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

Academic Program and Course Description Guide

2025

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

Academic Program Description Form

University Name: Wasit
Faculty/Institute: College of Education for Pure Science
Scientific Department: Biology
Academic or Professional Program Name: Bachelor
Final Certificate Name: Bachelor of Education in Biological Science
Academic System: Annual
Description Preparation Date: 2023-2024
File Completion Date:

Signature:
Head of Department Name:
Prof. Ali Fayadh Barghouth
Date: 10/3/2025

كلية التربية للعلوم الصرفة
قسم علوم الحياة

Signature:
Scientific Associate Name:
Assist. prof. Mahdi Alwan Abood
Date: 10/3/2025

Assist Prof. Dr.Mahdi Alwan Al-Quraishi
Asst Dean for Academic Affairs
& Graduate Studies

The file is checked by Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Lec. Saja Hussain Dilfy
Date: 10/3/2025
Signature:

جامعة واسط
الاداء الجامعي
كلية التربية للعلوم الصرفة

Prof. Ali Hussein Shuaa
Dean
11/3

Prof.
Dr.Ali H. Shuaa Al-Taie
Dean of Education College
for Pure Science

Approval of the Dean

1. **Program Vision**
The Mathematics Department aspires to leadership and excellence in various fields of mathematics, aiming to achieve quality standards and programmatic accreditation that distinguish it academically and scientifically at the local, Arab, regional, and global levels. It seeks to elevate the performance level across various fields of mathematics to rank among the top educational departments in Iraq in scientific analysis. Additionally, it is imperative to keep pace with the advancements in higher education by providing the best services and facilities for academic staff, offering training and development opportunities for technicians and administrators, and involving students in activities that enhance their skills, fostering creativity and innovation.

2. **Program Mission**
The Mathematics Department aims to prepare individuals to become educators and mentors equipped with theoretical and applied knowledge in various fields of mathematics, possessing critical thinking skills and scientific research abilities in different branches of mathematics to ensure sustainable human development in accordance with the requirements of the era. The department seeks to produce graduates with logical scientific thinking and scientific research skills in various branches of mathematics. Additionally, it strives to provide nationally-supported outputs with sciences and knowledge contributing to the development of our beloved country. This is achieved through offering the best modern scientific techniques for educational services to students at the university and higher education levels, and working on developing skills that enable them to integrate into all fields quickly. Moreover, the department aims to enhance the level of educational and administrative processes by providing the best performance, speed, and accuracy in achievement. It supports scientific research activities and cognitive interaction

to maintain continuous communication with scientific and cultural developments worldwide, meeting the evolving needs of the community to achieve comprehensive human development.

3. Program Objectives

1. Preparing teaching staff to support middle, secondary, and preparatory schools, equipped with the necessary teaching skills for mathematics through departmental scientific programs and activities.
2. Training academic personnel in the field of postgraduate studies, specifically Master's degrees in various branches of mathematics, to meet the requirements of the job market and support the educational and pedagogical process in our beloved Iraq.
3. Preparing qualified students to teach students in middle and preparatory schools.
4. Equipping students with pedagogical methods specialized in teaching.
5. Ensuring that graduating students are proficient in the fundamental concepts of mathematics.
6. Ensuring that students are qualified to pursue higher studies to supply universities and institutes with teaching staff.
7. Activating mechanisms for mutual cooperation and openness to various local, regional, and international universities and educational institutions in a manner that encompasses all components of the educational system.

4. Program Accreditation

No

5. Other external influences

Is there a sponsor for the program?

6. **Program Structure**				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	**Reviews***
Institution Requirements	**39**	**190**	**%100**	**Specialized+optinal**
College Requirements	**15**	**52**	**%38.49**	**Specialized**
Department Requirements	**19**	**120**	**%48.7**	**Specialized+optinal**
Summer Training	**1**	**4**	**%2.56**	**Specialized**
Other	**1**	**4**	**%2.56**	**Specialized**

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

7. Program Description					
Year/Level	**Course Code**	**Course Name**	**Credit Hours**		
			Theoretical	**Practical**	
first stage		General Biology	2	2	
first stage		Cell biology	2	2	
first stage		Plant anatomy	2	2	
first stage		General Chemistry	1	2	
first stage		Geology	1	--	
first stage		Computer Science	--	2	

first stage		Educational Psychology	2	--	
first stage		Human rights	1	--	
first stage		Arabic language	1	--	
first stage		Foundation Education	2	--	
first stage		English Language	1	--	
Second stage		Invertebrates	2	2	
Second stage		Plant taxonomy	2	2	
Second stage		Histology	2	2	
Second stage		Embryology	2	2	
Second stage		Biochemistry	2	2	
Second stage		Computer science	--	2	
Second stage		Secondary education And educational administration	2	--	
Second stage		Biostatistics	1	2	
Second stage		Educational Psychology	2	--	
Second stage		English Language	1	--	
Second stage		Arabic Language	1	--	

Second stage		Baath Party crimes	1	--	
Third stage		Ecology and pollution	2	2	
Third stage		Entomology	2	2	
Third stage		Comparative anatomy of chordata	2	2	
Third stage		Genetics	2	2	
Third stage		Mycology	2	2	
Third stage		Algae	2	2	
Third stage		Scientific research Curriculum and philosophy	2	--	
Third stage		Curriculum and methods of teaching	2	--	
Third stage		Educational counselor and Psychological health	2	--	
Fourth stage		Parasitology	2	2	
Fourth stage		Animal physiology	2	2	
Fourth stage		Molecular Biology	2	2	
Fourth stage		Plant physiology	2	2	
Fourth stage		Microbiology	2	2	
Fourth stage		Immunology	1	2	

Fourth stage		Viewing and application	2	--	
Fourth stage		Measuring and evaluation	2	--	
Fourth stage		Scientific research Curriculum and philosophy	2	--	

8. Expected learning outcomes of the program	
Knowledge	
A1: The student gets to know the biological scientific concepts of plants A2:For the student to become familiar with the biological scientific concepts of animals A3: For the student to become familiar with the behavioral scientific concepts associated with the learning process of microbiology	A1: Students should acquire in-depth knowledge in various fields of life sciences such as biology, genetics, botany, zoology, and microbiology. A2: Students must gain a deep understanding of how to utilize and utilize laboratory equipment A3: Students should become familiar with the behavioral science concepts associated with the learning process of immunity A4: Students must acquire the skills to conduct some laboratory analyses A5: Preparing trained and qualified cadres to work in educational institutions. A6: The student learns to use various methods in teaching.
Skills	
B1: Teaching skill in biology B2: The student must have the ability to describe models and laboratory environments.	

B3: The student should be able to understand the basics of the operation of laboratory equipment used in examination and evaluation. B4: The student must have the ability to link causes to natural causes. B5: The student's knowledge of measurement and evaluation methods and modern teaching methods in life sciences. In addition to enabling the student to know the theories related to the ages of students in the secondary school stage. B6: Knowing the goals and principles of the art of teaching life sciences.

Ethics	
J1: Adherence to professional ethics. J2: Promoting innovation and creativity J3: Analytical thinking and problem solving J4: Communication and teamwork	J1: Students are encouraged to understand and apply professional ethical values in the field of information technology and computer science, such as honesty, respect, responsibility, privacy protection, and security. J2: Students are encouraged to innovate and create in the field of life sciences J3: Sstudent's must have the ability to understand the study material J4: Students should be able to communicate and collaborate effectively with other students and work in multidisciplinary teams effectively

9. **Teaching and Learning Strategies**
The strategies and teaching methods adopted in implementing the program include: 1.Active learning and participation.

2.Project learning.
3. Cooperative learning.
4- Problem-based learning.
5. Lecture method using technology for learning.
6. Stimulate curiosity and exploration.
7. Laboratory teaching strategies.

10. Evaluation methods

1. Monthly exams.
2. Daily quizzes.
3. Group projects.
4. Reports.

11. Faculty

Faculty Members

Academic Rank	Specialization		Number of the teaching staff	
	General	Special	Staff	Lecturer
Akmam ali habeeb	Biology	Zoology	yes	
Alaa Naji Salih	Veterinary Medicine and surgery	Histology and Anatomy	yes	
Ali Fayyadh Bargooth	Veterinary Medicine	Animal Histology	yes	
Alyaa Abdukridha Hanash	Biology	zoology	yes	
Amjaad Majeed Ali	Biology	Medical Microbiology	yes	
Asia Naaji Obaid	Biology/ plant	Mycology	yes	

Duha Abdul Hadi Hamza	Biology	Zoology	yes	
Dunya talib mahdi al-rawdhan	Biology	Medical microbiology	yes	
Firas Rahi Handhal Al-Alhachami	Biology	Genetics	yes	
Firas Adnan Hussein	Biology	Microbiology	yes	
Haider Abbas Fadhel	Agricultural Sciences	Soil Microbiology	yes	
Haider Ali Nasir	Veterinary Medicine	Embryo	yes	
Hawraa salah saad	Biology	zoology	yes	
Hayder Atta Abdul-Jabbar Hasan	Biology	Zoology	yes	
Hazim Jasib Sahaib	Teaching curricula and methods	Chemistry curricula and teaching methods	yes	
Huda Badr Hussein	Biology	Zoology	yes	
Huda Hadi Raheem	Biology	Zoology	yes	
Intisar Hussein Ahmed	Biology	Genetics	yes	
Israa Jalil Hussein	Biology/ Zoology	Zoology	yes	
Marwa Mahdi Khalaf	Zoology	Cytofentic	yes	
Marwa Thaer Abed	Biology	Zoology	yes	

marwan saleh mahdi	Biology	Biotechnology	yes	
Mazin Maky Thamer	Master of science/ Biology	Immunity	yes	
Mohammed jssim abd ulamer	Curricula and methods of teaching life sciences	Curricula and methods of teaching life sciences	yes	
Mustafa Kareem Qasim	Biology	Microbiology	yes	
Mustafa Naeem Nuhair AL_Sarray	Medical Microbiology	Immunology	yes	
Nabaa Abass Hasan	Biology	Zoology	yes	
Nasreen Habib Humaidan	Biology	Animal physiology	yes	
Noor Naeem Shakir	Biology	Zoology /parasite	yes	
Rana Jaafar Abed	Biology Science	Zoology	yes	
Rawaa mohsin kuhdhair	Educational and psychology science	Education psychology	yes	
Rehab Abdulrazzaq Abdulhassan	Biology	Zoology	yes	
Riyadh Radhi Mohammed	Chimestry	Analysis Chimestry	yes	
Sada Jassim Abdul Ameer	Biotechnology	Cytogenetic	yes	
Saja Hussain Dilfy	Biology	Zoology/Histology	yes	

Sajjad jawad kadhim	Zoology	Histology	yes	
Shahad kadhim jaafar	Biology	Animal science	yes	
Shifaa Ali Abdulmohsin	Biology	Fungi	yes	
Suadad Breesam Khari	Biology	Zology	yes	
Tayseer shamran atheab	Biology	Zoology	yes	
Zafir Hassan Ghali	Biology	Molecular genetics	yes	
Zahra karem hady	Biology	Zoology	yes	
Zahraa Naeem khalaf	Biology	Zoology	yes	
Zahraa Eisaa Sadeq	Microbiology	Immunity	yes	
Zainab Kadhim Hashim	Biology	Parasitology	yes	
Rahab Abdul Hussein Dabish	Chemistry	Chemistry	yes	
Rasha Amer Hassoun	Biology	Immunology		
Abbas Hadi Abdul Sayed	Educational and Psychological	Sciences Teaching Methods		
Rasul Aziz Nasser	Biology	Microbiology		
Ahmed Abdullah Radhi	Agricultural Sciences	Agricultural Sciences		

Salwan Jalil Salman	Educational Sciences	English Language		
Haider Muhammad Ali Awad	Biology	Zoology		

Professional Development
Mentoring new faculty members
1- Development and Training Programs 2- Guidance and Mentoring Programs 3- Participation in Professional Learning Communities 4- Academic Counseling
Professional development of faculty members
1- Needs Analysis 2- Implementation of Training Programs and Workshops 3- Application of Modern Teaching Strategies 4- Monitoring and Performance Evaluation 5- Feedback Evaluation and Support

12. **Acceptance Criterion**
1. central admission **2. Parallel Admission** **3. Admission for Top Teachers**

13. **The most important sources of information about the program**
• Sectorial Committee • Ministerial Committees for Curriculum Development • University and College Website • Ministry of Higher Education and Scientific Research Website

14. Program Development Plan
Applying accreditation standards for educational colleges.

Program Skills Outline															
				Required program Learning outcomes											
Year/ Level	**Course Code**	**Course Name**	**Basic or optional**	**Knowledge**				**Skills**				**Ethics**			
				A 1	**A2**	**A3**	**A4**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**C3**	**C4**
First	B11	General Biology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	C11	Cell biology	**Basic**	√	√	√	√								
	P11	Plant anatomy	**Basic**	√	√	√	√					√	√	√	√
	CH11	General Chemistry	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	G11	Geology	**Optional**					√	√	√	√				
	COMI47-1	Computer Science	**Optional**	√	√	√	√								
	108CsEs	Educational Psychology	**Basic**	√	√	√	√								
	110CsHr	Human rights	**Optional**	√	√	√	√								

	107CsAl	Arabic language	**Basic**	√	√	√	√									
	105CsBb	Foundation Education	**Basic**	√	√	√	√									
	112BSS	Biosecurity and Safety	**Basic**	√	√	√	√	√	√							
	106CsEl	English Language		√	√	√	√									
Second	V22	Invertebrates	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	√
	P22	Plant taxonomy	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	
	H22	Histology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	
	E22	Embryology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	
	CHBI22	Biochemistry	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	√
	COMI47-2	Computer science	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	√
	216CsEm	Secondary education And	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√	√

		educational administration														
	S22	Biostatistics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	217CsDp	Educational Psychology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	215CsEl	English Language	**Optional**					√	√	√	√				
	221CsAl	Arabic Language	**Optional**					√	√	√	√				
	222CsBc	Baath Party crimes	**Optional**					√	√	√	√				
Third	O33	Ecology and pollution	**Basic**					√	√	√	√				
	133	Entomology	**Basic**					√	√	√	√				
	N33	Comparative anatomy of chordata	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	G33	Genetics	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√

	F33	Mycology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	L33	Algae	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	323CsAp	Scientific research Curriculum and philosophy	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	324CsCt	Curriculum and methods of teaching	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	323CsMP	Educational counselor and Psychological health		√	√	√	√								
	R44	Parasitology	**Basic**	√	√	√	√								
	A44	Animal physiology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	B44	Molecular Biology	**Optional**	√	√	√	√	√	√	√	√	√	√	√	√

	P44	Plant physiology	**Basic**									√	√	√	√
	M44	Microbiology	**Basic**									√	√	√	√
	I44	Immunology	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	429CsP	Viewing and application	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	428CsMe	Measuring and evaluation	**Basic**	√	√	√	√	√	√	√	√	√	√	√	√
	430CsPe	Scientific research Curriculum and philosophy	**Optional**	√	√	√	√								

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

Course Description Form

1. Course Name:
Biology/ theoretical part
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Daily attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours (2 hours theoretical + 2 hours practical) / Number of units (6 units)
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Dr. Saja Hussain Dilfy Email: sdilfy@uowasit.edu.iq Name: Mazin Maky Thamer Email: mazin.maky@uowasit.edu.iq

8. Course Objectives	
Course Objectives	1- Distance from industry: (a) Provides the artist with commercial ideas, data and basic topics of this subject in terms of its emergence and its role in contributing to the development of technology. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional methods: (a) Helping the student develop his abilities and inclinations to understand the topics of this subject. (b) Developing the student's attitudes and interests towards understanding the basic concepts of this subject and employing them in the field of education (teaching). 3- Psychomotor methods (skills): (a) Developing the student's ability to master the skill of fact-finding and the basics and principles of this subject to practical administrative practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in the field of work after graduation.
9. Teaching and Learning Strategies	
Strategy	-Thinking and Discussion Method - E-learning (Explanatory Videos and Electronic Tests) - Practical Tests

