . It also examines the factors affecting their distribution, spread, and control, as well as their methods of reproduction and growth. Furthermore, it examines the classification of aquatic plants, identifying their orders and families, and .describing them					
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions, discussions and reports	+ Lectures Classroom	Definition of aquatic plants and their importance			1
		Control of aquatic jungles			2
		Factors affecting aquatic plants			3
		Ecological groups of aquatic plants			4
					5
		Nature and appearance of aquatic plants			6
		Anatomy of aquatic plants			7
		Marine plants, their divisions and adaptations			8
		swamp plants			9
					10
		Growing and raising aquatic plants in glass tanks			11
		Aquatic plant propagation and how to grow them			12
		mosses and ferns			13
		Aquatic dicotyledons and aquatic monocotyledons			14
		Biodiversity and methods for measuring ecological indicators of aquatic plants			15
Course Evaluation					
Daily tests and reports -1					
.Monthly exams and final exam -2					
Learning and teaching resources .					
Al -1- Mayah and Hameem(1999) .Aquatic plants and algae			5 - Coles, Zane S., and Namrita Lall. "Sustainable Production of Aquatic and Wetland Plants." In <i>Aquatic Plants</i> . CRC Press, 2020.		
2- Gettys, L.A., Haller, W.T., & Petty, D.G. (2020). Biology and control of aquatic plants: A best management					

practices handbook (4th ed.). Aquatic Ecosystem Restoration Foundation.	
lectures power points -3	
4-Books and references that he recommends (scientific journals, reports.....)	

Course Description Form B455

Course name
plant groups
Course code
B 455
semester/year
First/ 2026-2025
Date this description was prepared
September 2025
Available attendance forms
Classroom Lecture - Laboratory\E-Learning
Number of study hours (total) / Number of units (total)
hours 4/ units 3

(Course instructor name (if applicable) More than one name is mentioned					
Asst. Dr. Alia Ahmed Abdel Sattar, Asst. Dr. Shaza Mohammed					
Course objectives					
• Introduction to this distinctive . biological group • individuals who are able Preparing to recognize archaea and distinguish them from higher plants • Training students to record observations and check the characteristics of the organism			Course objectives		
Learning and teaching strategies					
Problem solving, brainstorming, cooperative learning through theoretical and practical lectures Use of educational tools, presentations, scientific films and practical . application			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Student participation in a class activity	Theoretical lectures using educational tools , presentations and scientific films	Introduction to the Archaea and its branches	Student understanding of the lesson and thinking mental	Two hours of theory and two hours of practice practical	1
		Bryophyta and its environmental importance			2
		The life cycle of mosses, their stages, and methods of reproduction			3

First month practical and theoretical exam		Classification of mosses and their orders		One hour	4
		Liverworts: types, habitat, reproduction and medical benefits			5
		Leafy mosses Its types, the environment in which it is found, its reproduction, and its environmental and .medical benefits			6
		Pteridaceous plants non-flowering) vascular plants): their characteristics, environment and reproduction			7
					8
Second month theoretical and	Theoretical lectures using educational tools , presentations and scientific films	Classification of the classes, orders and genera of .pteridophytes		Two hours of theory and two hours of practice a job	9
				One hour	10
		Lycopodium and Horsetail: Anatomy, Environment, and Medical Importance			11

practical exam		Monocotyledonous plants: specifications, environment, reproduction, classification			
		Classification of monocotyledonous plants and their genera			
Course Evaluation					
‘Theoretical, midterm and final exams ‘extracurricular activities attendance					
Learning and teaching resources .					
Samir Khalaf Abdullah			Plant Groups: Archaea, 1986		
Hussein Ali Al-Saadi			The Archaeons Book 1990		
Ahmed Mohsen Adhbi			Practical Archaeology Book 2021		
Mosses and other bryophytes book 2000			Photosynthesis in Bryophytes and Early Land Plants book 2014		

Course Description Form B452

Course name	Physiology of microorganisms .
Course code: B452	

quarterly	Semester/Year . 2025/2026
Date this description was prepared .11 /9/2025	
weekly	Available forms of attendance
Number of study hours (total) / Number of units (total)2 + theoretical2 / practical3 units	
Name of the course administrator (if applicable) More than one name is Prof. Iman Aboub Makhfi (mentioned	
Course objectives	
The study of the functions and processes of microorganisms such as .bacteria, viruses, algae, and fungi Study of how microscopic organisms obtain energy and nutrients, the cycle of elements in nature, and how these elements are metabolized to form new compounds to meet their needs of complex biological processes such as the electron transport chain in aerobic bacteria and the cytoplasmic membrane, where oxidation-reduction reactions,	Course objectives

and biosynthesis anaerobic respiration occur					
Learning and teaching strategies					
It includes various methods that focus on the student’s actual participation in the learning process, such as quizzes and reports, and encourages students to search for information and answers on .their own through experience			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Daily exam, semester theoretical and practical exam, and practical report	Two-hour theoretical lectures and two-hour laboratory	Microorganisms and their place among living organisms	Introduction to life forms	2	1
		Classification of microorganisms according to energy sources	Classification of microorganisms	2	2
		To obtain microorganisms for the purpose of studying them in different directions, the necessary environment for their growth must be	Microbial culture And its development	2	3

		provided using Dormant or stable farms			
		Study of the growth of unicellular organisms	growth	2	4
		Compounds that a microscopic organism obtains from the environment to meet its needs in building its structures or obtaining energy	Nutrients	2	5
		Using light energy to convert carbon dioxide and water into sugar and organic compounds	Photosynthesis	2	6
		The abundance of basic units for the creation of cellular structures	biosynthesis	2	7
		Alcoholic and lactic	fermentation	2	8
		Aerobic and anaerobic respiration	cellular respiration		

		Endogenous and exogenous enzymes	enzymes	2	9
		Environmental components used by microorganisms	Organic sources	2	11
Course Evaluation .					
Preparing class and homework assignments .1 Preparing reports on practical experiments .2 .Conducting daily and semester exams .3 Conducting final exams .4					
Learning and teaching resources .					
			Principles of Microbiological Physiology Saad -To Dr. Maha Raouf Al		

Course Description Form B424

Course name .: Comparative Anatomy
Course code : B424
Semester/Year2025/2026

Date of preparation of this description : 11/9/2025 .4	
Available forms of attendance : In-person .5	
Number of study hours (total) 30 / Number of units (total) = 3 .6	
Name of the course administrator (if applicable) More than one name is .7 mentioned) Prof. Dr. Salwa Abdel Zahra Abdel Jalil	
Course objectives .8	
This course aims to provide students with basic information about the vertebrate group and a comparative anatomical study of the various systems of these groups, such as the skeletal, digestive, respiratory, reproductive, excretory, body cavity, skin, nervous system, and sensory .organs differences The student's familiarity with the basic - between animal groups in terms of similarities and differences between them, and linking them to the science of embryonic development, genetics, and the developments that occurred in these groups in different time periods, from primitive animals to higher animals on .the evolutionary ladder The practical lesson in comparative anatomy aims to introduce students to different models of living organisms within the vertebrate group, as well as anatomical sections of the internal systems and different tissues of different . groups of animals ● -	Course objectives
Learning and teaching strategies .9	

other skills related to) General and transferable skills (employability and personal development Developing skills by enabling the student to master - important biological information that can be used in the .future as a basis for other studies			Strategy		
Course structure .10					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

Course Description Form B497

Course name .1
Hormones and enzymes
Course code .2
B 497
Semester/Year
Second semester2025/2026
Date this description was prepared .
Second semester2024-2025
Available forms of attendance
weekly
Number of study hours (total) / Number of units (total)
2 hour theoretical + 4 hours practical 1

Name of the course administrator (if applicable) More than one name is (mentioned)					
Dr. Iqbal Abdulaziz Hazam Dr. Sondos Walid Khaled					
Course objectives .					
- Developing the student's ability to identify different types of glands and their secretions - Determine the effect of different hormones on the body's organs - Understanding how different hormones work			Course objectives		
Learning and teaching strategies .9					
- Lectures and multimedia presentations to deliver essential knowledge - Interactive discussions and debates to encourage critical thinking - Problem-based studies and learning for practical applications - Fieldwork and outdoor activities to closely monitor ecosystems - Laboratory work to conduct practical experiments and analyze data - Group projects and collaborative learning to promote teamwork and .diversity of perspectives			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

Questions and discussion =	Class lectures =	Theoretical / Definition of the Endocrine System Practical / Blood Sample Collection	Knowledge and understanding of lectures = = =	2 hours of theory and 2 hours of practical = = =	1,2,3
		Theoretical / Classification of hormones and how hormones work Practical / Definition of liver enzymes			5 ,4
		Theoretical / Activating and inhibiting hormones Practical / liver enzyme measurement			7 ,6 8,9
		Theoretical / Functions of Hormones Practical / Jaundice, its causes and symptoms			10,11 12,13
		Theoretical / Thyroid and Pituitary Gland			14,15

		Practical / Bilirubin measurement Theoretical / Ovarian hormones Practical/creatinine measurement Theoretical / Pancreas and Parathyroid Practical / Urea Test and Lecture Review			
Course Evaluation .					
Daily exams, reports, monthly exams					
Learning and teaching resources .					
endocrine system Hormones enzymes			Main references		
Endocrine glands, animal physiology			Recommended books and references		
			Internet sites		

Course Description Form B473

Course name : Hematology

Course code : 473 .	
: Semester/Year2025/2026	
2025-Date of preparation of this description : 12-9	
Available attendance forms : Weekly .	
Number of study hours (total) / Number of units (total): 30	
Name of the course administrator (if applicable) More than one name is . mentioned) : Mr. Dr. Sanaa Jamil Thamer + A.M.D. Sondos Walid	
: Course objectives	
• Understanding the basics of blood and its components • Interpretation of physiological processes associated with blood • Linking theoretical knowledge to empirical analysis • Recognizing blood disorders • Applying clinical analysis and interpretation skills • Developing research and independent learning skills	Course objectives

Learning and teaching strategies					
• ActiveLearning • Hands-on / Laboratory Learning • Interactive Lectures • Formative Assessment			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures/Class	• Introduction to Hematology • red blood cells • white blood cells • Platelets and clotting • Plasma and its components • blood analysis 1 • blood analysis 2 • Anemia 1 • Anemia 2 • white blood cell disorders • Platelet and clotting disorders • hereditary blood diseases • Introduction to Clinical Cases	• knowledge and understanding • Analysis and interpretation • Problem Solving and Clinical Application • Ethical and professional awareness	2 hours per week	15