10. Course Structure (Theoretical)					
Week	**Hours**	**RequiredLearning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	Knowledge	**Introduction to Biology** _Introduction toBiology _The development of biology _The importance of biology _Branches of biology	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
2	2	Knowledge	**Characteristics of life And development** -Definition of life qualities	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
3	2	Knowledge	**The chemical basis of life** - Organic life molecules	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
4	2	Knowledge	**Cell structure**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
5	2	Knowledge	**Energy for the cell and life**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
6	2	Knowledge	**Classification of living things** -Historical stages -Classification systems -Plant and animals concept classification -Gender concept	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
7	2		**First semester exam**		
8	2	Knowledge	**Classification of living things** - Divisions and branches of the animal kingdom	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
9	2	Knowledge	**Reproduction and growth** -Reproduction and growth in animals	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
10	2	Knowledge	**Reproduction and growth** -Reproduction and growth in plants	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
11	2	Knowledge	**Hormonal Coordination** -Coordination in animals	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
12	2	Knowledge	**Hormonal Coordination** -Coordination in plants	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
13	2	Knowledge	**Biological behavior** Nervous system and behavior Innate and learned behavior	Using whiteboard and data show and E-learning	Exams and quick exams and assignments

14	2	Knowledge	**Biological behavior** Hierarchical dominance in groups Animal Orientation in time and place Mass movement and migration	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
15	2	Knowledge	**Evolution** -Theories of evolution -Evolution of low-lying animals -Evolution of vertebrates	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
16	2	Knowledge	**Biodiversity and conservation** -Bacteria -Fungi	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
17	2	Knowledge	**Biodiversity and conservation** -Animals -Plants	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
18	2	Knowledge	**Animal structure and functions** -Body tissues -Body systems	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
19	2	Knowledge	**Body systems** **Skeletal System**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
20	2	Knowledge	**Integumentary system**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
21	2	Knowledge	**Circulatory system**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
22	2	Knowledge	**Blood**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
23	2	Knowledge	**Digestive system**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
24	2	Knowledge	**Urinary system**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
25	2	Knowledge	**Plant structure and functions**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
26	2	Knowledge	**Plant Anatomy and Growth**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
27	2	Knowledge	**Human impact on the biosphere**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments

28	2	Knowledge	**Ecology** -Some concepts about the environment and its sources of pollution -Ecosystem -Biogeochemical cycles -Carbon Footprint	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
29	2	Knowledge	**Carbon Footprint**		
30	2	**Second semester exam**			

Course Structure (Practical)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	**Introduction to General Biology** - Tools and Equipment Used In Educational Laboratories - Types of Microscopes and Their Structure	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	**The Cell** - Types of Cells - Components of the Animal Cell	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	**- Tissues** - Epithelial Tissues - Connective Tissues - Muscle Tissues - Nervous Tissues	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	**Tissues** - Epithelial Tissues - Connective Tissues - Muscle Tissues - Nervous Tissues	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	**Tissues** - Epithelial Tissues - Connective Tissues - Muscle Tissues - Nervous Tissues	Using the pen and board and data show	Exams and quick exams and assignments
6	2		First Semester Exam		
7	2	The student learns what was presented in the lecture	**Taxonomy** - Classification of Living Organisms	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	**Invertebrates**	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	**Cockroach** - Cockroach Anatomy	Using the pen and board and data show	Exams and quick exams and assignments

10	2	The student learns what was presented in the lecture	**Cockroach** - Cockroach Anatomy	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	**Phylum Chordata** - General characteristics of chordates - Classification of chordates	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	**Frog anatomy**	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	**Frog anatomy**	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	**The Plants** - The Plant Cell - Characteristics of the Plant Cell - Life Cycle of the Plant Cell - Parts of the Plant - Benefits of Plants	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	**The Plants** - The Plant Cell - Characteristics of the Plant Cell - Life Cycle of the Plant Cell - Parts of the Plant - Benefits of Plants	Using the pen and board and data show	Exams and quick exams and assignments
16	2		**Second Semester Exam**		

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily and monthly oral exams. And editing, discussing and evaluating reports and seminars , etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of Zoology Book
Main references (sources)	Biology 1, 2: Committee from the Ministry of Higher Education and Scientific Research.
Recommended books and references (scientific journals, reports...)	- Elementary text-book of zoology - Concepts of Biology by Samantha Fowler
Electronic References, Websites	- https://www.muhadharaty.com

Course Description Form

1. Course Name:
Cell biology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 / 6
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Intisar Hussain ahmed Dr.Asia naji obaid Email: asia @ uowasit.edu.iq Name:Marwa Mahdi khalaf Email: m.khalaf@uowasit.edu.iq
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**
9. Teaching and Learning Strategies	
Strategy	1.Thickening and discussion method 2.learneaning explanatory videos and electronic test

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluationmethod**
1	2	The student learns what was presented in the lecture	Introduction of cell biology	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Type of cell	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	The microscope types	Using the pen and board and data show	Exams and quick exams and assignments
4-6	2	The student learns what was presented in the lecture	Cell size & content	Using the pen and board and data show	Exams and quick exams and assignments
7-9	2	The student learns what was presented in the lecture	Cytoplasm of plant &animal cell	Using the pen and board and data show	Exams and quick exams and assignments
10-12	2	The student learns what was presented in the lecture	Ribosomes &mitochondria	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	First semester exam	Using the pen and board and data show	Exams and quick exams and assignments
14-17	2	The student learns what was presented in the lecture	Cell wall and chloroplast	Using the pen and board and data show	Exams and quick exams and assignments
18-20	2	The student learns what was presented in the lecture	Central vacuoles	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Type of endoplasmic reticulum	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Golgi apparatus	Using the pen and board and data show	Exams and quick exams and assignments
23-25	2	The student learns what was presented in the	Lysosome	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
26	2	The student learns what was presented in the lecture	Cytoskeleton	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Flagella and cilia	Using the pen and board and data show	Exams and quick exams and assignments
28-29	2	The student learns what was presented in the lecture	Extracellular matrix of animal cells	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	Second semester exam	Using the pen and board and data show	Exams and quick exams and assignments

Practical course structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	The Microscope Types	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Type of Cell	Using the pen and board and data show	Exams and quick exams and assignments
3-5	2	The student learns what was presented in the lecture	Chemical Composition of The Cell	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	The Cell Membrane	Using the pen and board and data show	Exams and quick exams and assignments
7-9	2	The student learns what was presented in the lecture	Type of Transport Across Cell Membrane	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	First Semester Exam		
11-13	2	The student learns what was presented in the lecture	The Blood Type	Using the pen and board and data show	Exams and quick exams and assignments
14-16	2	The student learns what was presented in the lecture	The Nucleus	Using the pen and board and data show	Exams and quick exams and assignments
17-20	2	The student learns what was presented in the lecture	The Cell Division	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	The Endoplasmic Reticulum	Using the pen and board and data show	Exams and quick exams and assignments

22	2	The student learns what was presented in the lecture	Ribosome	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Golgi Apparatus	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Mitochondria	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	The Plastid	Using the pen and board and data show	Exams and quick exams and assignments
26-29	2	The student learns what was presented in the lecture	The Laboratory techniques used in preparing cells	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	Second semester exam		

11.course evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Jeff Hardin and Gregory Bertoni .(2016) Becker´s world of the cell.9th edition .Pearson 2. Stephen R. Bolsover, Jeremy S. Hyams, Elizabeth A. Shephard, Hugh A. White and Claudia G. Wiedemann. (2004) CELL BIOLOGY. A Short Course. 2nd edition WILEY-LISS AJOHN & SONS, INC 3. Alberts B., Johnson A., Lewis J., Raff M., Roberts K. and Walter P. (2002). Molecular biology of the cell .4th edition, 4 .Madigan MT, Martinko JM & Parker J (2000) Brock's Biology of Microorganisms, 9th edn. Englewood Cliffs, NJ: Prentice Hall. 5 .Yusupov MM , Yusupova GZ , Baucom A . et al. Crystal structure of the ribosome at 5.5Å resolution. Science. (2001);292:883–896 6 .Kendrick, Karolyn (1 January 2010). Chemistry in Medicine. Benchmark Education Company. p. 26 6.Griffiths, Anthony J.F.; Miller, Jeffrey H.; Suzuki, David T.; Lewontin, Richard C.; Gelbart, William M. (2000). "Bacterial conjugation". An Introduction to Genetic Analysis. 7th Edition.
Electronic References, Websites	- https://www.muhadharaty.com

Course Description Form

1. Course Name:
Plant Anatomy
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Firas Rahi Handhal Email: fhabdhal@uowasit.edu.iq Name: Zahra karem hadi Email: std2022304.zahraaatya@uowasit.edu.iq
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**
9. Teaching and Learning Strategies	
Strategy	**Developing the student's ability to know the different plant tissues, organs and cells and the functions they perform.**

10. Course Structure (Theoretical)					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	Knowledge	Introduction to plant anatomy and definition of the plant body	Using the pen and board and data show	Exams and quick exams and assignments
2	2	Knowledge	Plant cell concept - cell wall	Using the pen and board and data show	Exams and quick exams and assignments
3	2	Knowledge	Components of the plant cell - Protoplast	Using the pen and board and data show	Exams and quick exams and assignments
4	2	Knowledge	A detailed study of the cell wall The layers that make up the wall and a study of their chemical composition	Using the pen and board and data show	Exams and quick exams and assignments
5	2	Knowledge	Physical properties of the cell wall	Using the pen and board and data show	Exams and quick exams and assignments
6	2	Knowledge	Plant tissues / classification of plant tissues	Using the pen and board and data show	Exams and quick exams and assignments
7	2	**Exam**	**Exam**	**Exam**	
8	2	Knowledge	Meristematic tissues, detailed study / classification, characteristics	Using the pen and board and data show	Exams and quick exams and assignments
9	2	Knowledge	Meristematic tissues / Theories related to meristems in the stem and root	Using the pen and board and data show	Exams and quick exams and assignments
10	2	Knowledge	Perennial tissues / A comprehensive and detailed study	Using the pen and board and data show	Exams and quick exams and assignments
11	2	Knowledge	Connective tissue, epidermis and periderm	Using the pen and board and data show	Exams and quick exams and assignments
12	2	Knowledge	Parenchyma tissue	Using the pen and board and data show	Exams and quick exams and assignments
13	2	Knowledge	Collenchyma tissue	Using the pen and board and data show	Exams and quick exams and assignments
14	2	Knowledge	Sclerenchyma tissue	Using the pen and board and data show	Exams and quick exams and assignments

15	2	Knowledge	Xylem tissue and phloem tissue	Using the pen and board and data show	Exams and quick exams and assignments
16	2	Knowledge	Secretory tissues and structures	Using the pen and board and data show	Exams and quick exams and assignments
17	2	Knowledge	Internal structure of plant body organs	Using the pen and board and data show	Exams and quick exams and assignments
18	2	Knowledge	Study of internal anatomy of primary and secondary root	Using the pen and board and data show	Exams and quick exams and assignments
19	2	Knowledge	Study of internal anatomy of primary and secondary stem	Using the pen and board and data show	Exams and quick exams and assignments
20	2	Knowledge	Study of internal anatomy of leaf	Using the pen and board and data show	Exams and quick exams and assignments
21	2	Knowledge	Study of the internal anatomy of the flower	Using the pen and board and data show	Exams and quick exams and assignments
22	2	Knowledge	Study of the internal anatomy of the seed	Using the pen and board and data show	Exams and quick exams and assignments
23	2	Knowledge	Internal structure of the plant	Using the pen and board and data show	Exams and quick exams and assignments
24	2	Knowledge	Internal structure of the plant and its relationship to the environment	Using the pen and board and data show	Exams and quick exams and assignments
25	2	Knowledge	Study of the effect of the environment on the internal structure of different plants	Using the pen and board and data show	Exams and quick exams and assignments
26	2	Knowledge	Study the effect of the environment on the internal structure of different plants (desert plants)	Using the pen and board and data show	Exams and quick exams and assignments
27	2	Knowledge	Study the effect of the environment on the internal structure of different plants (Aquatic plants)	Using the pen and board and data show	Exams and quick exams and assignments
28	2	Knowledge	Study the effect of the environment on the genetic structure of the plant	Using the pen and board and data show	Exams and quick exams and assignments

29	2	Knowledge	Review	Using the pen and board and data show	Exams and quick exams and assignments
30	2	**Exam**	**Exam**	**Exam**	
Course Structure (Practical)					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Living contents of the plant cell, the nucleus, plastids of all types	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Plasmodium, cytoplasmic filaments	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Non-living contents of the plant cell	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Crystals of all types and shapes	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Cell wall (cell lamella , middle lamella, primary and secondary wall, click fields)	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	pits and its types (simple, branched, paired)	Using the pen and board and data show	Exams and quick exams and assignments
7	2	**Exam**	**Exam**	**Exam**	
8	2	The student learns what was presented in the lecture	Meristematic tissues, their characteristics their types in terms of location	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Meristematic tissues, theories related to meristems in the root and stem	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Permanent tissues Epidermis, their characteristics	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Perennial tissues, epidermis , types of Periderms cell types	Using the pen and board and data show	Exams and quick exams and assignments

12	2	The student learns what was presented in the lecture	Epidermis : their various types and shapes	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Parenchyma tissue, its characteristics, cell shapes, tissue types according to function	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Collenchyma tissue, its characteristics, and its types according to the nature of pectin deposition	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Sclerenchyma tissue, its features, sclerenchyma, its types and shapes	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Fibers, their types, different shapes and the nature of their distribution within the plant and its elements	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Xylem and its elements	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Phloem and its elements	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Vascular bundles of various types and shapes. Secretory	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Tissues of various types and shapes, the interstitial spaces and how they are assembled.	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Secretory tissues, milky and oily resin ducts	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Internal anatomy of the root (monocots)	Using the pen and board and data show	Exams and quick exams and assignments

23	2	The student learns what was presented in the lecture	Internal anatomy of the root (Dicotyledons, Phylum)	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Internal anatomy of the stem (monocotyls)	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Internal anatomy of the stem (Dicotyledons)	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	normal secondary growth	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Annual growth rings: spring and autumn wood, soft and annular, diffusely porous.	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Plant microscopic techniques	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments
30	2	**Exam**	**Exam**	**Exam**	

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**Al-Khazraji, Talib Awad and Zahraa Bakr Muhammad. - 2013. Plant Anatomy: Principles and Applications.**
Main references (sources)	Al-Ani, Badri Awad and Qaisar Najib Saleh. 1988. Fundamentals of Plant Anatomy.
Recommended books and references (scientific journals, reports...)	**Anatomy of flowring plants - - Atlas of plant structure**
Electronic References, Websites	**Journal of Botany INTERNATIONAL JOURNAL OF ADVANCED RESEARCH Advances in Bioresearch**

Course Description Form

1. Course Name:	
General chemistry	
2. Course Code:	
3. Semester / Year:	
2025- 2024	
4. Description Preparation Date:	
1/11/2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
(30 hours) / (4 units)	
7. Course administrator's name (mention all, if more than one name)	
Name: Riyadh Radhi Mohammed	**Emil: rmohammed@uowasit.edu.iq**
Name: Marwan Saleh Mahdi	**Emil: mamahdi@uowasit.edu.iq**
8. Course Objectives	
Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	1.Thinking and Discussion Method. 2. E-learning (Explanatory Videos and Electronic Tests).

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	**Atoms Introduction to Chemistry** Periodic properties	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	**Properties Periodicity of atoms** Classification of Periodic	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	**Ionic equilibrium and the law of mass action** calculations pH, pOH	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	**Ionic equilibrium and the law of mass action** Salts	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	**Ionic equilibrium and the law of mass action** Common ion	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	**Volumetric analysis** Ways of expression About concentration	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	**Volumetric analysis** Standard solutions	Using the pen and board and data show	Theoretical exam
8	2	The student learns what was presented in the lecture	**Volumetric analysis** Neutralization reactions	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	**Volumetric analysis** Indicators	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	**Volumetric analysis** Precipitation reactions	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	**Volumetric analysis** Deposition	Using the pen and board and data show	Exams and quick exams and assignments

12	2	The student learns what was presented in the lecture	**Volumetric analysis** Sedimentation curves	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	**Volumetric analysis** Uses Volumetric analysis	Using the pen and board and data show	Exams and quick exams and assignments
14	2	……..	Theoretical exam	……	……
15	2	The student learns what was presented in the lecture	**Gravimetric analysis** Deposition methods	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	**Gravimetric analysis** Gravimetric factor	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	**Spectroscopic analysis** Beer-Lambert law	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	**Spectroscopic analysis** Spectral analysis calculations	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	**Organic Chemistry** The bonds Carbon chemistry	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	**Organic Chemistry** Polarity	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	**Organic Chemistry** Stereo chemistry	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	**Organic Chemistry** Hydrocarbons	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	**Organic Chemistry** Properties Physical and chemical	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	**Organic Chemistry** Aromatic compounds	Using the pen and board and data show	Exams and quick exams and assignments

25	2	The student learns what was presented in the lecture	**Organic Chemistry** Benzene	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	**Organic Chemistry** Benzene derivatives	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	**Organic Chemistry** Naming Benzene derivatives	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	**Organic Chemistry** Interactions benzene	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	**Organic Chemistry** Prepare Benzene derivatives	Using the pen and board and data show	Exams and quick exams and assignments
30	2	……	Theoretical exam	……..	…….
Practical course structure					
Week	**Houres**	**Required Learning**	**Unit or subject name**	**Learning Method**	**Evaluation**
1	2	Safety instructions In the chemical laboratory	Learn teach other the basic Concepts To work inside the laboratory	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
2	2	Laboratory instruments used in a general chemistry laboratory	Identify glassware and devices inside the laboratory	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
3	2	Standard solutions	Standard solution conditions, Evidence, ways to express focus	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
4	2	Warning about chemical hazards	Acids, alkalis, chlorates, cyanide	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
5	2	Treating damage resulting from the effects of chemicals	Treating skin contamination with harmful substances Treatment of eye contamination with harmful substances Treatment of chemical ingestion	Attendance in the laboratory	Conduct experiments Process + reports Daily exam

6	2	Prepare a 0.1N solution of sodium hydroxide	Learn how to prepare	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
7	2	Prepare a 0.1 N solution of sodium carbonate and compare it with a solution of hydrochloric acid	Learn how to prepare	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
8	2	Prepare a solution of hydrochloric acid with different concentrations	Learn how to prepare	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
9	2	Determine the standard of sodium hydroxide using the secondary standard hydrochloric acid	Find the concentration of sodium hydroxide	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
10	2	Determination of the acidity of vinegar	Knowledge of the materials used in estimation	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
11	2	Measurement of melting point	Factors affecting the melting point	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
12	2	Practical Exam	Exam	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
13	2	Measure the boiling point	Factors affecting boiling point	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
14	2	Measure the boiling point	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
15	2	Sublimation	Sublimation conditions	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
16	2	Sublimation	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam

17	2	Recrystallization	Crystal purification	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
18	2	Recrystallization	Solvent selection	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
19	2	Recrystallization	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
20	2	Extraction	Purpose of extraction	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
21	2	Extraction	Important factors for good extraction	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
22	2	Extraction	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
23	2	Distillation	Types of distillation	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
24	2	Distillation	Distillation device components	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
25	2	Distillation	How does distillation occur?	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
26	2	Distillation	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
27	2	Determination of sodium chloride concentration (Moore's method)	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
28	2	Determination of sodium chloride concentration (Moore's method)	Calculations	Attendance in the laboratory	Conduct experiments Process + reports Daily exam

29	2	Spectroscopic methods	Introduction to single-beam spectroscopy, calculations and Beer-Lambert law	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
30	2	Practical Exam	Exam		

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Measurement and evaluation references
Main references (sources)	Automated Analysis / Prof. Dr. Abdul Mohsen Al-Haidari
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://learnchemistry12.com/2017/12/general-book. html

Course Description Form

1. Course Name:
Arabic language
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
30hours per year and 1 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Dayekh Muter Email: zainabaleanzy@uowasit.edu.iq
8. Course Objectives

Course Objectives	**Learn the concept of grammar, language and literature, and the concepts surrounding them that are included in the Arabic language.** **Highlight the study of the basics of the Arabic language and continue to use it to maintain writing in a correct language free of errors.** **The necessity of paying attention to the Arabic language to combat errors and distortions, as well as collecting common errors and placing the correct ones next to them to reduce errors in the language as much as possible.** **Teaching the student how to look at the linguistic text in a correct way by differentiating between the letter Dad and the letter Dhad and how to write the Hamza and differentiate between the letter Ha and the letter Ta Marbuta, as well as teaching the student how to delete a number of letters when writing, which are: - Alif - Ta - Noon - Waw - Ya. As well as learning the correct reading of the sermon of the pious by Imam Ali, peace be upon him, from Nahj al-Balagha.** **Focus on the importance of writing in a beautiful and clear correct handwriting.**

9. Teaching and Learning Strategies	
Strategy	Method of educational thinking and discussion E-learning (explanatory videos and electronic tests)

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The student learns what was presented in the lecture	The word and its parts -The name and its signs Action and its signs -The letter and its signs	Using the pen and board and data show	Exams and quick exams and assignments
2	1	The student learns what was presented in the lecture	Built and expressed -Constructed from verbs -Past tense - Cases of construction of the past tense	Using the pen and board and data show	Exams and quick exams and assignments
3	1	The student learns what was presented in the lecture	- Present tense verb - Cases of constructing the present tense verb -Do the command - Cases of constructing the imperative verb	Using the pen and board and data show	Exams and quick exams and assignments
4	1	The student learns what was presented in the lecture	Built from nouns	Using the pen and board and data show	Exams and quick exams and assignments

5	1	The student learns what was presented in the lecture	Parsing of the Muthanna and its appendix	Using the pen and board and data show	Exams and quick exams and assignments
6	1	The student learns what was presented in the lecture	Parsing the sound masculine plural And the appendix to it -Definition of the sound masculine plural -Conditions for the sound masculine plural -His Arabs	Using the pen and board and data show	Exams and quick exams and assignments
7	1	The student learns what was presented in the lecture	Supplement to the sound masculine plural -Exercises	Using the pen and board and data show	Exams and quick exams and assignments
8	1	The student learns what was presented in the lecture	Parsing the sound feminine plural -tariff - Its conditions - Its benefits	Using the pen and board and data show	Exams and quick exams and assignments
9	1	The student learns what was presented in the lecture	Parsing what is prohibited from being exchanged -tariff - Reasons for preventing the noun from being morphed -The first section is to prevent the name from Exchange	Using the pen and board and data show	Exams and quick exams and assignments
10	1	The student learns what was presented in the lecture	The second section is to prevent the name from Exchange - Exercises	Using the pen and board and data show	Exams and quick exams and assignments
11	1	The student learns what was presented in the lecture	First semester exam		
12	1	The student learns what was presented in the lecture	Parsing the five names - Its terms - Exercises	Using the pen and board and data show	Exams and quick exams and assignments

13	1	The student learns what was presented in the lecture	Parsing the five verbs - Exercises on the five verbs	Using the pen and board and data show	Exams and quick exams and assignments
14	1	The student learns what was presented in the lecture	Parsing the other invalid -tariff - Shortened name -And the missing name - Exercises	Using the pen and board and data show	Exams and quick exams and assignments
15	1	The student learns what was presented in the lecture	Parsing the defective verbs	Using the pen and board and data show	Exams and quick exams and assignments
16	1	The student learns what was presented in the lecture	Quranic texts -Interpretation of a number of vocabulary from the Qur'an Generous and correct the reader's understanding	Using the pen and board and data show	Exams and quick exams and assignments
17	1	The student learns what was presented in the lecture	A study on Surat Yusuf Ali peace	Using the pen and board and data show	Exams and quick exams and assignments
18	1	The student learns what was presented in the lecture	Distinguishing between dha and dha - The importance of differentiating between dha and dha - Means of differentiating between dha and dha - Exercises	Using the pen and board and data show	Exams and quick exams and assignments
19	1	The student learns what was presented in the lecture	Second semester exam (first month)	Using the pen and board and data show	Exams and quick exams and assignments
20	1	The student learns what was presented in the lecture	Literary texts - Nazik Al-Malaika's poem (Strangers) - Save and analyze	Using the pen and board and data show	Exams and quick exams and assignments
21	1	The student learns what was presented in the lecture	Common mistakes in the Arabic language	Using the pen and board and data show	Exams and quick exams and assignments

22	1	The student learns what was presented in the lecture	A poem of optimism and hope by Ibrahim Touqan - Critical comment	Using the pen and board and data show	Exams and quick exams and assignments
23	1	The student learns what was presented in the lecture	Reading the morning prayer of Imam Ali Peace be upon him - Explaining its meanings - Explaining its rhetorical form	Using the pen and board and data show	Exams and quick exams and assignments
24	1	The student learns what was presented in the lecture	Letters that are deleted when writing -A thousand - Delete the alif from the beginning of the word - Delete the alif from the middle of the word	Using the pen and board and data show	Exams and quick exams and assignments
25	1	The student learns what was presented in the lecture	- Delete the alif from the end of the word - Exercises	Using the pen and board and data show	Exams and quick exams and assignments
26	1	The student learns what was presented in the lecture	Ta'a marbuta in the Arabic language -Define it - How to write it	Using the pen and board and data show	Exams and quick exams and assignments
27	1	The student learns what was presented in the lecture	The open ta' in the Arabic language -Define it - How to write it	Using the pen and board and data show	Exams and quick exams and assignments
28	1	The student learns what was presented in the lecture	Second semester exam (second month)	Using the pen and board and data show	Exams and quick exams and assignments

29	1	The student learns what was presented in the lecture	Reading Imam Ali's sermon on him Greetings from Nahj al-Balagha (the sermon of the righteous) correctly - Explaining a number of its meanings	Using the pen and board and data show	Exams and quick exams and assignments
30	1	The student learns what was presented in the lecture	Analysis of the sermon of the righteous	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Arabic language for departments other than specialization
Main references (sources)	Explanation of Ibn Aqeel on Al-Fiyah Ibn Malik, edited by Muhyiddin Abdul Hamid
Recommended books and references (scientific journals, reports...)	The collection of Arabic lessons is an encyclopedia in three parts
Electronic References, Websites	

Course Description Form

1. Course Name:
Developmental and educational psychology
Course Code
2. Semester / Year:
2024-2025
3. Description Preparation Date:
1/11/2024
4. Available Attendance Forms:
Self-attendance
5. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
6. Course administrator's name (mention all, if more than one name)
Name:rawaa mohsin Email: riaammmm615@gmail.com
7. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**
8. Teaching and Learning Strategies	
Strategy	Brainstorming strategy

9. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Introduction to developmental and educational psychology	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Historical development of psychology The philosophical stage and the contemporary scientific stage Gestalt Aspects of psychology	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Introduction to the nature of psychology Meaning of behavior Meaning of response The effect of genetics on intelligence	Using the pen and board and data show	Exams and quick exams and assignments

4	2	The student learns what was presented in the lecture	Objectives of psychology and genetic and environmental factors	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Introducing schools of psychology. Introducing the theoretical and applied branches of psychology	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	The meaning of motivation and its physiological and psychological types	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Emotions and their types: fear, anger	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Imtakhan first semester	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Attention, its types, and internal and external determinants of attention	Using the pen and board and data show	Exams and quick exams and assignments

10	2	The student learns what was presented in the lecture	Memory, its types and stages of memory	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	The meaning of growth, maturity and development and the development schools of developmental psychology	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Glands, their types, hormones and their effects	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Stages of growth and the demands of life therein. Early, early, and late childhood	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Physiological characteristics of the child	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Research methods	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	The meaning of adolescence and the importance of studying adolescence	Using the pen and board and data show	Exams and quick exams and assignments

17	2	The student learns what was presented in the lecture	Biological, social and psychological manifestations	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Physical and sexual development	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Adolescent cognitive development	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Linguistic development	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture		Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Adolescent emotional development	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Motor development	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Adolescent school problems	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Adolescents and peers	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Adolescent study theories	Using the pen and board and data show	Exams and quick exams and assignments

27	2	The student learns what was presented in the lecture	Adolescent genetic and environmental factors	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Note	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	The difference between a child and a teenager	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	exam	Using the pen and board and data show	Exams and quick exams and assignments

10. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
11. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Developmental Psychology. Dr. Umaima Ali Khan Educational and general psychology, Dr. Abdul Amir Al Shamsi
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

Course Name:
Human rights and democracy
2- Course Code:
3- Semester / Year:
2024-2025
4- Description Preparation Date:
1/11/2024
5- Available Attendance Forms:
Actual mandatory attendance
6- Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
7- Course administrator's name (mention all, if more than one name)
Name: Suhad Dawood Saiman Email: **suhaddawood2@gmail.com**
8- Course Objectives

Course Objectives	***Increasing the student's knowledge of the theoretical conceptual aspect and historical development of the subject of human rights and democracy.** ***Developing the student's analytical and analytical skills regarding the reality and future of human**

	rights and democracy. ***Training the student on the importance of active participation in aspects of public life, such as** **enhancing respect for general human rights** **principles and active participation in political and cultural life.** *** Enabling the student to understand the importance** **of education and its role in spreading the culture of human rights and democracy in building a civilized society based on good governance, the most** **important components of which are belief in human rights, education on them, and active participation in governance through free and fair elections.**

9-Teaching and Learning Strategies

Strategy	Giving lectures by giving logical explanations of the topic being taught Class participation through preparing reports related to the subject and discussing them Analysis of some issues related to human rights

10- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	1	Introducing the concept of human rights	human rights	theoretical	Discussion/ questions and answers

3-4	1	Defining the concept and characteristics of human rights	Human rights	theoretical	Discussion/ questions and answers
5-6	1	Historical development of the concept of human rights	Human rights	theoretical	Discussion/ questions and answers
7-8	1	Human rights contents	Human rights	theoretical	Discussion/ questions and answers
9-10	1	Human rights in Greek civilization	Human rights	theoretical	Discussion/ questions and answers
11-12	1	Human rights in the Islamic perception	Human rights	theoretical	Discussion/ questions and answers
13-14	1	Regional human rights conventions and organizations	Human rights	theoretical	Discussion/ questions and answers
15-16	1	Non-governmental organizations and their role in defending human rights	Human rights	theoretical	Discussion/ questions and answers
17-18	1	United Nations and Human Rights	Human rights	theoretical	Discussion/ questions and answers
19-20	1	Universal Declaration of Human Rights	Human rights	theoretical	Discussion/ questions and answers
21	1	First semester exam	Human rights		
22-23	1	Historical development of the concept of democracy	Human rights	theoretical	Discussion/ questions and answers
24-25	1	Pictures of democracy	Human	Theoretical	Discussion/

			rights		questions and answers
26	1	Characteristics of the democratic system and its components	Human rights	theoretical	Discussion/ questions and answers
27	1	The concept of elections and its legal adaptation	Human rights	theoretical	Discussion/ questions and answers
28	1	Second semester exam	Human rights		

11- Course Evaluation

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

12- Learning and Teaching Resources

Required textbooks (curricular books, if any)	1 - Hadi Riad Aziz/Human rights (its development, contents, and protection) 2- Sindhi Naz Badrakhan/Human Rights and Democracy
Main references (sources)	Hafez Alwan Al-Dulaimi/ A contemporary reading of the human rights issue
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Methods of teaching human rights, published on the Internet

Course Description Form

1. Course Name:
Computer Science
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Daily attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
30 hours Number of units (2 units)
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer . zamen abood ramadhan Email: z.ramadaan@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Distance from industry: (a) Provides the artist with commercial ideas, data and basic topics of this subject in terms of its emergence and its role in contributing to the development of technology. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional methods: (a) Helping the student develop his abilities and inclinations to understand the topics of this subject. (b) Developing the student's attitudes and interests towards understanding the basic concepts of this subject and employing them in the field of education (teaching). 3- Psychomotor methods (skills): (a) Developing the student's ability to master the skill of fact-finding and the basics and principles of this subject to practical administrative practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in the field of work after graduation.
9. Teaching and Learning Strategies	
Strategy	-Thinking and Discussion Method - E-learning (Explanatory Videos and Electronic Tests) - Practical Tests

10. Course Structure					
Week	**Hours**	**RequiredLearning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	1	Knowledge	Computer fundamental Computer types Hardware &software ram	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
2	1	Knowledge	Storage device Operating system &type Compare between application &programs	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
3	1	Knowledge	Start work with window Windows fundamental Control panel	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
4	1	Knowledge	**Document** **Shut down windows**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
5	1	Knowledge	**Text box** **Create new account**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
6	1	Knowledge	Create and delete password Create files File types security	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
7	1		**exam**		
8	1	Knowledge	Network Types of network internet	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
9	1	Knowledge	Internet services Start page	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
10	1	Knowledge	Email Properties of email Create a count of Google	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
11	1	Knowledge	Microsoft word Introduction of Microsoft word Menu bar	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
12	1	Knowledge	File menu Home menu Insert menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
13	1	Knowledge	Page setup menu References menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
14	1	Knowledge	View menu Review menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
15	1	Knowledge	Power point File menu Home menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments

16	1	Knowledge	Insert menu Design menu Transition menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
17	1	Knowledge	Animation menu Review menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
18	1	Knowledge	Slide show	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
19	1	Knowledge	**Microsoft excel** **Introduction of excel**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
20	1	Knowledge	**File menu** **Home menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
21	1	Knowledge	**Insert menu** **View menu** **Review menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
22	1	Knowledge	Create equation of excel	Using whiteboard and data show and E-learning	Exams and quick exams and assignments

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily and monthly oral exams. And editing, discussing and evaluating reports and seminars , etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of computer
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Template

1.Course Name
Geology
2.Course Code
3.Semester/Year:
2024/2025
4.Date of Course Description
1/11/2024
5.Available Attendance Modes
Daily Attendance (Theoretical)
6.Number of Credit Hours: 15 Hours
1 Hours Theoretical
7.Course Coordinator:
Name: Assistant Lecturer: Huda Ali Sachit Email: hshalbh@uowasit.edu.iq

8.Course Objectives	
Learning Objectives	**1.(Cognitive Domain):** **(a) Provide students with essential knowledge and concepts related to geology, including its branches and primary areas of interest.** **(b) Enable students to comprehend the significance of geology in human life and its interrelation with other scientific disciplines.** **2.(Affective Domain):** **(a) Assist students in developing their abilities and interests in understanding the course topics.** **(b) Foster students' appreciation and engagement with the fundamental principles of the subject, promoting its application in education and teaching.** **3.Psychomotor Domain (Skills):** **Cultivate a passion for acquiring knowledge related to the subject matter.**

9.Teaching and Learning Strategies		
Strategy	Interactive thinking and discussion-based learning, cooperative learning strategy.	