		• General review and conclusions • exam			
Course Evaluation					
• Written Exams • Practical/Lab Exams • Projects& Reports					
Learning and teaching resources .					
Oxford Handbook of Clinical Haematology (2nd Edition)			book		
Rodak's Hematology: Clinical Principles and Applications (5th Edition)			book		
Color Atlas of Hematology: Practical Microscopic and Clinical Diagnosis			book		

Course Description Form B467

Course name : Medicinal .Mycology
467 Course code : B .
– Semester/Year : First .(2026-2025

2025-Date of preparation of this description : 9-13 .	
Weekly : Available attendance forms	
Number of study hours (total) / Number of hours 30 hours – Units 3 6	
Name of the course administrator (if applicable) More than one name is . mentioned) :Assistant Professor Dr. Hanan Abdul Redha Muhammad	
: Course objectives Introducing students to medicinal fungi , their diversity and importance in nature and human life. Understanding the scientific basis of fungal diseases. Providing students with practical skills in collecting , isolating, and preserving samples of pathogenic fungi. Training students on microscopic identification of yeasts and fungi and species identification using taxonomic keys. Developing students' scientific research skills and encouraging them to make careful observations and .conduct scientific analysis	
Providing the student with the skill of identifying pathogenic fungi and methods of diagnosing, transmitting and preventing them.	Course objectives

: Learning and teaching strategies

Interactive theoretical lectures

- a. Presentation of scientific material using slides and microscopic images.
- b. Encourage discussion and questions during the lecture to increase student engagement.

Laboratory-based learning

- c. Conducting practical experiments to isolate, grow and identify yeasts and fungi
- d. Use the microscope to study morphological characteristics and distinguish between species.
- e. Training students in the use of pure culture and sterilization techniques.

Use PowerPoint and video to explain lectures and conduct practical experiments

Strategy

Course structure

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures	Introduction to Medicinal Mushrooms Fungal diseases superficial fungal diseases skin fungi Ear infection Nail fungus	Knowing and understanding the types of medicinal fungi, the diseases they cause to humans, and methods of treatment and prevention	hours 2 per week	15

		Ringworm diseases White piedra Black piedra pityriasis versicolor Candidiasis Subcutaneous fungal diseases Mycoplasma Systemic fungal diseases Dimorphic fungi Antifungals			
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Course Evaluation

☐ Theory Exams –40-50 %

- Midterm Exam: .Measures the student's understanding of basic concepts about fungal diseases
- Final Exam: Covers all course material and includes essay questions, multiple choice, and diagrams.

☐ Practical Exams –25-30 %

- medicinal fungi Microscopic examination to identify different.
- fungi Evaluating the student's skill in isolating, culturing and diagnosing pathogenic.

☐ Assignments& Reports – 10-15%

- Writing reports on laboratory experiments.
- Short reviews of research or articles on pathogenic fungi.

Learning and teaching resources

• Diagnostic medical mycology	book
• medical mycology	book
• Clinical mycology	book

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Course Description Form 414

Course name .
Viruses
Course code
B414
Semester/Year
First - 2025\2026
Date this description was prepared
2025\9\11
Available forms of attendance
Live lecture in the hall
Number of study hours (total) / Number of units (total) .
125 3\
Name of the course administrator (if applicable) More than one name is (mentioned
Asst. Dr. Muhannad Abdul Wahab \ Prof. Dr. Haider Abdul Hussein, in charge Kazim

Course objectives					
- Introducing the student to scientific terms related to virology - Study the role of viruses in causing diseases and their effects on humans and other organisms - Explaining the basic components of viruses			Course objectives		
Learning and teaching strategies					
The main strategy encourages students to understand how to manage viral infections, acquire skills in diagnosing them, and collect viral samples. This will be achieved through interactive lessons and tutorials, and the study of simple experiments that include sampling activities that engage students in the .process of isolating and counting viruses			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Tests, Assignments, Projects/Lab, Report, Midterm Exam, Final Exam	Live lecture with modern learning methods	What is a virus and its basic components	How to deal .1 with viral infections	2	Week 1
		Virus appearance and similarity	How to .2 collect viral samples	2	Week 2
			Virus .3 isolation and separation	2	Week 3
			Acquire .4 skills to	2	Week 4
			innate immunity		2
				2	Week 6
				2	Week 7
				2	Week 8
		acquired immunity		2	Week 9
				2	Week 10

		viral pathogens	diagnose viral infections.	2	Week
				2	11
		Virus interaction with host	Use of viral diagnostic devices and tools.	.5	Week
				2	12
		First examination	Working to solve health problems	.6	Week
					13
		Virus classification			Week
					14
		DNA viruses			Week
					15
		RNA viruses			Week
					16
		single-stranded RNA(dsRNA) viruses			
		single-stranded RNA(ssRNA) viruses			
		Second examination			
		single-stranded RNA(ssRNA) viruses			
		Methods for diagnosing viruses			