10.Course Structure

Weeks	Hours	Required Learning Outcomes	The name of the unit or subject	Mode of Study	Assessment Method
1	1	**Knowledge**	General Introduction to Geology, its Branches, and its Relationship with Other Sciences	Use of Whiteboar and Projector Screen	Daily Examination Oral and Written Examination
2	1	**Knowledge**	**Earth's Structural Composition** - Earth's Layers - Earth's Interior - Elements of the Earth's Crus	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
3	1	**Knowledge**	**Minerals** - Physical Properties of Minerals Chemical Composition of Minerals -Classification of Minerals	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
4	1	**Knowledge**	**Rocks** -Types of Rocks, The Rock Cycle in Nature Igneous Rocks - Chemical and Mineral Composition of Rocks	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
5		**Examination**	**First Term Examination**		
6		**Knowledge**	**Sedimentary Rocks** - Chemical and Mineral Composition - Classification of Sedimentary Rocks	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
7		**Knowledge**	**Metamorphic Rocks** - Metamorphic Factors - Types of Metamorphic Rocks	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
8		**Knowledge**	**Hydrochemistry of Water** - Surface Water - Groundwater - Lakes	Use of Whiteboard and Projector Screen	
9		**Knowledge**	**Structural Geology** - Folds and Faults - Faults	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written

					Examination
10		**Knowledge**	**Earthquakes** - Causes and Effects of Earthquakes - Earthquake Distribution - Seismic Measurement Methods	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
11		**Knowledge**	**Fossil Studies** - Fossil Preservation - Pseudo fossils - Benefits of Using Fossils -Types of Fossils	Use of Whiteboard and Projector Screen	Daily Examination Oral and Written Examination
12		Second Term Examination	**Examination**		

11.Course Evaluation

The total course grade (out of 100) is distributed based on student performance in daily participation, oral and written examinations, and periodic assessments.

12.**Learning and Teaching Resources**

Prescribed Textbooks (If Available):	
Primary References (Sources)	*Geology*, Abdul hadi Al-Sayegh & Farouk Sana Allah, Ministry of Higher Education and Scientific Research. *Fundamentals of Geology*, Michel Kamel, Dar Al-Maseer for Publishing & Distribution, 2009.

Course Description Template

1. Course Name:
Fundamentals of Education and Teaching
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
In-Person
6. Number of Credit Hours (Total) / Number of Units (Total) :
30
7. Course administrator's name (mention all, if more than one name)
Name: Mr. Abbas Hadi Abdul-Sayed Email: ahadi@uowasit.edu.iq
8. Course Objectives

Course Objectives	1. Enhancing students' understanding of the educational and social reality throughout history and recognizing the essential aspects of the educational journey. 2. Understanding educational theories across different civilizations, both ancient and modern. 3. Interpreting the educational process from historical and philosophical perspectives. 4. Highlighting the concepts of upbringing and education. 5. Training students to appreciate the significance of the educational process. 6. Describing and analyzing the impact of educational systems on historical realities, past and present. 7. Identifying the educational realities revealed by philosophical schools in education. 8. Defining the educational objectives of society and applying educational concepts.

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	RequiredLearning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge	The meaning of education, its goals and its necessity	Dialogue and discussion	Oral test
2	1	Knowledge	Its theories and fields	Dialogue and discussion	Oral test
3	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
4	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
5	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
6	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
7	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
8	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
9	1	Knowledge	Historical basis of education	Dialogue and discussion	Oral test
10	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
11	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
12	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
13	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
14	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
15	1	Knowledge	Social basis of education	Dialogue and discussion	Oral test
16	1	Knowledge	The economic basis of education	Dialogue and discussion	Oral test
17	1	Knowledge	The economic basis of education	Dialogue and discussion	Oral test
18	1	Knowledge	Scientific basis of education	Dialogue and discussion	Oral test
19	1	Knowledge	National and social foundations	Dialogue and discussion	Oral test
20	1	Knowledge	Education in Islamic	Dialogue and	Oral test

			perspective	discussion	
21	1	Knowledge	Educational renewal in Iraq	Dialogue and discussion	Oral test
22	1	Knowledge	Educational renewal in Iraq	Dialogue and discussion	Oral test
23	1	Knowledge	Educational renewal in Iraq	Dialogue and discussion	Oral test
24	1	Knowledge	primitive education	Dialogue and discussion	Oral test
25	1	Knowledge	Social education	Dialogue and discussion	Oral test
26	1	Knowledge	Education throughout history	Dialogue and discussion	Oral test
27	1	Knowledge	Islamic education	Dialogue and discussion	Oral test
28	1	Knowledge	Adjustment Social	Dialogue and discussion	Oral test
29	1	Knowledge	Culture and Education	Dialogue and discussion	Oral test
30	1	Knowledge	Social education	Dialogue and discussion	Oral test

11. Course Evaluation

12. Learning and Teaching Resources

Course Description Form

1. Course Name:
English language
2. Course Code
3. Semester / Year:
2024/2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Actual mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer Nagham Fadhil Hussein Email: nahussain@uowasit.edu.iq
8. Course Objectives

Course Objectives	**1- To enrich the students' knowledge about English language** **2- Improve students' ability in listening, speaking, reading and writing** **3-Mak the students feel with the English language in their study**
9. Teaching and Learning Strategies	
Strategy	Discussion and ask questions, giving the chance to students to participate by speaking, reading and translation.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1-8	8	Acquire social manner, like introduction and greeting Know his environment as some cities, the phone numbers Know some information's about his identity	Unit one: Hello Lecture Method Unit 2: your world Discussion Method Unit3: All about you Problem-based learning	Theoretical lectures , Using the blackboard& the E-Learning in teaching	Examinations and daily activity
9-16	8	Know how to use the possessives Review Know some nationalities and countries, the present simple Know how to arrange the times and preference Review	Unit4: family and friends- Experiential Learning Exercises and solutions Unit 5: The way live Flipped classroom Unit 6: Every day-(Scientific Terms Exercises and solutions	Theoretical lectures Using the blackboard& the E-Learning in teaching	Examinations and daily activity
17-22	6	How to use pronouns and the questions word Know house parts and furniture Learn the past tense	Unit 7: My favorites - Collaborative Learning Unit 8: Where I live(Scientific Terms - Unit 9: Times past Direct Instruction	Theoretical lectures Using the blackboard& the E-Learning in teaching	Examinations and daily activity

23-27 28-30	5 3	Know the importance of do homework and some sports Review Use the model verb can The present continues tense How to use means of trans portion Express with full sentences about good manner Review	Unit 10: We had a great time Inquiry-Based Learning Exercises and solutions Unit 11: I can do that Demonstrating Method Unit:12 Please and thank you Montessori Method Unit 13: Here and now Unit 14: It's times to go Game-Based Learning Exercise and solution Blended Learning Role-Playing	Theoretical lecture Using the blackboard& the E-Learning in teaching Using the blackboard& the E-Learning in teaching Theoretical lectur	Examinations and daily activity Examinations and daily activity

11.Course Evaluation

12.

- The 40th annual session is divided into
- 36 marks for the semester exams (at last two test in each semester0
-4 marks for participation, activities and homework

13.Learning and Teaching Resources

Required textbooks (curricular books, if any)	New Headway Pulse for Beginners, John and Liz Soars, Oxford
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Safety and Biosecurity
2. Course Code:
3. Semester / Year:
2024/2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
mandatory attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
7. Course administrator's name (mention all, if more than one name)
Name: suadad bresam khiri

8. Course Objectives	
Course Objectives	• Introducing student to Safety and Biosecurity what are biological hazard Difinition of hazards waste

9. Teaching and Learning Strategies	
Strategy	

10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	
First	1	Introduction to Occupational Safety and Health Work accidents and injuries	Using the whiteboard, the display screen and e-learning	Daily oral and written exam	
Second	1	Definition of Biosafety Its objectives and risk levels	/	/	
three	1	Biological Hazards How to Assess and Manage Them Methods of Controlling Biological Hazards	Using whiteboard, display screen and learning	Daily oral and written exam	

fourth	1	Work permits Precautions for issuing them	Using whiteboard, display screen and learning	Daily oral and written exam	
fifth	1	The most important behaviors of human relations	Using whiteboard, display screen and learning	Daily oral and written exam	
sixth	1	Inspection and Inspection Lists Media Role Last Line of Defense	Using whiteboard, display screen and learning	Daily oral and written exam	
seventh	1	Definition of hazardous waste Treatment and disposal methods	Using whiteboard, display screen and	Daily oral and written exam	

eighth	1	Decontamination in microbiology laboratories	Using whiteboard, display screen and learning	Daily oral and written exam	
Ninth	1	Exam			
tenth	1	How to apply standard practices Management responsibility in achieving Safety	Using whiteboard, display screen and learning	Daily oral and written exam	
eleveth	1	Fires Combustion Process Fire Hazards	Using whiteboard, display screen and learning	Daily oral and written exam	

twelfth	1	Biosecurity Objectives Stakeholders	Using whiteboard, display screen and learning	Daily oral and written exam	
thirteenth	1	Biosafety Laboratory Principles Biosafety and Biosecurity	Presentation a interrogation	Daily oral and written exam	
fourteenth	1	Risk Management Methodology Development of Biosafety Program	Using whiteboard, display screen and learning	Daily oral and written exam	
Fifteenth	1	Biosafety Program Elements Personal Management	Using whiteboard, display screen and learning	Daily oral and written exam	

Sixteen	1	Information Security Transportation of Biological Materials	Using whiteboard, display screen and learning	Daily oral and written exam	
Seventeenth	1	Combating Biological Hazards Legal Research	Using whiteboard, display screen and learning	Daily oral and written exam	
eighteenth	1	Exam	eighteenth		

11.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Plant taxonomy

2. Course Code:

3. Semester / Year:

2024-2025

4. Description Preparation Date:

1/11/2024

5. Available Attendance Forms:

Self-attendance

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

60 / 6

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

Name: Dr.Asia naji obaid Email: asia @ uowasit.edu.iq

8. Course Objectives

Course Objective	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive – emotional – skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**

9. Teaching and Learning Strategies

Strategy	Method of thinking and discussion by presenting models of the studied plant and identifying its parts

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the	Definition of taxonomy and its importance And its relationship with other Atums	Using the pen and board nd data show	Exams and quick exams and assignments

		lecture			
2		The student learns what was presented in the lecture	History of taxonomy	Using the pen and board and data show	Exams and quick exams and assignments
3		The student learns what was presented in the lecture	The most important Arab and Roman scholars Who contributed to the development of this science	Using the pen and board and data show	Exams and quick exams and assignments
4		The student learns what was presented in the lecture	Seed plants, comparison between gymnosperms and angiosperms	Using the pen and board and data show	Exams and quick exams and assignments
5		The student learns what was presented in the lecture	Shapes of roots and stems And its modifications	Using the pen and board and data show	Exams and quick exams and assignments
6		The student learns what was presented in the lecture	Leaf morphology	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	First semester exam	Using the pen and board and data show	Exams and quick exams and assignments
8		The student learns what was presented in the lecture	Flower structure and variations	Using the pen and board and data show	Exams and quick exams and assignments

9		The student learns what was presented in the lecture	Floral systems	Using the pen and board and data show	Exams and quick exams and assignments
10		The student learns what was presented in the lecture	Fruits and seeds	Using the pen and board and data show	Exams and quick exams and assignments
11		The student learns what was presented in the lecture	Pollen and its importance	Using the pen and board and data show	Exams and quick exams and assignments
12		The student learns what was presented in the lecture	Pollination, its forms and media	Using the pen and board and data show	Exams and quick exams and assignments
13		The student learns what was presented in the lecture	Basics of classification and ranks	Using the pen and board and data show	Exams and quick exams and assignments
14		The student learns what was presented in the lecture	Major and minor Evolution and trends in development	Using the pen and board and data show	Exams and quick exams and assignments
15		The student learns what was presented in the lecture	Seed plants Synthetic classification systems and Natural and evolutionary theories	Using the pen and board and data show	Exams and quick exams and assignments

16		The student learns what was presented in the lecture	Plant migration and settlement	Using the pen and board and data show	Exams and quick exams and assignments
17-20		The student learns what was presented in the lecture	Explanation of the most important plant families and dependent economic plants	Using the pen and board and data show	Exams and quick exams and assignments
21			Second semester exam		

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1/ Al-Mousawi. Ali Hussein (1987) Plant classification. 2/ The writer. Youssef Mansour (1988) Classification of seed plants
Electronic References, Webs	- https://www.muhadharaty.com

Course Description Form

1. Course Name:
Plant Anatomy
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 15 units per week
7. Course administrator's name
Name: Rasha Amer Hassoun Email: rhassoon@uowasit.edu.iq

8. Course Objectives

Course Objectives	This study is focusing on the internal structure and function of plant cells, tissue, and organs. This includes the problem of the use of external sources of matter and energy in the processes of metabolism, as well as the growth and development processes and their internal regulation. in addition, training students in the proper use of the compound light microscope and to give them experience in interpreting images that they see through the microscope in terms of how plant structure is related to function

9. Teaching and Learning Strategies

Strategy	The method of thinking, discussion and developing the student's ability to place plants in taxonomic groups, diagnose them, name them and describe them.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	Memorize and understand the top	Definition of taxonomy, its importance and why we need classification in plants	Using the pen and board and data show	Exams and quick exams and assignments
2	4	Memorize and understand the top	Roots, their classification and naming	Using the pen and board and data show	Exams and quick exams and assignments
3	4	Memorize and understand the top	The stem and the classification of plants according to the nature of the stem, its location and the direction of growth	Using the pen and board and data show	Exams and quick exams and assignments

4	4	Memorize and understand the top	Leaves and parts of the leaf	Using the pen and board and data show	Exams and quick exams and assignments
5	4	Memorize and understand the top	Classification of leaves according to the shape of the base, blade and leaf apex	Using the pen and board and data show	Exams and quick exams and assignments
6	4	Memorize and understand the topic	Leaf blade edge and its classifications and leaf vein and its classifications	Using the pen and board and data show	Exams and quick exams and assignments
7	4	Memorize and understand the topic	Leaf modifications Other main parts of the leaf structure	Using the pen and board and data show	Exams and quick exams and assignments
8	4	A test	First semester exam test	Using the pen and board and data show	Exams and quick exams and assignments
9	4	Memorize and understand the topic	Atria and their classifications	Using the pen and board and data show	Exams and quick exams and assignments
10	4	Memorize and understand the topic	Reproductive parts (flower)	Using the pen and board and data show	Exams and quick exams and assignments
11	4	Memorize and understand the topic	Floral parts and their classification	Using the pen and board and data show	Exams and quick exams and assignments
12	4	Memorize and understand the topic	The cup, its shapes, functions, and the cup’s lifespan	Using the pen and board and data show	Exams and quick exams and assignments
13	4	Memorize and understand the topic	Crown, its characteristics and forms	Using the pen and board and data show	Exams and quick exams and assignments
14	4	Memorize and understand the topic	Floral reminder device, third episode after the crown	Using the pen and board and data show	Exams and quick exams and assignments
15	4	Memorize and understand the topic	flower symmetry	Using the pen and board and data show	Exams and quick exams and assignments
16	4	Memorize and	Flower square	Using the pen and board and data	Exams and quick exams and

		understand the topic		show	assignments
17	4	Memorize and understand the topic	The female reproductive system and its divisions	Using the pen and board and data show	Exams and quick exams and assignments
18	4	Memorize and understand the topic	Placental arrangement system	Using the pen and board and data show	Exams and quick exams and assignments
19	4	Memorize and understand the topic	Fruits and types of fruits	Using the pen and board and data show	Exams and quick exams and assignments
20	4	A test	The leaf , external and internal structure	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1/ Al-Mousawi. Ali Hussein (1987) Plant classification. 2/ The writer. Youssef Mansour (1988) Classification of seed plants
Electronic References, Websites	https://www.muhadharaty.com

Course Description Form

1. Course Name:	
Embryology	
2. Course Code:	
3. Semester / Year:	
2025-2024	
4. Description Preparation Date:	
1/11/2024	
5. Available Attendance Forms:	
Direct attendance in the classroom and practical laboratories	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 theoretical hours + 60 practical hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Haider Ali Naser **Emil: ALHamltashy H.A. @uowasit.edu.iq**	
8. Course Objectives	
Course Objectives	1. Providing students with general information for general Embryology. 2. Introducing students to ways to types of embryos . 3. Introducing students to different of types. 4. Introducing students to morale stage. 5. Introducing students to blastula stage . 6. Introducing students to gastrula stage. 7. Introducing students to development of embryo . 8. Introducing students to development of embryo in frogs . 9. Introducing students to development of embryo in birds.
9. Teaching and Learning Strategies	
Strategy	1- Introducing the student to laboratory techniques in embryo. 2- Introducing the student to methods for preparing of embryos in laboratory. 3 - Introducing the student to methods of different of embryo's types 4- Introducing the student to laboratory risks. 5 - methods of preparing solutions for save of embryos . 6- Training students to and training the student on the types of preparing of samples .

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	terms	Introduction to Embryology	Data Show	Report + daily exam
2	2	Classification of embryos types	Male reprod. system	=	=
3	2	=	Female reprod. system	=	=
4	2	=	=	=	=
5	2	terms	Ferti station	=	=
6	2	=	Cell divition	=	=
7	2	=	2 cell stage s	=	=
8	2	=	4 cell stage s	=	=
9	2	=	8 cell stage s	=	=
10	2	=	16 cell stage s	=	=
11	2	=	32 cell stage s	=	=
12	2	=	64 cell stage s	=	=
13	2	=	Moreala stage	=	=
14	2	=	Bastoreala stage	=	=
15	2	=	Gastoreala stage	=	=
16	2	=	3rd layers stage	=	=
17	2		Sea embryology	=	=
18	2	=	Nervous system deveopment	=	=
19	2	=	Digestive system deveopment	=	=
20	2	=	Frog embryology	=	=
21	2	=	Nervous system deveopment	=	=
22	2	=	Digestive system deveopment	=	=
23	2	=	Other Organic system	=	=
24	2		Bird embryology	=	=
25	2		Nervous system deveopment	=	=
26	2		Digestive system deveopment	=	=
27	2		Muscular system deveopment	=	=
28	2		16 h deveopment	=	=
29	2		18 h deveopment	=	=
30	2		24 h development 33-55 h deveopment	=	=

1. Course Name:
Embryology
2. Course Code:
3. Semester / Year:
2025-2024
4. Description Preparation Date:
1-11-2024
5. Available Attendance Forms:
Direct attendance in the classroom and practical laboratories
6. Number of Credit Hours (Total) / Number of Units (Total)
60 practical hours
7. Course administrator's name (mention all, if more than one name)
Name: Hussein Shwandi Alhijj **Emil:hshundi @uowasit.edu.iq**
8. Course Objectives

Course Objectives	1. Providing students with general information for general Embryology. 2. Introducing students to ways to types of embryos . 3. Introducing students to different of types. 4. Introducing students to morale stage. 5. Introducing students to blastula stage . 6. Introducing students to gastrula stage. 7. Introducing students to development of embryo . 8. Introducing students to development of embryo in frogs . 9. Introducing students to development of embryo in birds.
9. Teaching and Learning Strategies	
Strategy	1- Introducing the student to laboratory techniques in embryo. 2- Introducing the student to methods for preparing of embryos in laboratory. 3 - Introducing the student to methods of different of embryo's types 4- Introducing the student to laboratory risks. 5 - methods of preparing solutions for save of embryos . 6- Training students to and training the student on the types of preparing of samples .

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 2	knowledge	Introduction to Embryology Anatomical expressions for embryology	Data Show	Report + daily exam
2	2 2	knowledge	Male reprod. system Formation of sperm and eggs	= Use a microscope	= Discussion
3	2 2	knowledge	Female reprod. system Cellular division	= Use a microscope	= daily exam
4	2 2	knowledge	=	=	daily exam =
5	2 2	knowledge	Ferti station Ovarian installation	= Use a microscope	= daily exam
6	2 2	knowledge	Cell divition Embryonic formation in the Amphioxus	= Use a microscope	daily exam =
7	2 2	knowledge	2 cell stage s Stages of hemorrhoids in The Amphioxus	= Use a microscope	= daily exam
8	2 2	knowledge	4 cell stage s Blastula stage	= Use a microscope	daily exam =
9	2 2	knowledge	8 cell stage s Gastrula stage	= Use a microscope	= daily exam
10	2 2	knowledge	16 cell stage s **Larval stage**	= Use a microscope	= daily exam
11	2 2	knowledge	32 cell stage s Nervous system deveopment	= Use a microscope	= Discussion
12	2 2	knowledge	64 cell stage s	= Use a microscope	= Discussion

13	2 2	knowledge	Moral stage Digestive system development	= Use a microscope	=
14	2 2	knowledge	Blastula stage Mesoderm layer	=	=
15	2 2	knowledge	Gastrula stage	= Use a microscope	=
16	2 2	knowledge	3rd layers stage Fertilization in amphibians	=	=
17	2 2	knowledge	Sea embryology Fertilization in amphibians	=	=
18	2 2	knowledge	Nervous system development 33h development	=	=
19	2 2	knowledge	Digestive system development Organ formation in amphibian embryos	= Use a microscope	=
20	2 2	knowledge	Frog embryology	= Use a microscope	=
21	2 2	knowledge	Nervous system development	=	=
22	2 2	knowledge	Digestive system development	=	=
23	2 2	knowledge	Other Organic system	=	=
24	2 2	knowledge	Bird embryology 18 h development	=	=
25	2 2	knowledge	Nervous system development 19 h development	=	=
26	2 2	knowledge	Digestive system development	=	=

			24h development		
27	2 2	knowledge	Muscular system development	=	=
28	2 2	knowledge	16 h development 33h development	=Use a microscope	=
29	2 2	knowledge	18 h development	= Use a microscope	=
30	2 2	knowledge	72 h development h development	= Use a microscope	=

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Molecular Biology
invertebrate
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1-11-2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
Number of Units (Total) 4/6
7. Course administrator's name (mention all, if more than one name)
Name: assistant professor akmam ali habeeb Email: akhabeeb @uowasit.edu.iq
8. Course Objectives

Course Objectives	Identify the group of lower and primitive animals known as invertebrates • Its distinctive characteristics and the development of the invertebrate animal group in terms of complexity in systems or in body symmetry and the formation of the body cavity. • In addition to the environment, behavior and reproduction of these animals • And the development of systems such as the circulatory, nervous, digestive, and excretory systems
9. Teaching and Learning Strategies	
Strategy	Style of thinking and discussion Learning through exploratory lectures Using practical methods and methods in the laboratory

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Introduction to invertebrates - Kingdom	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Kingdom: Protista	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Excretion & Osmoregulation	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Sample of protozoa Class= Phytomastigophora	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Class= Zoomastigophora)Zooflagellates(	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	A. proteus& Pelomyxa	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Monocystis morphology and life style	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Plasmodium species that infect humans, the severity of malaria, and its life cycle	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Phylum Porifera Structure and Form of Porifera	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the	Phylum: Cnidaria	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
11	2	The student learns what was presented in the lecture	First semester exam	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Nematocysts and Cnidocytes/ class hydrozoa	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Class Anthozoa	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Formation of corals and coral reefs	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Phylum Platyhelminthes	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Phylum Ascheiminthes	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Phylum Nematoda	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Phylum Annelinde	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Class :Oligochaeta	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Class :Hirudinea	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Phylum Onychophora	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Phylum Arthopoda	Using the pen and board and data show	Exams and quick exams and assignments

23	2	The student learns what was presented in the lecture	Types of crustacean larvae	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Class :Arachnida	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Genus :Buthus & argiope	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Phylum :Mollusca	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Anodonata &helix	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Second exam	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Student reviow provious lectures	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	Student reviow provious lectures	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Invertebrat Zoology 2006 . Barnes 4- Zoology 2007 . Dorn , Rober ,L;Walker jr ,Warren F.;Barnes ,Rober Invertebrat Zoology 2007 . Ruppert Edward E.
Main references (sources)	Distributing the score out of 100 ttp://digitalcommons.unl.edu/onlinedictinvertzoology
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

2. Course Code:

3. Semester / Year:

2024-2025

4. Description Preparation Date:

1\11\2024

5. Available Attendance Forms:

Self-attendance

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

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

Name: **Noor Naeem Shakir**
Email: **nshakir @gmail.uowasit.edu.iq**

8. Course Objectives

Course Objectives	Identify the group of lower and primitive animals known as invertebrates • Its distinctive characteristics and the development of the invertebrate animal group in terms of complexity in systems or in body symmetry and the formation of the body cavity. • In addition to the environment, behavior and reproduction of these animals • And the development of systems such as the circulatory, nervous, digestive, and excretory systems Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in his field of work after graduation.

9. Teaching and Learning Strategies

Strategy	Style of thinking and discussion Learning through exploratory lectures Using practical methods and methods in the laboratory

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The student learns what was presented	Introduction to invertebrates	Using the pen and board and data	Exams and quick exams and

		in the lecture	How to use microscope	show	assignments
2	4	The student learns what was presented in the lecture	Kingdom: **protozo** Cl; Flagellata -Euglena w. m. -Volvox -chilomonas,	Using the pen and board and data show	Exams and quick exams and assignments
3	4	The student learns what was presented in the lecture	Cl: flagellate -Giardia (troph-cyst) Trypanosoma -Tricchomonas vaginalis Trichonympha	Using the pen and board and data show	Exams and quick exams and assignments
4	4	The student learns what was presented in the lecture	sporozoa Monocystis (trophozoite) -Plasmodium (rigstage) (ameboidstage, schizont stage sporozit, ookinate, exoflagelate,)	Using the pen and board and data show	Exams and quick exams and assignments
5	4	The student learns what was presented in the lecture	Cl:Sarcodina - *Amoeba proteus,* *Pelomyxa*- *Entamoeba Histolyt* Noctiluca Goctiluca,	Using the pen and board and data show	Exams and quick exams and assignments
6	4		Cl: Ciliata, -Paramecium (w. m, binary fiasion, conjugation, Trichoysts) - Didinium, -stentor -vorticella		
7	4	The student learns	Prepare temporary	Using the pen and	Exams and quick

		what was presented in the lecture	slides of a drop of water and watch the live primitives with notes on them.	board and practical application	exams and assignments
8	4	The student learns what was presented in the lecture	Exam	Using the pen and board and data show	Exams and quick exams and assignments
9	4	The student learns what was presented in the lecture	Porifera Structure & Form of Porifera -Leucosolenia (Colon spicles) - G: Spongilla spicule	Using the pen and board and practical application	Exams and quick exams and assignments
10	4	The student learns what was presented in the lecture	-Grantia (C.S., W.M. Spicules) - G: Esupongia (colin fibers)/ gemmules	Using the pen and board and data show	Exams and quick exams and assignments
11	4	The student learns what was presented in the lecture	Ph: Cnidaria G:Hydra (W.M., male, female, buddin G:Obelia (colo medosa)	Using the pen and board and data show	Exams and quick exams and assignments
12	4	The student learns what was presented in the lecture	G: Velella G: Physalia, G: Gonionemus,	Using the pen and board and data show	Exams and quick exams and assignments
13	4	The student learns what was presented in the lecture	G: Pinnaria G: Tubularia	Using the pen and board and data show	Exams and quick exams and assignments
14	4	The student learns what was presented in the lecture	Cl:Scyphozoa G:Aurellia, (medusa, planula larve, scyphistoma, Strobila ephyra larva)	Using the pen and board and data show	Exams and quick exams and assignments
15	4	test	G:*Tubipora* G: Mertidi (W.M.C.S. through gullet, C.S. below		
16	4	The student learns what was presented in the lecture	-Planaria (W.M., C.S., digestive system) - Fasciola Hepatica (W. M. meracidium, redia, cercaria)	Using the pen and board and practical application	Exams and quick exams and assignments
17	4	The student learns what was presented in the lecture	- Chlonorchis sinensis - Schistosoma	Using the pen and board and data show	Exams and quick exams and assignments

			(W.M.) incopulation, egg)		
18	4	The student learns what was presented in the lecture	Taenia Solium, T. saginata. (scole, mature segment, greavid Spgment**)** -Echinococcus granulosis (W.M. C.S. in cyst hydatid)		
19	4	The student learns what was presented in the lecture	Exam		
20	4	The student learns what was presented in the lecture	*G: ENTROBIUS VERMICULARIS* G Ascaris (W.M.) C.S. in mal		
21	4	The student learns what was presented in the lecture	G:Arenicola G: *Lumbricus*		
22	4	The student learns what was presented in the lecture	-*Hirudo medicinalis* -Nereis (external featu C.S. Parapodiu anteriorend) -Arenicola, Aphrodite		
23	4	The student learns what was presented in the lecture	**Phylum: Arthropoda** *G : Peripatus* G : *Cyclop*		
24	4	The student learns what was presented in the lecture	G*: Daphnia* G: *Cypris*		
25	4	The student learns what was presented in the lecture	G: *Lepas* G: *Penaeus*		
26	4	The student learns what was presented in the lecture	Phylum: Mollusca G *: Chiton* G: *Helix* G:*Dentalium*		
27	4	The student learns what was presented in the lecture	Ph:Echinodermata G:Asterias G:Ophiocoma		
28	4	The student learns what was presented in the lecture	G:Echinus G:Holothuria G:Antedon		
29	4	The student learns what was presented in the lecture	Review lessons		

30	4	The student learns what was presented in the lecture	Preparing and submitting reports by students		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Invertebrat Zoology 2006 . Barnes 4- Zoology 2007 . Dorn , Rober ,L;Walker jr ,Warren F.;Barnes ,Rober
Main references (sources)	Invertebrates Book: Committee of the Ministry of Higher Education and Scientific Research
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Animal histology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendane
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: ali fayadh bargooth Email:afayadh@uowasit.edu.iq
8. Course Objectives

Course Objectives	• Identify the components of animal cells and basic tissues • Identify the histological structures of different body organs • Learn how to cut tissues and use various types of microscopes

9. Teaching and Learning Strategies	
Strategy	It is the transition of students from the stage of focusing on skills in elementary grades to the stage of focusing on Contents of all secondary grades, where you find that students face many demands in order to Reading information through textbooks and also writing down notes during lectures Work is done independently alongside education, whether it is about understanding written structures or paper tests On the other hand, you find that there are students who will not be able to acquire important academic skills But you find that there are many students who have a problem with learning, including students who face Difficulties in learning, but through teaching and learning strategies, the individual can achieve.The success he wants to achieve is through knowledge and skills