Course Evaluation .	
Tests , assignments , projects/lab , report , midterm exam , final exam	
Learning and teaching resources .	
	Human Virology Book: Author: Prof. Dr. Haider Abdul Hussein Maklaf

Course Description Form B483

Course name
Animal tissue culture
Course code .
B 483
Semester/Year
First semester 2025/2026
Date this description was prepared .
1-9-2025
Available forms of attendance
weekly
Number of study hours (total) / Number of units (total) .
30 hour/ two units

(Name of the course administrator (if applicable) More than one name is mentioned					
Asst. Dr. Ziad Abdul-Kazem + Asst. Dr. Azhar Abdul-Jabbar					
Course objectives .8					
- Understand the basic information and knowledge in animal tissue culture applications. - Realizing the role of tissue culture in the development of other sciences - To enable the student to acquire scientific and practical skills in the field of cell culture. And animal . tissues			Course objectives		
Learning and teaching strategies .9					
- Direct explanation and use of slide show . technology . Use of images and models . Explain and discuss lectures - Enhance the student's ability to conduct . Research and reports			Strategy		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	theory	General introduction, history of the emergence and development of tissue culture Animal cells , the importance of animal cell culture technology and the progress made in it	Gain knowledge and understand the lecture content	hours 2	1

Questions and discussion	theory	How to establish a cell culture, cell culture conditions, how to maintain and preserve cell cultures	Gain knowledge and understand the lecture content	hours 2	2
Questions and discussion	theory	Shapes of cultured Biology cells - Cultured cells and cell life cycle	Gain knowledge and understand the lecture content	hours 2	3
Questions and discussion	theory	Animal Cell Culture Laboratory Requirements/ Biosafety Levels	Gain knowledge and understand the lecture content	hours 2	4
Questions and discussion	theory	Basics of handling cultured cells , demonstration of sterilization methods and how to set up the lab	Gain knowledge and understand the lecture content	hours 2	5
Questions and discussion	theory	How to culture and maintain cells, preservation using liquid nitrogen	Gain knowledge and understand the lecture content	hours 2	6

Questions and discussion	theory	First exam	Gain knowledge and understand the lecture content	hours 2	7
Questions and discussion	theory	Cell culture contamination: types diagnosis, and ‘ treatment methods	Gain knowledge and understand the lecture content	hours 2	8
Questions and discussion	theory	Cell culture media , importance of serum, culture of adherent and suspended cells	Gain knowledge and understand the lecture content	hours 2	9
Questions and discussion	theory	animal cell transplantation	Gain knowledge and understand the lecture content	hours 2	10
Questions and discussion	theory	General guidelines on how to preserve , monitor, maintain, and differentiate cells .	Gain knowledge and understand the lecture content	hours 2	11

Questions and discussion	theory	How to detect errors and what are the available treatment ? methods	Gain knowledge and understand the lecture content	hours 2	12
Questions and discussion	theory	Second exam	Gain knowledge and understand the lecture content	hours 2	13
Questions and discussion	theory	Cytotoxicity and applications of cell culture in various fields of science	Gain knowledge and understand the lecture content	hours 2	14
Course Evaluation .					
• Daily exams 10% • Reports 20% • Monthly exams 70%					
Learning and teaching resources .					
Culture of Animal Cells, A manual of basic techniques, 5th Edition by Freshney, RI. WILEY-LISS, 2005 (optional)			Required textbooks		
Invitrogen. (2010). Cell Culture Basics Handbook. ThermoFisher Scientific Inc., 1–61. https://doi.org/10.1093/chemse/bjt099			Main references (Sources(		

Cell culture training video https://www.youtube.com/watch?v=WGKoJRNKADY	the reviewer electronic , websites

Course Description Form B487

Course name : Enzymes and Yeasts
Course code : B487
(Semester/Year : First –)2025-2026
2025-Date of preparation of this description : 9-13
Weekly : Available attendance forms
Number of study hours (total) / Number of hours 30 hours – Units 3 .
Name of the course administrator (if applicable) More than one name is mentioned) Prof. Dr. Najwa Mohammed Jameel, Asst. Prof. Dr. Aseel Abdel Hamid
: Course objectives

Introduce students to enzymes , their diversity and importance in nature and human life. Understanding the scientific basis of yeasts (morphology, anatomical, taxonomic). Providing students with practical skills in collecting , isolating, and preserving yeast samples. Training students on microscopic identification of yeasts and species identification using taxonomic keys . Developing students' scientific research skills and encouraging them to make careful observations and .conduct scientific analysis	
Providing the student with the skill of identifying yeasts , fermentation methods, and diagnosing yeasts using genetic methods and their role in the body according to their locations in the body.	Course objectives
: Learning and teaching strategies Interactive theoretical lectures o. Presentation of scientific material using slides and microscopic images. p. Encourage discussion and questions during the lecture to increase student engagement. Laboratory-based learning q. Conducting practical experiments to isolate, grow and identify yeasts r. Use the microscope to study morphological characteristics and distinguish between species. s. Training students in the use of pure culture and sterilization techniques.	
Use PowerPoint and video to explain lectures and conduct practical .experiments	Strategy

Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures	Introduction to Enzymes and Yeasts Definition of enzymes and yeasts and their importance. General structure of enzymes and enzyme proteins. The role of yeasts in biological processes. Properties of enzymes and their mechanism of action Basic properties of enzymes. Mechanism of action of enzymes (key theory (and induced fit theory. Effect of environmental conditions on enzyme activity(pH , temperature Classification and naming of enzymes Produced from yeasts Major groups of enzymes and their functions. Types of inhibitors and their effect on enzyme activity. Produced from .yeast Applications of enzymes Use of enzymes in medicine (diagnostic (tests and therapy.	Knowledge and understanding of yeast types, fermentation methods, where they are found, and the enzymes .they produce	hours 2 per week	15

		Introduction to Yeasts and Industrial Microbiology Definition of yeasts and their characteristics. Use of yeasts in industry and biotechnology. Applications of enzymes in industry food and detergent) (industry. Factors affecting yeast growth. Use of yeasts in the production of alcohols and organic acids The role of yeasts in alcoholic fermentation. Production of organic acids such as lactic acid and acetic acid. Yeast production and uses in food Production of nutritional yeasts such as dry yeast and fresh yeast. Applications of yeasts in the bakery, beverage, and fermented food industries. Recent developments in the field of enzymes and yeasts Development of genetically modified enzymes. Genetic engineering techniques in improving the properties of yeast. The future of research in enzymes and yeasts.			
Course Evaluation .					

☐ Theory Exams –40-50 %

- Midterm Exam: .Measures the student's understanding of basic concepts about yeasts
- Final Exam: Covers all course material and includes essay questions, multiple choice, and diagrams.

☐ Practical Exams –25-30 %

- Microscopic examination to identify different yeasts.
- Evaluate the student's skill in performing the steps of isolation, development and diagnosis.

☐ Assignments& Reports – 10-15%

- Writing reports on laboratory experiments.
- Short reviews of research or articles on fungi.

Learning and teaching resources

Enzyme science	book
Enzymes and yeasts	book
Yeast biotechnology	book

Course Description Form B454

Course name : Genetic Engineering

Course code : B 454

Semester/Year : 2025/2026 .	
Date of preparation of this description : 12/9/2025 .	
Available attendance formats : hall and laboratory	
Number of study hours (total) / Number of units (total): 8 hours per week .	
Name of the course administrator (if applicable) More than one name is . mentioned) : Asst. Prof. Dr. Thaer Abdul Ali Dr. Suhaila Fadel Ali	
: Course objectives To introduce the student to the science of genetic engineering, its importance, and its overlap with other various sciences in the fields of medicine, agriculture, and industry, ensuring the development of treatments for many diseases, especially cancer, in addition to its use in improving agricultural crops and .benefiting from it in the manufacture of many medicines	
• Introducing the student to the scientific terms related to genetic engineering. • Study of the genetic characteristics of different living organisms.	Course objectives

- Study the role of DNA mutations in the emergence of cancerous diseases - Study how to repair harmful mutations. - into cells The study of gene transfer to give them traits that they do not have and to create hybrid genetic material.					
Learning and teaching strategies					
The main strategy encourages students to understand the important role of DNA in living organisms . This will be achieved through theoretical lessons, including explanatory videos , as well as through practical experiments involving DNA ‘extractionPCR amplification and ‘ linking it to a specific vector for the purpose of introducing it into new (host) cells to study the new traits in the acquired . cells			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Quick exam and monthly exam	theoretical	The importance of -1 studying genetic engineering	Understanding the lecture	per 2 lecture	Week 1
		gene Clone -2			Week 2
		DNA synthesis -3			Week 3
		Gene dissection -4			Week 4
		Gene expression -5			Week 5
					Week 6

		Cutting and joining -6 DNA molecules			Week 7 Week 8
		Monthly exam or -7			Week 9
		Clone vectors -8			Week 10
		Bacteriophages as -9 vectors			Week 11
		Insertion of DNA -10 molecules into cells			Week 12
		Selection of -11 hybrids			Week 13
		Methods of -12 diagnosing hybrids			Week 14
		Second monthly -13 exam			Week 15
		Applications of -14 genetic engineering			Week 16
		Cloning by -15 building a gene bank			
		Final Exam -16			

Course Evaluation

Quizzes	2	10% (10)
Assignments	2	10% (10)
Projects / Lab.	1	10% (10)
Report	1	10% (10)
Midterm Exam	1hour	10% (10)
Final Exam	2hours	50% (50)

Learning and teaching resources	
	1- Gene Cloning and DNA Analysis by BROWN, T.N 2- Principal Of Gene Manipulation and Genomic by S.B. Primrose and R. M. Twyman (7th ed 2006).
	.Ghaleb Hamza Al-Bakri. Principles of Genetic Engineering. University of Basra (Textbook) -2

Course Description Form B482

Course name .Physiology of parasites
Course code: B482
Semester/Year: 2024-2025 .
2025-Date of preparation of this description: 12-9
Available attendance forms: Weekly
Number of study hours (total) / Number of units (total): 30 hours .