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1					

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	6	Learn about histology	Introduction of histology	Giving of lecture	
Second	6	The student learns the structure of the cell using an optical and electron microscope	Cell structure using optical and electron microscopy	Giving of lecture	Daily exam
Third	6	The student classifies tissues	Epithelial tissue	Giving of lecture	Daily report and examination
Fourth	6	The student explains the glandular tissue	Glandular epithelial tissue definition and classification	Giving of lecture	duty
Fifth	Examination				
Sixth	6	The student learns about connective tissue	Connective tissue and its classification features	Giving of lecture	Participation - Reports
Seventh	6	Skeletal tissue cartilage and bone	Special connective tissues	Giving of lecture	Participation - Reports
Eighth	6	The blood and lymph	Special connective tissues	Giving of lecture	Participation - Reports
Ninth	6	The student compares smooth muscle, skeletal muscle, and cardiac muscle	Muscle tissue smooth muscle skeletal muscle cardiac muscle	Giving of lecture	Participation - Reports
Tenth	Examination				
Eleven	6	Explains how the heart muscle works	Complementary to the muscular system is the cardiac muscle, Purkinje fibers and the differences between them	Giving of lecture	Participation
Twelve	6	The student enumerates the types of nerve cells	Nervous tissue, nerve cells and their types,	Giving of lecture	Daily exam

			glial cells and their types		
Thirteen	6	The student learns about the nerve ganglion and its types	The nerve ganglion and its types	Giving of lecture	Participation
Fourteen	6		Review the above material and conduct daily exams	Interrogation	Participation
Fifteen	6		Scientific discussions	Interrogation	
Sixteen	Examination				
Seventeen	6	The student learns about the lymphatic organs	Lymphatic organs (lymph nodes, spleen, thyroid)	Giving of lecture	Participation
Eighteen	6	The student learns about the circulatory system	Circulatory system: arteries, veins, and capillaries	Giving of lecture	Participation
Nineteen	6	The student lists the components of the integumentary system	Integumentary system Skin Hair Nail	Giving of lecture	Participation - Reports
Twenty	6	The student learns about the components of the digestive system	Digestive system: lip, tongue, cheek and teeth	Giving of lecture	Duty
Twenty one	Examination				
Twenty two	6	The student learns about the digestive tract	Esophagus, stomach and intestines	Lecture	Daily exam and participation
Twenty three	6	The student explains the structure and function of the liver	Liver	Giving of lecture	Participation
Twenty four	6	The student explains the structure and function of the pancreas	Pancreas	Giving of lecture	Participation
Twenty five	6	The student learns about the most important features of the respiratory system	Respiratory system ,Trachea and Lung	Giving of lecture	Duty
Twenty six	Examination				
Twenty seven	6	The student enumerates the endocrine glands	Endocrine	Presentation and lecture method	Report and duty
Twenty eight	6	The student explains how the sense organs work	Sense organs	Presentation and lecture method	Report
Twenty nine	6	The student learns about the reproductive system	Reproductive system	Presentation and lecture method	Report

11- Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as dailypreparation, daily oral, monthly, or written exams, reports ..... etc	
Required textbook	1- histology (Part One) / University of Baghdad / 2000 2- histology (Part Two) / University of Baghdad / 2000 Ministry of Higher Education and Scientific Research - University of Baghdad 3- Principles of practical histology / University of Baghdad / 1984
Main References (sources)	Basic histogy atlas and text..jungueirn 2003
Recommended books and references	Theses, dissertations and scientific journals
Electronic References, Websites	Edus.uowasit.edu.iq Uowasit.edu.iq http://www.iasj.net
Thirty	Examination

Course Description Form

1. Course Name:	
Biochemistry	
2. Course Code:	
3. Semester / Year:	
2025/ 2024	
4. Description Preparation Date:	
1/11/2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
(60 hours) / (6 units)	
7. Course administrator's name (mention all, if more than one name)	
Name: Riyadh Radhi Mohammed	**Emil: rmohammed@uowasit.edu.iq**
Name: Shifa Ali Abdul Mohsin	**Emil: sabdulmohsin@uowasit.edu.iq**
8. Course Objectives	
Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	1.Thinking and Discussion Method. 2. E-learning (Explanatory Videos and Electronic Tests).

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	**Carbohydrates** Their prevalence, importance and properties	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	**Types of Sugars** Monosaccharides, disaccharides and polysaccharides	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	**Types of sugars** Amino sugars, glycogen and starch	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	**Fats** Its composition, classification, and characteristics	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	**fatty acids Saturated and unsaturated** Neutral fats Phospholipids Glycolytic fats	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	**Proteins** Its importance, existence and general characteristics	Using the pen and board and data show	Exams and quick exams and assignments
7	2	……	Theoretical exam	……..	Theoretical exam
8	2	The student learns what was presented in the lecture	**Amino acids** Essential non-essential Conditional Essential	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	**Purification methods** Quantitative methods And measure the molecular weight	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	**Diagnosis of amino acids** Types of proteins	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	**Enzymes** Naming enzymes	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns	**Enzymes**	Using the pen and	Exams and quick

		what was presented in the lecture	Kinetics of enzymes	board and data show	exams and assignments
13	2	The student learns what was presented in the lecture	**Enzymes** Enzyme mechanism of action	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	**Enzymes** Synthesis of enzymes	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	**Vitamins** Vitamins And enzyme conjugates	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	**Type of vitamins** Vitamins dissolved in water	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	**Type of vitamins** Vitamins dissolved in fats	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	**Nucleotides** The importance of its existence And its installation	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	**Nucleic acids** DNA	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	**Nucleic acids** RNA	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	**Nucleic acids DNA** Characteristics of the Watson and Crick model	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	**Nucleic acids RNA** Types of acid Nuclear RNA	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	**Metabolism** Catabolism of carbohydrates	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	**Carbohydrate Metabolism Glycolysis**	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	**Fat Metabolism** Krebs cycle	Using the pen and board and data show	Exams and quick exams and assignments

26	2	The student learns what was presented in the lecture	**Alcoholic fermentation** Pentose phosphate pathway	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	**Respiratory Chain** Its components and importance	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	**Respiratory Chain** Transmission process Electrons	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	**Respiratory Chain** Catabolism of acids Amino composition of urea Catabolism of fatty acids	Using the pen and board and data show	Exams and quick exams and assignments
30	2	……	Theoretical exam	……	Theoretical exam

Practical course structure

Week	Houres	Required Learning	Unit or subject name	Learning Method	Evaluation
1	2	Carbohydrates	Classification of carbohydrates	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
2	2	Carbohydrates	Carbohydrate-specific interactions	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
3	2	Carbohydrates	Molisch Test	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
4	2	Carbohydrates	Seliwanoff Test	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
5	2	Carbohydrates	Bial Test	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
6	2	Carbohydrates	Reducing properties of sugars	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
7	2	Practical Exam	Exam	……	Conduct

					experiments Process + reports Daily exam
8	2	Carbohydrates	Benedict Test	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
9	2	Carbohydrates	Barfoed Test, Picric Acid Test	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
10	2	Osazone	Osazone Formation	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
11	2	A) The reaction of an aldehyde sugar, such as glucose, with phenylhydrazine	Condensation process, process Oxidation, a second condensation process	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
12	2	Reaction of the ketone sugar (fructose) with phenylhydrazine:	Condensation process, process Oxidation, a second condensation process	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
13	2	Polysaccharide screenings	Iodine detection	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
14	2	Fat	classification of fats	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
15	2	Fat tests detect unsaturation,	Iodine detection, detection Copper acetate	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
16	2	Soap	decomposition of soap, soap precipitation, Soap separation	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
17	2	Soap	Determine the sonication coefficient:	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
18	2	Determine the acid number of rancid fats	The rancidity of hydrolysis, Oxidative rancidity	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
19	2	Acrolein test To detect cholesterol	The method of work	Attendance in the laboratory	Conduct experiments Process + reports

					Daily exam
20	2	Lieberman revealed cholesterol	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
21	2	Iodine factor	The method of work	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
22	2	Proteins	amino acids	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
23	2	Proteins	Structural structure of proteins	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
24	2	Detection of proteins	ninhydrin detection, Xanthoprotic reaction	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
25	2	Detection of proteins	Hopkinscoll revealed For tryptophan	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
26	2	Detection of proteins	Mellon revealed, Zakakuji revealed	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
27	2	Detection of proteins	Detection of unstable sulfur and acid reaction	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
28	2	Detection of proteins	Biuret detection	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
29	2	Precipitation of proteins, Diagnosis of amino acids by paper chromatography	Protein precipitation methods, Descending chromatography Rising chromatography	Attendance in the laboratory	Conduct experiments Process + reports Daily exam
30	2	Practical Exam	Exam	……..	…….

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Measurement and evaluation references
Main references (sources)	1- Biochemistry / Dr. Basil Dalali 2- Introduction to Biochemistry / Dr. Khawla Al-Falih.
Recommended books and references (scientific journals, reports…)	Lippincott's Biochemistry 6th Edition
Electronic References, Websites	https://uomus.edu.iq/LibEDep.aspx?depid=59

Course Description Form

1. Course Name: Molecular Biology
Biostatistics/ Theoretical
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1-11-2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
1 hour theoretical + 2 hours practical
7. Course administrator's name (mention all, if more than one name)
Name: Eng. Aqeel Rahm Hassoun Email: ahassoon @uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Definition of biostatistics 2- Collecting samples and simplifying the data collected Enabling students to express facts in a numerical way
9. Teaching and Learning Strategies	
Strategy	Discussion Strategy Using Practical Methods and Methods in the Statistical Computing Laboratory Learning by Theoretical Lectures

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge	Chapter One Introductio The Definition of Statis and its Importance Variable Statistic Conce and Types Descriptive statistics of type and distribution	Using the blackboard, display and E-learning	Student Discussion and the Cose exam entered the hall
2	1	Knowledge	Chapter 2 – Presentation Metadata and Quantita Data	Using the board	Discuss and solve exercises with Daily Exam Cob
3	1	Knowledge	Chapter Three Measures of Central Tendency: The Arithmetic Mean of Classified and Unclassified Data	Using the board	Discuss and solve exercises
4	1	Knowledge	Broker – For Classified and Unclassified Data	Using the board	Discuss and solve exercises
5	1	Knowledge	Mode for Classified and Unclassified Data	Using the board	Discussion, exercises and solving them
6	1	Knowledge	Upward and Downward Iterations	Using the board	Discuss and dissolve exercises and coz
7	1	test.	CHAPTER one		
8	1	Knowledge	4th Lobe - Scatterometer . Range for Classified and Unclassified Data	Using the board	Discussion and dissolution of exercises and daily cob
9	1	Knowledge	Variance. Standard Deviation Grouped and Ungrouped Data	Using the board	Discuss and solve exercises
10	1	Knowledge	Average deviation of classified and non-classified data	Using the board	Discussion and Dissolution of Exercises and Cos Exam
11	1	Knowledge	Chapter Five - Correlation and Regression.. Pearson Classified and Non-Classified Data	Using the board	Discussion and Dissolution of Exercises and Cos Exam
12	1	Knowledge	Correlation and Spearman Regression of Classified and	Using the board	Discuss and solve exercises

			Unclassified Data		
13	1	Knowledge	Probability and normal distribution	Using the board	Discuss and solve exercises
14	1	Knowledge	Chapter Six - Confidence Limits for Data and Normal Distribution	Using the board	Discussion and Dissolution of Exercises and Cos Exam
15	1	Knowledge	KINDS OF PROBABILITY	Using the board	Discuss and solve exercises
16	1	test.	End of second semester exam		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of General Statistics
Main references (sources)	- Principles of General Statistics, Dr. Ahmed Abdel Sami Taiba , Dar Al-Bidaya First Edition, Amman 2008 2- Introduction to General Statistics, Muhammad Subhi Abu Saleh et al ., Dar Al-Yazouri for Printing, Amman 2000 3- Book of Life Statistics, Dr. Abdul Khaleq Abdul Jabbar Al-Naqeeb, Dar Al-Yazouri for Printing Amman 2006
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Computer Science
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Daily attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer . zamen abood ramadhan Email: z.ramadaan@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Distance from industry: (a) Provides the artist with commercial ideas, data and basic topics of this subject in terms of its emergence and its role in contributing to the development of technology. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional methods: (a) Helping the student develop his abilities and inclinations to understand the topics of this subject. (b) Developing the student's attitudes and interests towards understanding the basic concepts of this subject and employing them in the field of education (teaching). 3- Psychomotor methods (skills): (a) Developing the student's ability to master the skill of fact-finding and the basics and principles of this subject to practical administrative practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in the field of work after graduation.

9. Teaching and Learning Strategies

Strategy	−Thinking and Discussion Method − E−learning (Explanatory Videos and Electronic Tests) − Practical Tests

10. Course Structure

Week	Hours	RequiredLearning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge	**Microsoft word** Introduction of micro soft word	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
2	2	Knowledge	Menu bar File menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
3	2	Knowledge	**Home menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
4	2	Knowledge	**Page setup menu** **References menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
5	2	Knowledge	**View menu** **Review menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
6	2	Knowledge	Power point File menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
7			**exam**		
8	2	Knowledge	Home menu Insert menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
9	2	Knowledge	Design menu Transition menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
10	2	Knowledge	Animation menu Review menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
11	2	Knowledge	Slide show	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
12	2	Knowledge	**Microsoft excel**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
13	2	Knowledge	**Introduction of Microsoft excel**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
14	2	Knowledge	**home menu**	Using whiteboard	Exams and quick

			file menu	and data show and E-learning	exams and assignments
15	2	Knowledge	**Insert menu** View menu	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
16	2	Knowledge	**Review menu**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
17	2	Knowledge	Create equation of Microsoft excel	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
18	2	Knowledge	Create conditional formatting	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
19	2	Knowledge	**network** **types of networks**	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
20	2	Knowledge	**Internet** Connection with internet	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
21	2	Knowledge	Service of internet Start page	Using whiteboard and data show and E-learning	Exams and quick exams and assignments
22	2	Knowledge	**Email** Properties of email Create of gmail	Using whiteboard and data show and E-learning	Exams and quick exams and assignments

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily and monthly oral exams. And editing, discussing and evaluating reports and seminars , etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of computer
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Developmental psychology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: rawaa mohsin Email: roasmmmm615@gmail.com
8. Course Objectives

Course Objectives	Students' knowledge of the meaning of growth psychology and its characteristics, the difference between growth and maturity, environmental and genetic factors affecting growth, the influence of endocrine and ductal glands, and knowledge of the effect of hormones and vitamins on the growth process. Knowing and explaining the cognitive, emotional and physical characteristics of the child and adolescent
9. Teaching and Learning Strategies	
Strategy	Brainstorming strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Introduction to developmental psychology	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	The importance of studying developmental psychology	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Laws of developmental psychology	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Factors affecting the fetus	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Endocrine and ductal glands	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Environmental factors before and after birth	Using the pen and board and data show	Exams and quick exams and assignments

7	2	The student learns what was presented in the lecture	Manifestations of physical, sensory and motor development	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Mental, linguistic and emotional aspects	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Research methods	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Experimental and correlational approach	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	The embryonic stage of fertilization of the egg	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Achievement test	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Prenatal fetal environment, umbilical cord and placenta	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Physiological characteristics of the child	Using the pen and board and data show	Exams and quick exams and assignments

15	2	The student learns what was presented in the lecture	The nervous system and actions	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Childhood breastfeeding	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Late childhood	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Essay tests	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Emotional growth	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Meaning of adolescence	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	The importance of studying adolescence	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Physical characteristics of the adolescent	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture		Using the pen and board and data show	Exams and quick exams and assignments

24	2	The student learns what was presented in the lecture	Emotiona characteristics of the adolescent	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	The influence of the family on the adolescent	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Evaluation other than achievement tests	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Cumulative record	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Note	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Checklists and checklists	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture		Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Childhood and Adolescent Psychology. Umaima Ali Khan
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
"Educational Administration and Secondary learning."
2. Course Code:
3. Semester / Year:
2025/ 2024
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total):
(60 hours) / (6 units)
7. Course administrator's name (mention all, if more than one name)
Name: M.M. Najah Abdul Rahim Abdul Redha Email: najah.abdulraheem1230@ir
8. Course Objectives

Course Objectives	Objectives of the study material This course aims to achieve educational purposes through its interest in human elements of teachers, users and students in addition to material elements of buildings, equipment, educational tools and funds.