Name of the course supervisor (if more than one name is mentioned): Prof. Dr. Adhraa Asst. Dr. Farhan Badan Abdul-Amir Aziz -	
1. Course objectives: Understanding the functions of the human body in general. 2. Illustrate the vital regulatory mechanisms that control body functions and parasites. 3. Linking the structure and functions of parasites to their effect on the host. 4. Interpretation of host physiological responses to parasites and infections. 5. Apply physiological knowledge in the clinical setting to understand, diagnose and treat parasitic diseases. .	
• Study of the effect of parasites on the .functions of organs and cells in the body • Analysis of the physiological mechanisms that parasites change during their development .within the host • Learn about the immune system's responses .to combat parasites • Understand the biological disturbances resulting from parasitic infestation and how they .relate to clinical symptoms • Applying physiological knowledge to develop therapeutic and preventive strategies .against parasitic diseases • Promote critical thinking in linking theoretical knowledge with clinical and veterinary .applications	Course objectives
Learning and teaching strategies .	
Active Learning Hands-on / Laboratory Learning Interactive Lectures Formative Assessment	Strategy
Course structure .	

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures/Class	• Introduction to Parasitic Physiology • Stages of parasitism: Contacting the host • Preparing for the host's entry • Install and stay within the host • Parasite escape strategies • Division of Protozoa: General Characteristics • Cytoplasm and nucleus of protozoa • Cysts and respiration in protozoa • Reproduction in protozoa • Feeding mechanisms in protozoa • Parasitic enzymes and their roles • Immune evasion and movement • Host invasion mechanisms	• knowledge and understanding • Analysis and interpretation • Problem Solving and Clinical Application • Ethical and professional awareness	hours 2 per week	15

		• Attachment and growth of parasites • Parasite transmission • parasitic infection • Disease caused by parasitic infection • Mechanisms of parasite penetration into hosts • Tissue damage caused by parasites to hosts •			
Course Evaluation .					
Written Exams Practical/Lab Exams Projects& Reports					
Learning and teaching resources .					
Foundations of parasitology ,			book		
Physiology of parasite			book		

Course Description Form B466

: Course name

agriculture tissues Vegetarianism	
: Course code	
B466	
:Semester /Year	
2025/2026	
: Date of preparation of this description	
2025/9/13	
: Available forms of attendance	
My presence	
:Number of study hours (total) / Number of units (total) .	
3 Theoretical hours: 8 practical hours x 15 weeks / 3 units	
Name of the course administrator (if applicable) More than one name is (mentioned	
Prof. Dr. Majid Abdullhamed Ibrahimand M.D. Zainab Jawad Madi	
Course objectives .9	
• Use Methods New in multiply plants • Identify the types Applications Biological • Ways multiply Flour For plants • Advantages and disadvantages of tissue culture • isolation And agriculture protoplast	Course objectives

Learning and teaching strategies					
Learn about biotechnology methods in plant tissue culture, the stages of tissue propagation, and the conditions used in .micropropagation			Strategy		
Course structure					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Midterm and daily exams and scientific reports	Lectures + practical experiments + educational photos and videos	introduction Historical *	Theoretical and practical lectures		
		For technologies Tissue culture For plants			
		Terminology technique *			
		agriculture tissues			
		Types *farms Botanical -			
		tissues Vegetarianism			
		And stages agriculture			
		tissues and cells		5	1
		Vegetarianism		5	2
		ingredients The middle *		5	3
		Food The preparer To		5	4
		multiply Flour		5	5
		the components *		5	6
		Membership For the		5	7
		middle Food		5	8
technique isolation And *	5	9			
agriculture protoplast	5	10			
isolation Protoplast -*	5	11			
Culture protoplast	5	12			
technique Hybridization *	5	13			
Physical	5	14			
technique agriculture *	5	15			
protoplast Hybrid					
Improvement genetic *					
And preservation genetic					
technique agriculture The *					
speaker And production					
plants Mono chromosome					
set					
technique Preservation *					
genetic					
and technology					
Vaccination and					
fertilization ex vivo					
Techniques production *					
plants Empty from diseases					
Course Evaluation					

marks for theoretical exam, 10 marks for daily exams, 20 marks for practical exam 20

Learning and teaching resources .

Phillips, G. C., & Garda, M. (2019). Plant tissue culture media and practices: an overview. *In Vitro Cellular & Developmental Biology-Plant* , 55 (3), 242-257.

Loyola-Vargas, V. M., & Ochoa-Alejo, N. (2018). An introduction to plant tissue culture: advances and perspectives. *Plant cell culture protocols* , 3-13.

Trigiano, R. N., & Gray, D. J. (2016). *Plant tissue culture, development, and biotechnology* . CRC Press.

Thorpe, T. A. (2007). History of plant tissue culture. *Molecular biotechnology* , 37 (2), 169-180.