9. Teaching and Learning Strategies

Strategy	Strategy Active Learning Strategies

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowing	the concept of management, its development and definition	. In-person lecture and discussion	. In-person exams (daily and monthly).
2	2	Knowing	the characteristics of educational management, its elements	In-person lecture and discussion	. In-person exams (daily and monthly).
3	2	Knowing	the levels of management and the factors affecting	In-person lecture and discussion	. In-person exams (daily and monthly).

			them. In-person lecture and discussion		
4	2	Knowing	the prevailing trends in educational management In-person lecture and discussion	In-person lecture and discussion	. In-person exams (daily and monthly).
5	2	Knowing	Centralization, decentralization, democracy	In-person lecture and discussion	. In-person exams (daily and monthly).
6	2	Knowing	Types of educational management	In-person lecture and discussion	. In-person exams (daily and monthly).
7	2	Knowing	Democracy, autocracy, correspondence, diplomacy	In-person lecture and discussion	. In-person exams (daily and monthly).
8	2	Knowing	School management, its meaning, its goals	In-person lecture and discussion	. In-person exams (daily and monthly).
9	2	Knowing	School administration, its patterns, relationships, tasks and characteristicsIts patterns, relationships, tasks and characteristics	In-person lecture and discussion	. In-person exams (daily and monthly).
10	2	Knowing	School management and classroom management	In-person lecture and discussion	. In-person exams (daily and monthly).
11	2	Knowing	The role of each of school and classroom management in the educational process	In-person lecture and discussion	. In-person exams (daily and monthly).
12	2	Knowing	School and society	In-person lecture and discussion	. In-person exams (daily and monthly).
13	2	Knowing	School communication methods	In-person lecture and discussion	. In-person exams (daily and monthly).
14	2	Knowing	The relationship between the school and society	In-person lecture and discussion	. In-person exams (daily and monthly).
15	2	Knowing	Services, parents and teachers councils.	In-person lecture and discussion	. In-person exams (daily and monthly).
16	2	Knowing	School activities: their importance, objectives, types, student services	In-person lecture and discussion	. In-person exams (daily and monthly).
17	2	Knowing	Administration and secondary education	In-person lecture and discussion	. In-person exams (daily and monthly).
18	2	Knowing	Leadership	In-person lecture and discussion	. In-person exams (daily and monthly).
19	2	Knowing	Objectives and Tasks of Educational Supervision	In-person lecture and discussion	. In-person exams (daily and monthly).
20	2	Knowing	Types of Educational Supervision	In-person lecture and discussion	. In-person exams (daily and monthly).
21	2	Knowing	Modern Trends in Educational Supervision, Its Foundations and Methods	In-person lecture and discussion	. In-person exams (daily and monthly).

22	2	Knowing	Modern Trends in Educational Supervision, Its Foundations and Methods	In-person lecture and discussion	. In-person exams (daily and monthly).
23	2	Knowing	Modern Trends in Educational Supervision, Its Foundations and Methods	In-person lecture and discussion	. In-person exams (daily and monthly).
24	2	Knowing	Selecting and Training Educational Supervisors	In-person lecture and discussion	. In-person exams (daily and monthly).
25	2	Knowing	Selecting and Training Educational Supervisors	In-person lecture and discussion	. In-person exams (daily and monthly).
26	2	Knowing	The Reality of Educational Supervision in Iraq and Its Evaluation	In-person lecture and discussion	. In-person exams (daily and monthly).
27	2	Knowing	The Concept of Good Learning	In-person lecture and discussion	. In-person exams (daily and monthly).
28	2	Knowing	Its Principles of Good Learning	In-person lecture and discussion	. In-person exams (daily and monthly).
29	2	Knowing	The Foundations of Good Learning	In-person lecture and discussion	. In-person exams (daily and monthly).
30	2	Knowing	Objectives and Tasks of Educational Supervision	In-person lecture and discussion	. In-person exams (daily and monthly).

11. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student such as daily preparation, daily, oral, monthly and written exams, reports, etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Educational and School Administration Theories and Practices Active Learning Strategies
Main references (sources)	Mohammed bin Abdullah Al-Naji
Recommended books and references (scientific journals, reports…)	Mahmoud Fattouh Muhammad Saadat Dr. Suha Ahmed Abu Al-Hajj Dr. Hassan Khalil Al-Musalha
Electronic References, Websites	

Course Description Form

1. Course Name:

English language

2. Course Code:

3. Semester / Year:

2024/2025

4. Description Preparation Date:

1/11/2024

5. Available Attendance Forms:

Actual mandatory attendance

6. Number of Credit Hours (Total) / Number of Units (Total)

30 theoretical hours

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

Name: Assistant Lecturer Nagham Fadhil Hussein
Email: nahussain@uowasit.edu.iq

8. Course Objectives

Course Objectives	**1- To enrich the students' knowledge about English language** **2- Improve students' ability in listening, speaking, reading and writing** **3-Mak the students feel with the English language in their study**

9. Teaching and Learning Strategies

Strategy	Discussion and ask questions, giving the chance to students to participate by speaking, reading and translation.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1-8	8	Tenses, Questions, using bilingual dictionary, part of speech, words with more one meaning Present simple, present continuous, using have got &has got describing countries Past simple, past continuous, irregular verb, making connections, suffixes to make different words& negatives Review	Unit 1: Getting to know Unit 2: The way we live Unit3: It all went wrong Exercises and solutions	Theoretical lectures ,	Examinations and daily activity
9-16	8	Quantity (much, many), some and any (someone, anyone, somewhere, anywhere…), learning buying things Review Verb patterns1, future intentions, hot verbs (have, go and come) What's like, comparative & superlative adjectives, talking about cities, synonyms and antonyms Present perfect and past simple ,for and since tense revision, past participle, adverbs and words pairs.	Unit4: Lets go shopping Exercises and solutions Unit 5: What do you want to do Unit 6: Tell me what's like Exercises and solutions Unit 7: Fame	Theoretical lectures	Examinations and daily activity
17-22	6	Review Obligation (have(got), should& must) jobs, words that go together and compound nouns Time and conditional clauses, hot verbs (take, get, do and make) Verb patterns2 infinitive purpose , describing feelings and situations	Exercises and solutions Unit 8: Do's and don't Unit 9: Going places Unit 10: Scared to death	Theoretical lectures	Examinations and daily activity

23-27 28-30	5 3	Review Passive, verbs and participles, verbs and nouns go together second conditional, might, phrasal verbs present perfect and present perfect continuous, word formation and adverbs past perfect, reported statement, hot verbs (bring, take, go and come)	Exercises and solutions Unit 11: Thing that changed the world Unit:12 Dreams and reality Unit13: Earning a living Unit 14: Family ties	Theoretical lecture Theoretical lecture	 Examinations and daily activity Examinations and daily activity

11. Course Evaluation

- The 40th annual session is divided into
- 36 marks for the semester exams (at last two test in each semester0
-4 marks for participation, activities and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	New Headway Pulse for Pre-Intermediate, John and Liz Soars, Oxford
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Name:
The crimes of the Baath regime in Iraq
Course Code:
Semester / Year:
2024/2025
Description Preparation Date:
1\11\2024
Available Attendance Forms:
Actual mandatory attendance
Number of Credit Hours (Total) / Number of Units (Total)
30 theoretical hours
Course administrator's name (mention all, if more than one name)
Name: Suhad Dawood Saiman Email: **suhaddawood2@gmail.com**
Course Objectives

Course Objectives	**The student learns about the topics of the course that shed light the crimes committed by the previous regime in Iraq through clarification The concept of crime in general in terms of its types and types, explanation of the violations that have affected human rights, and also an explanation of environmental problems Which Iraq faced because of this system.**
Teaching and Learning Strategies	
Strategy	*Giving lectures by giving logical explanations of the topic being taught *Class participation through preparing reports related to the subject and discussing them

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1		The concept of crime (definition types -its sections)	Baath crimes	etical	Discussion questions and answe
2		Crimes ofthe Baath regime (international crime - its types)	Baath crimes	etical	Discussion questions and answe
3	1	Decisions issued by the court The Iraqi Supreme Criminal Court	Baath crin	theoretical	Discussion questions and answe
4	1	Psychological crimes (mechanism and consequences)	Baath crin	theoretical	Discussion questions and answe
5	1	Social crimes (militarization of society)	Baath crin	theoretical	Discussion questions and answe
6	1	The Baath regime's position on religion	Baath crin	theoretical	Discussion questions and answe
7	1	Violating Iraqi laws	Baath crin	theoretical	Discussion questions and answe
8	1	First semester exam	Baath crin		
9	1	Pictures of human rights violations	Baath crin	theoretical	Discussion questions and answe
10	1	Decisions on political and military violations of the Baath regime	Baath crin	theoretical	Discussion questions and answe
11	1	Prison and detention places of the Baath regime	Baath crin	theoretical	Discussion questions

					and answ
12	1	Environmental crimes of the Baat regime	Baath crin	theoretical	Discussio questions and answ
13	1	Military and radioactive contamination and mine explosio	Baath crin	theoretical	Discussio questions and answ
14	1	Bombing the city of Halabja with chemical weapons	Baath crin	theoretical	Discussio questions and answ
15	1	Destruction of cities and villages (scorched earth policy)	Baath crin	theoretical	Discussio questions and answ
16	1	Bombing of holy shrines, mosque and Husseiniyas	Baath crin	theoretical	Discussio questions and answ
17	1	Drying the marshes	Baath crin	theoretical	Discussio questions and answ
18	1	Razing palm groves, trees and crops	Baath crin	theoretical	Discussio questions and answ
19	1	Mass grave crimes	Baath crin	theoretical	Discussio questions and answ
20	1	The events of 1963 and their relationship to mass graves	Baath crin	theoretical	Discussio questions and answ
21	1	Events extending from (1979 -2003) and their relationship In mass graves	Baath crin	theoretical	Discussio questions and answ
22	1	Chronological classification of genocide graves in Iraq	Baath crin	theoretical	Discussio questions and answ
23	1	Genocide graves related to the Iraq War Iranian (1980-1988)	Baath crin	theoretical	Discussio questions and answ

24	1	Graves of the 1983 Barzanian Kurdish genocide	Baath crin	theoretical	Discussio questions and answ
25	1	Genocide graves for the victims of the Anfal massacre for the period (1987-1988)	Baath crin	theoretical	Discussio questions and answ
26	1	Genocide graves for victims of the Shaabaniya uprising For the year 1991	Baath crin	theoretical	Discussio questions and answ
27	1	Limiting the three ruling powers to the Baath Party	Baath crin	theoretical	Discussio questions and answ
28	1	Violation of the right to party pluralism by the Baath regime	Baath crin	theoretical	Discussio questions and answ
29	1	Violation of international law (the first and second Gulf wars). - International blockade 1990	Baath crin	theoretical	Discussio questions and answ
30	1	The impact of the transitional period on combating authoritaria politics Law No. 32 of 2016 banni the Baath Party	Baath crin	theoretical	Discussio questions and answ

). Course Evaluation

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

*Semester/30%
*Daily preparation, activities and attendance/10%
*Final exam/60%

. Learning and Teaching Resources	
Required textbooks (curricular books any)	The crimes of the Baath regime in Iraq
Main references (sources)	1 - The Permanent Iraqi Constitution of 2005 2- A law prohibiting the Baath Party, entities parties , and racist, terrorist, and takfiri activities No. 32 of 2016 3- General principles in the Iraqi Penal Code Prof. Dr. Ali Hussein Al-Khalaf, Prof. Dr. Sultan Abdul Qadir
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Baath crimes documentaries on the Internet

Course Description Form

1. Course Name:
Arabic language
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
30hours per year and 1 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Zainab Dayekh Muter Email: zainabaleanzy@uowasit.edu.iq
8. Course Objectives

Course Objectives	**Identifying the concept of grammar, language, and literature, and the surrounding concepts within the Arabic language.** **Highlighting the study of the basics of the Arabic language and continuing to circulate it to maintain writing in a sound language free of errors.** **The necessity of paying attention to the Arabic language to resist error and distortion, alerting students to the importance of the Arabic language in developing communication abilities and skills between the speaker and the recipient, writing reports and articles in the Arabic language in a smooth, accurate and organized manner, and students communicating with their mother tongue, as well as enabling students to read the Qur'an correctly, as well as focusing on the importance of writing in a beautiful, clear and sound handwriting.**

9. Teaching and Learning Strategies

Strategy	Educational Thinking and Discussion Method E-learning (Explanatory Videos and Electronic Tests)

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	1	The student learns what was presented in the lecture	Hamza in the Arabic language -The hamza of the pieces and their locations	Using the pen and board and data show	Exams and quick exams and assignments
2	1	The student learns what was presented in the lecture	- Hamzat al-Wasl and its places - Differentiating between the two hamzas of pieces And the connection - The hamza is at the beginning of the word	Using the pen and board and data show	Exams and quick exams and assignments
3	1	The student learns what was presented in the lecture	- The medium hamza - Cases of drawing the middle hamza	Using the pen and board and data show	Exams and quick exams and assignments
4	1	The student learns what was presented in the lecture	The hamza at the end of the word (extreme) - Exercises	Using the pen and board and data show	Exams and quick exams and assignments
5	1	The student learns what was presented in the lecture	Writing the letters dhaad and dhaa in Arabic	Using the pen and board and data show	Exams and quick exams and assignments
6	1	The student learns what was presented in the lecture	Punctuation marks in Arabic -The importance of punctuation marks - Commas and their positions - Semicolons and their positions -The point and its locations -The two vertical dots	Using the pen and board and data show	Exams and quick exams and assignments
7	1	The student learns what was presented	Question mark and its locations	Using the pen and board and data show	Exams and quick exams and

		in the lecture	- Exclamation mark and its locations -Police (-)		assignments
8	1	The student learns what was presented in the lecture	- ellipsis - Quotation marks and their positions -The two semicircular arcs and their positions	Using the pen and board and data show	Exams and quick exams and assignments
9	1	The student learns what was presented in the lecture	Writing the alif maqasara at the end The word - In names - In actions	Using the pen and board and data show	Exams and quick exams and assignments
10	1	The student learns what was presented in the lecture	Writing the extended alif at the end The word - In names - In actions	Using the pen and board and data show	Exams and quick exams and assignments
11	1	The student learns what was presented in the lecture	The Arabic sentence and its types - Past tense -His signs	Using the pen and board and data show	Exams and quick exams and assignments
12	1	The student learns what was presented in the lecture	Present tense verb -His cases	Using the pen and board and data show	Exams and quick exams and assignments
13	1	The student learns what was presented in the lecture	First semester exam	Using the pen and board and data show	Exams and quick exams and assignments
14	1	The student learns what was presented in the lecture	Types of present tense verbs - The present tense verb is correct - The present tense verb is in the other's condition - The present tense verb is one of the five verbs	Using the pen and board and data show	Exams and quick exams and assignments
15	1	The student learns what was presented	Do the command Construct an	Using the pen and board and data show	Exams and quick exams and

		in the lecture	imperative verb - Exercises		assignments
16	1	The student learns what was presented in the lecture	Number rules and numerical adjectives - Definition of number - The rule of number in terms of reminder And feminization - Contract terms - Parsing and constructing numbers - Presenting the countable to the number	Using the pen and board and data show	Exams and quick exams and assignments
17	1	The student learns what was presented in the lecture	actor - Types of actor - Pictures of the actor - Characteristics of the actor -Feminine sign in verbs	Using the pen and board and data show	Exams and quick exams and assignments
18	1	The student learns what was presented in the lecture	Second semester exam (first month)	Using the pen and board and data show	Exams and quick exams and assignments
19	1	The student learns what was presented in the lecture	The representative of the actor - Definition - Pictures of the deputy actor - Provisions of the active subject - What replaces the subject after deleting it	Using the pen and board and data show	Exams and quick exams and assignments
20	1	The student learns what was presented in the lecture	- Modal verbs	Using the pen and board and data show	Exams and quick exams and assignments
21	1	The student learns what was presented in the lecture	Literature - History of literature and its codification -Divisions of the history of Arabic literature and its eras	Using the pen and board and data show	Exams and quick exams and assignments

			- Pre-Islamic literature - Its characteristics		
22	1	The student learns what was presented in the lecture	- Prose in the pre-Islamic era - The arts of pre-Islamic prose - Imru' al-Qais ibn Hajar and his famous commentator, memorizing part of its verses	Using the pen and board and data show	Exams and quick exams and assignments
23	1	The student learns what was presented in the lecture	- Literature in the Islamic era - Literary arts in early Islam - Characteristics of poetry in early Islam	Using the pen and board and data show	Exams and quick exams and assignments
24	1	The student learns what was presented in the lecture	- Prose in Islam - Public speaking - Messages	Using the pen and board and data show	Exams and quick exams and assignments
25	1	The student learns what was presented in the lecture	Umayyad era - Literary arts in the Umayyad era - the hair - Public speaking and debates	Using the pen and board and data show	Exams and quick exams and assignments
26	1	The student learns what was presented in the lecture	Al-Farazdaq - His intention (the famous Al-Farazdaq meme)	Using the pen and board and data show	Exams and quick exams and assignments
27	1	The student learns what was presented in the lecture	Abbasid literature - the hair -His stuff - Prose and its types	Using the pen and board and data show	Exams and quick exams and assignments
28	1	The student learns what was presented in the lecture	Second semester exam (second month)	Using the pen and board and data show	Exams and quick exams and assignments
29	1	The student learns what was presented in the lecture	Abu Alaa Al-Maarri -His life - Topics of his poems	Using the pen and board and data show	Exams and quick exams and assignments
30	1	The student learns what was presented in the lecture	Quranic study - The inheritance verse from Surat	Using the pen and board and data show	Exams and quick exams and assignments