Course Description Form B465

Course name . Serology

Course code: B465

Second semester/year2025/2026

Date of preparation of this description: 2025/9/12

Available forms of attendance . In person

Number of study hours (total) / Number of units (total)					
hours of theory + 2 hours of practical (3 units) 2					
(Course instructor name (if applicable) More than one name is mentioned					
.A .D Wafa Saadoun ShaniA. .M .D Marwan Yassin Abdel Majeed					
Course objectives					
The course aims to introduce serology , types of serum reactions, their nature, and methods of preparing immune serums. It also introduces antigen-antibody reactions and detects various pathological infections using serological tests and methods of detecting clinical cellular immunity, in addition to .introducing blood bank tests			Course objectives		
Learning and teaching strategies					
			Strategy • Theoretical and practical lectures • Use visual aids such as PowerPoint and special aids such as .models and shapes • Using the competitive competition method in the course material among students		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week

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Course Evaluation .

for the subject, two tests per semester, then the average for Theoretical and practical tests .both the theoretical and practical tests, in addition to the short tests

Evaluation method	Learning method	Name of unit/course or topic	Required learning outcomes	watches	week
Questions and discussion	Lectures/Class	Introduction to serology, mechanism and types of serum reactions, types of antiserums and their preparation		2z + 2a	1
Questions	Lectures	Antigen-antibody reactions, agglutination, hemagglutination, and sedimentation		2z + 2a	2
Questions	Lectures	Immunoelectrophoresis and western blotting		2z + 2a	3
Questions	Lectures	+ Complement fixation check labeling technique in immunoassay enzyme immunoassay		2z + 2a	4
		First test			5
Questions	Lectures	Radioactive binding technique		2z + 2a	6
Questions	Lectures	Fluorescent antibody technique + Nephelometry + completion assays		2z + 2a	7
Questions	Lectures	Clinical laboratory methods for detecting cellular immunity Flowcytometry Principle and Clinical Uses		2z + 2a	8
Questions	Lectures	Lymphocyte activation assays		2z + 2a	9
Questions	Lectures	Monocyte / macrophage assays		2z + 2a	10
Questions	Lectures	Neutrophil function assays		2z + 2a	11
Questions	Lectures	Blood banking and immunohematology		2z + 2a	12
		The second test			13
Questions	Lectures	Immunological mechanisms of blood transfusions		2z + 2a	14

Learning and teaching resources	
	:Books Immunology and serology 2020 Clinical immunology 2019
	Cellular immunology 2020

Course Description Form B413

Course name : Plant Pathology
Course code : B413 .
Semester/Year : 2025-2026 .

2025-Date of preparation of this description : 1-9 .	
Available attendance forms : Weekly attendance	
:Number of study hours (total) / Number of units (total) hours of theory + 2 hours of practical 3 weekly	
Name of the course administrator (if applicable) More than one name is : (mentioned Assistant Professor Muhannad Khalaf Muhammad Amin-1 Moataq Asst. Prof. Dr. Alaa Alaa El-Din -2	
Course objectives .	
• To introduce students to the basic principles of plant pathology and its .causes • Develop student understanding of interactions between plants and pathogens (fungi, bacteria, viruses, and .(nematodes • Providing students with knowledge about disease diagnosis,	Course objectives

epidemiology, and management .strategies					
Preparing students for practical application in plant disease identification, laboratory techniques, .and integrated disease management					
Learning and teaching strategies					
Lectures (theoretical): - Presenting basic concepts through structured lectures using PowerPoint presentations. - Use visual aids such as charts, plant disease pictures, and videos to enhance conceptual understanding. - Encourage interactive discussions and question-based learning during lectures. - Practical in the laboratory: - Practical training on isolating, culturing, and microscopically examining plant pathogens. - Applying Koch's postulates to prove pathogenicity. Observe and identify disease symptoms on live or preserved .specimens			Strategy		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Questions and discussion	Lectures	History of Introduction - Losses Plant Diseases - Caused by Plant Diseases	introduction	2n-2a	1

Questions and discussion	Lectures	Host range of pathogens the relationship - between host and pathogen	Plant pathology concepts	2n-2a	2
Questions and discussion	Lectures	Classification of plant diseases and some terms related to plant diseases	Plant pathology concepts	2n-2a	3
Questions and discussion	Lectures	The concept of genetic inheritance of resistance and pathogenicity in plant diseases	Plant pathology concepts	2n-2a	4
		Exam	exam	-	5
Questions and discussion	Lectures	Signs of the disease	Plant disease characteristic	2n-2a	6
Questions and discussion	Lectures	Symptoms of the disease	Plant disease characteristic	2n-2a	7
Questions and discussion	Lectures	Types of Pollination - Pollination	Onset of the disease	2n-2a	8
-	-	Exam	exam	-	9
Questions and discussion	Lectures	Nurse deployment tip	disease spread	2n-2a	10
Questions and discussion	Lectures	Disease and crop loss assessment	Plant disease losses	2n-2a	11
Questions and discussion	Lectures	Disease development in plants - stages of disease development	Stages of the disease	2n-2a	12
Questions and discussion	Lectures	How plants defend themselves against pathogens	plant defenses	2n-2a	13
Questions and discussion	Lectures	Structural defenses before and after injury	plant defenses	2n-2a	14
Questions and discussion	Lectures	Chemical Defenses - Chemical Defenses Before and After Plant Infestation - Disease Control	Plant defenses and disease control	2n-2a	15
-	-	Exam	exam	-	16

: Course Evaluation .

Theoretical and practical midterm and final exams

In addition to quick short exams and monitoring students' interaction with the .course through questions	
Learning and teaching resources	
1- Agrios, G. N. (2005). <i>Plant Pathology</i> (5th ed.). AcademicPress	
2- Schumann, G. L., & D'Arcy, C. J. (2010). <i>Essential Plant Pathology</i> (2nd ed.). APS Press.	

Course Description Form B412

Course name: Plant Physiology
Course code B412
Semester/ First Year//2025-2026
Date of preparation of this description : 9/2025 .
weekly Available forms of attendance .

credit hours 60 Number of units (total)/6Number of study hours (total)					
Name of the course administrator (if applicable) More than one name is . mentioned) Asst. Prof. Dr. Sajida Yassin, Asst. Prof. Dr. Shaza Mohammed					
Course objectives					
• The student's ability to understand of plant physiology and the principles . its relationship with other sciences • Study of the functions of plant . And plant cells organs			Course objectives		
Learning and teaching strategies .					
The method of explaining the lecture and -1 .discussion Encourage the student to conduct research -2 .and reports PowerPoint . presentations			Strategy		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Daily and monthly tests	Theoretical and practical	Introduction to the definition of plant physiology and the study of the properties of water	Student understanding of the lesson	2n+2a	the first
	Theoretical and practical	Types of solutions Properties of colloidal solutions	Student understanding of the lesson	2n+2a	the second
				2n+2a	the third

		Study of the movement and transport of water and types of stress relations) (aquatic)	Student understanding of the lesson		
Daily and monthly tests	Theoretical and practical	Methods of measuring the potential of solutions and cells First exam Methods of measuring the potential of solutions and cells	Student understanding of the lesson	2n+2a 2n+2a 2n+2a	The wonderful Fifth Sixth
Daily and monthly tests	Theoretical and practical	Absorption and mineral nutrition Water rise in wood tissues and the forces affecting it Water ascent in xylem tissue and phloem transport	Student understanding of the lesson Student understanding of the lesson	2n+2a 2n+2a 2n+2a	Seventh The eighth Ninth
Daily and monthly tests	Theoretical and practical	Second exam Transpiration, tearing, and the mechanisms of closing and opening stomata Photosynthesis and carbon dioxide fixation pathways	Student understanding of the lesson	2n+2a 2n+2a 2n+2a	tenth eleventh twelfth
Daily and monthly tests	Theoretical and practical	photorespiration Carbohydrate metabolism plant hormones	Student understanding of the lesson	2n+2a 2n+2a 2n+2a	thirteenth fourteenth fifteenth

Theoretical and practical midterm and final exams : Course Evaluation					
Learning and teaching resources .					
Abdul Hadi Jawad and Abdul Azim Kazim 1987			Plant physiology		
by Meyer et al.			Introduction to Plant Physiology		

Course Description Form B468

Course name
Biological control
Course code
B468
2025/2026 Semester/Year .
First + Second
Date this description was prepared

2025-9-12					
Available forms of attendance .					
Attendance in the hall and laboratory					
Number of study hours (total) / Number of units (total)					
30 hour of theory + 45 hours of practical work. Number of units: 3 1					
Name of the course administrator (if applicable) More than one name is (mentioned					
D. Nasser Abdel Ali Halifi					
Course objectives					
• Identification of biological enemies and the possibility of using them as alternatives to pesticides • •			Course objectives		
Learning and teaching strategies					
• Usingppt lectures for clarification Use of illustrations			Strategy		
Course structure .					
Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
Monthly exams and tests	Lectures	Lectures	Introduction to the science of resistance to biological enemies	2	1
			Mechanism of biological resistance	2	2
			The emergence of insectivorous insects	2	3
			Parasites	2	4
				2	5
				2	6
				2	7
				2	8
				2	9

			Bioactivity of insect parasites predators bacterial resistance Using bacteria in resistance nematodes Viruses Fungi exam Grant	2 2 2 2 2 2	10 11 12 13 14 15
			Evaluations are based on .exams and discussions	The course is evaluated according to its importance in obtaining learning in alternatives to chemical .pesticides	11- Course Evaluation
			Books and scientific resources for the course 1- Biological pest control By the author Ahmed Al- Zalbadi 2- All sources available on the Internet	Learning and teaching resources	12-

Course Description Form B379

Course name: Molecular Biology
Course code: B 379 .

2026 - Semester/Year: First Semester - 2025	
Date of preparation of this description: 09/13/2025	
:Available forms of attendance .	
Number of study hours (total) / Number of units (total): 15 hours / 2 study units	
Name of the course supervisor: Prof. Dr. Adnan Issa Al-Badran + Asst. Prof. Dr. Taleb . Abdul Majeed Ramadan	
Course objectives	
• Nucleic acid synthesis and packaging • ‘Gene conceptDNA replication ‘ • Gene cloning and translation • regulation of gene expression • DNA mutation and repair	Course objectives
Learning and teaching strategies .	
	Strategy
Course structure .	

Evaluation method	Learning method	Name of unit or topic	Required educational outcomes	watches	week
		Nucleic acid synthesis			
		DNA packaging			
		Gene concept			
		DNA replication			
		Problems and solutions of the multiplication process		2	1
				2	2
				2	3
				2	4
				2	5
		Gene cloning in prokaryotes		2	6
				2	7
				2	8
		Gene cloning in eukaryotes		2	9
				2	10
				2	11
		Gene cloning in prokaryotes		2	12
				2	13
		Gene cloning in eukaryotes		2	14
				2	15
		Types of RNA			
		gene translation			
		The role of ribosomes in protein synthesis			
Course Evaluation .11					

Learning and teaching resources .	
	Principles of molecular genetics -1 Molecular Biology-2