			An-Nisa - The reason for going down - Interpretation		

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Arabic language for departments other than specialization
Main references (sources)	Explanation of Ibn Aqeel on Al-Fiyah Ibn Malik, edited by Muhyiddin Abdul Hamid
Recommended books and references (scientific journals, reports…)	The collection of Arabic lessons is an encyclopedia in three parts
Electronic References, Websites	

Course Description Form

1. Course Name:
comparative anatomy of chordates
2. Course Code:
3. Semester / Year:
2024−2025
4. Description Preparation Date:
1−11−2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
Number of Units (Total) 4/6
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Alaa najee salih Email: alaanaji @uowasit.edu.iq
8. Course Objectives

Course Objectives	Knowledge of the emergence and development of body systems in different chordates, with a structural and functional comparison
9. Teaching and Learning Strategies	
Strategy	Teaching strategies are the transition of students from the stage of focusing on skills in the primary grades to the stage of focusing on the contents of all secondary grades. You find that students face many demands in order to read information from textbooks, and they also take notes during lectures, Work is also done independently, in addition to expressing understanding, whether through written structures or paper-and-pencil tests. On the other hand, you find that there are students who will not be able to acquire important academic skills, and this results in a lack of mastery of the content that leads to failure.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	4	Knowledge	**Origin & general characters of chordates**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
2	4	Knowledge	**Classification of Chordates (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
3	4	Knowledge	**Classification of Chordates (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
4	4	Knowledge	**Integumentary system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
5	4	Knowledge	**Integumentary system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
6	4	Knowledge	**Skin Derivatives**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
7	4	Knowledge	**Muscular system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
8	4	Knowledge	**Muscular system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
9	4	Knowledge	**Digestive system (1)**	Delivering, using teaching aids and	Tests, class participation, attendance

				discussion	
10	4	Knowledge	**Digestive system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
11	4	Knowledge	**Digestive glands**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
12	4	Knowledge	**Respiratory system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
13	4	Knowledge	**Respiratory system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
14	4	Knowledge	**Respiratory system (3)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
15	4	Knowledge	**Theory & Practical Examination**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
16	4	Knowledge		Delivering, using teaching aids and discussion	Tests, class participation, attendance
			Half break		
17	4	Knowledge	**Excretory system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
18	4	Knowledge	**Excretory system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
19	4	Knowledge	**Excretory system (3**)	Delivering, using teaching aids and discussion	Tests, class participation, attendance
20	4	Knowledge	**Genital system (1)**	Delivering,	Tests, class

				using teaching aids and discussion	participation, attendance
21	4	Knowledge	**Genital system (2,3)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
22	4	Knowledge	**Circulatory system.**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
23	4	Knowledge	**Heart/comparative**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
24	4	Knowledge	**Aortic arches /discuss**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
25	4	Knowledge	**Nervous system**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
26	4	Knowledge	**Brain and peripheral nerves**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
27	4	Knowledge	**Skeletal system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
28	4	Knowledge	**Skeletal system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Comparative anatomy For chordate. Muhammad Abdel Hadi Ghali and Hussein Abdel Moneim, second edition 2014.

	1.Comparative anatomy, function, evolution. Kardong, K. V. (2012). 2. Comparative anatomy of the vertebrates.Kent, G. C. and Carr, R. K. (2001).
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

1. Course Name	
2. Course Code:	
3. Semester / Year:	
2024-2025	
4. Description Preparation Date:	
1-11-2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total) :	
Number of Units (Total) 4/6	
7. Course administrator's name (mention all, if more than one name)	
Dhuha abdul hadi hamzah daha.abdulhadi@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	Knowledge of the emergence and development of body systems in different chordates, with a structural and functional comparison
9. Teaching and Learning Strategies	
Strategy	Teaching strategies are the transition of students from the stage of focusing on skills in the primary grades to the stage of focusing on the contents of all secondary grades. You find that students face many demands in order to read

	information from textbooks, and they also take notes during lectures, Work is also done independently, in addition to expressing understanding, whether through written structures or paper-and-pencil tests. On the other hand, you find that there are students who will not be able to acquire important academic skills, and this results in a lack of mastery of the content that leads to failure.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge	**Origin & general characters of chordates**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
2	2	Knowledge	**Classification of Chordates (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
3	2	Knowledge	**Classification of Chordates (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
4	2	Knowledge	**Integumentary system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
5	2	Knowledge	**Integumentary system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance

6	2	Knowledge	**Skin Derivatives**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
7	2	Knowledge	**Muscular system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
8	2	Knowledge	**Muscular system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
9	2	Knowledge	**Digestive system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
10	2	Knowledge	**Digestive system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
11	2	Knowledge	**Digestive glands**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
12	2	Knowledge	**Respiratory system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
13	2	Knowledge	**Respiratory system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
14	2	Knowledge	**Respiratory system (3)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
15	2	Knowledge	**Theory & Practical Examination**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
16	2	Knowledge		Delivering, using teaching aids and	Tests, class participation, attendance

				discussion	
			Half break		
17	2	Knowledge	**Excretory system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
18	2	Knowledge	**Excretory system (2)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
19	2	Knowledge	**Excretory system (3**)	Delivering, using teaching aids and discussion	Tests, class participation, attendance
20	2	Knowledge	**Genital system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
21	2	Knowledge	**Genital system (2,3)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
22	2	Knowledge	**Circulatory system.**	Delivering, using teaching aids and discussion	Tests, class participation, attendance
23	2	Knowledge	Heart/comparative	Delivering, using teaching aids and discussion	Tests, class participation, attendance
24	2	Knowledge	Aortic arches /discuss	Delivering, using teaching aids and discussion	Tests, class participation, attendance
25	2	Knowledge	Nervous system	Delivering, using teaching aids and discussion	Tests, class participation, attendance
26	2	Knowledge	Brain and peripheral nerves	Delivering, using teaching aids and discussion	Tests, class participation, attendance
27	2	Knowledge	**Skeletal system (1)**	Delivering,	Tests, class

				using teaching aids and discussion	participation, attendance
28	2	Knowledge	**Skeletal system (1)**	Delivering, using teaching aids and discussion	Tests, class participation, attendance

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Comparative anatomy For chordate. Muhammad Abdel Hadi Ghali and Hussein Abdel Moneim, second edition 2014. 1.Comparative anatomy, function, evolution. Kardong, K. V. (2012). 2. Comparative anatomy of the vertebrates.Kent, G. C. and Carr, R. K. (2001).
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Theoretical mycology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Is mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hour / 6 units
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Professor Doctor Alyaa Abdel Al-Ridha Hanash E-mail: **alalqurashy@uowasit.edu.iq**
8. Course Objectives

Course Objectives	• Identify the foundations and classification systems of fungi and their environments • The types of fungi • Reproduction methods and life cycles

9. Teaching and Learning Strategies

Strategy	Teaching strategies are the transition of students from the stage of focusing on skills in the primary grades to the stage of focusing on the contents of all secondary grades. You find that students face many demands in order to read information from textbooks , and they also take notes during lectures, Work is also done independently, in addition to expressing understanding, whether through written structures or paper-and-pencil tests. On the other hand, you find that there are students who will not be able to acquire important academic skills, and this results in a lack of mastery of the content that leads to failure. But you find that there are many students who have a problem with learning , including studentswho face difficulties in learning, but through education strategies the individual can achieve the success he desires to achieve, and that is through knowledge as well as skills.

10. Course Structure

Week	hours	Required learning outcomes	Unit or subject name	Learning method	Evalution method
1	2	Knowledge	Introduction to fungi, General features, physical structure	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
2	2	Knowledge	Methods of nutrition and growth in Fungi occurrence and methods of reproduction	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
3	2	Knowledge	The importance of fungi and their ecological relationships	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
4	2	Knowledge	New classification of fungi And the principles used in classification	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
5	2	Knowledge	Kingdom: Protista	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
6	2	Knowledge	Phylum: Myxomycota	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
7	2	Knowledge	Studying the general features, classes, orders, models of these fungi and their life cycle	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
8	2	Knowledge	Phylum: Plasmodiphoromycota	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
9	2	Knowledge	Class: Plasmodiophoromycetes	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
10	2	Knowledge	Study of their characteristics and examples of some fungi and their life cycles	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
11	2	Knowledge	Kingdom: Stramenopila	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
12	2	Knowledge	Phylum: Oomycota	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
13	2	Knowledge	Study their characteristics and classify them into important orders and families	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
14	2	Knowledge	Order: Saproleginales Study its features, importance and life cycle	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance

15	2	Knowledge	study of the characteristics of common fungi and a study of the principles used for their classification	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
16	2	Knowledge	Order: Peronosporales 1-Family: Pythiaceae	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
17	2	Knowledge	Study its characteristics and life cycle and give examples	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
18	2	Knowledge	Family: Peronosporaceae Downy mildew fungi	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
19	2	Knowledge	Study its characteristics and life cycle and give examples	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
20	2	Knowledge	Family: Albuginaceae Its characteristics, life cycle, and examples	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
21	2	Knowledge	Kingdom: Fungi	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
22	2	Knowledge	Phylum: Chytridiomycota	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
23	2	Knowledge	Its features and importance, giving an example of it and its life cycle	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance
24	2	Knowledge	Phylum: Zygomycota	Giving the lecture, using teaching aids and discussion	Tests, class participation, attendance

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Mycology/ Practical part
2. Course Code:
F33
3. Semester / Year:
Annual / 2025-2024
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Daily attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 Hours / 6 units
7. Course administrator's name (mention all, if more than one name)
Name: : Assistant Professor Doctor Alyaa Abdel Al-Ridha Hanash E-mail: alalqurashy@uowasit.edu.iq Name:Lecturer Hawraa salah saad Email: hsaad@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- learn the basics and system of classification of fungi and their environments 2- 2-type of mycology 3- Reproduction methods and life cycles
9. Teaching and Learning Strategies	
Strategy	-Teaching strategies are the transition of students from the stage of focusing on skills in th primary grades to the stage of focusing on the contents of all secondary grades. You find that students face many demands in order to read information from textbooks, and th also take notes during lectures, Work is also done independently, in addition to expressing understanding, whether through written structures or paper-and-pencil tests. On the other hand, you find that there are students who will not be able to acquire important academic skills, and this results in a lack of mastery of the content that leads to failure. But you find that there are many students who have a problem with learning, including students who face difficulties in learning, but through education strategies the individual can achieve the success he desires to achieve, and that is through knowledge as well as skills

10. Course Structure

Week	Hours	RequiredLearning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge	Nutritional media preparation	Delivering	Exams and

			of dextrose agar medium	educational discussion tools and discussing in addition to using microscopes in the practical aspect.	quick exams and assignments
2	2	Knowledge	Equipment and tools used	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
3	2	Knowledge	Isilation of fungi from their various sources water ,air soil.	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
4	2	Knowledge	Study and examination of types of boards and hyphae	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
5	2	Knowledge	Study and examination of fungal species in the fungal farm	Delivering educational discussion tools and discussing in addition to using microscopes in	Exams and quick exams and assignments

				the practical aspect.	
6	2	Knowledge	Classification of fungi Jellyfungi e.g Arcyria stemonitis physarum hemitrichia	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
7	2		**First exam**		
8	2	Knowledge	a Division Class: plasmodiophomycetes Order:plasmodiopgorales e.g. plasmodiophora brassicae e.g. spongospora subterranea	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
9	2	Knowledge	a:Division Sub-division: mastigomycotina Class: chytridiomycetes e.g. synchytrium endobioticum	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
10	2	Knowledge	sub-division: mastigomycotina class:oomycetes order: saprolegniales e.g.saprolegnia order: peronosporales family: pythiaceae e.g. pythium, phytophthora	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
11	2	Knowledge	a :Division Sub –division: mastigomycotina Class:oomycetes Order:peronosporales	Delivering educational discussion tools and discussing in	Exams and quick exams and assignments

			Family:peronoosporaceae e.g.1- plasmoopara 2- peronospora 3- Bremia 4- Sclerospora 5- Basidiophora	addition to using microscopes in the practical aspect.	
12	2	Knowledge	a:Division Sub-division: mastigomycotina Class: oomycetes Order: peronosporales Family:Albuginaceae e.g. Albugo candida	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
13	2	Knowledge	Eumycota :Division Sub-division : zygomycotina Class: zygomycetes Order: mucorales e.g. Rhizoppus, Mucor order:Entomophthorales e.g. Entomopthora muscae	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
14	2	Knowledge	a :Division Sub-division: Ascomycotina Class: Hemiascomycetes Order: Endomycetales e.g. Saccharomyces cerevisiae e.g. Schizosaccharomyces octosporus order: Taphrina deformans Taphrina pruni	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
15	2	Knowledge	s:Class Order:Eurotiales e.g Aspergillus e.g. Penicillium	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
16	2	Knowledge	s :Class Order:Erysiphaled	Delivering educational	Exams and quick exams

			e.g. Erysiphe e.g. Sphaerotheca e.g. Uncinula e.g. microsphaera e.g. podosphaera e.g. phyllactinia	discussion tools and discussing in addition to using microscopes in the practical aspect.	and assignments
17	2	Knowledge	a :Division Sub- division : Ascomycotina Class: pyrenomycetes Order: sphaeriales Family: claviceps purpuea	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
18	2	Knowledge	a :Divission Sub-division :Ascomyctina Class:Discomycetes Order: pezizales e.g. peziza, morchella, helvella	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams andassignments
19	2	Knowledge	s :Class Order: Tuberrales e.g. Tuber, Tefezia, Trimania order: phacidiales e.g.Phytisma	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
20	2	Knowledge	**s** :Class Order: Helotiales e.g. Sclerotinia- fructigena e.g Pseudopeziza- medicaginis	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments

21	2	Knowledge	Eumycota:Division Sub- division:Ascomycotina Class: Loculoascomycetes Order: pleosporales e.g. Venturia inaequalis	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
22	2	Knowledge	a :Divission Sub-division:Basidiomycota Class:Teliomycetes Order: Uredinales(Rust fungi) e.g. Puccinia graminis	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
23	2	Knowledge	s :Class Order:Ustilaginales(smutfungi) Family:Ustilaginaceae e.g. Ustilago nuda e.g. Ustilago maydis	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments
24	2	Knowledge	e .g. Mycorrhiza	Delivering educational discussion tools and discussing in addition to using microscopes in the practical aspect.	Exams and quick exams and assignments

11. Course Evaluation	
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily and monthly oral exams. And editing, discussing and evaluating reports and seminars , etc.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Basics of Zoology Book
Main references (sources)	Mycology was written by dr ibrahim al-suhaili

Recommended books and references (scientific journals, reports...)	Fundamentals of mycology and its plant diseases written by dr Mehdi majid al shukri Introductory Mycology 1996By Alexpolus Introduction to Fungi By John Webster 1980.
Electronic References, Websites	

Course Description Form

1. Course Name:
Genetics
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Prof.Dr.Intisar Hussein ahmed Email: ihusain@uowasit.edu.iq
8. Course Objectives

Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	Cognitive strategy

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Introduction to Genetics and Mendelism	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was	Mendelian crosses	Using the pen and board and data	Exams and quick exams and

		presented in the lecture		show	assignments
3	2	The student learns what was presented in the lecture	Gene interactions and deviations from Mendelian ratios	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Mendel's laws and their deviations	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Simple Mendelian inheritance in man	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Linkage crossing-over and chromosome mapping	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Multiple alleles and pseudoalleles	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Sex-linked inheritance	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Determination of sex	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Mutations, their mechanisms	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student	Chromosomal	Using the pen and	Exams and quick

		learns what was presented in the lecture	aberrations in man	board and data show	exams and assignments
12	2	The student learns what was presented in the lecture	Cytoplasmic inheritance in animals	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Population genetics and Hardy-Weinberg law	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Animal breeding types and their applications	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Quantitative genetics	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	DNA structure	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	DNA double Hilux	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	DNA replication	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Gene expression	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the	Transcription	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
21	2	The student learns what was presented in the lecture	Translation	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Regulation of gene expression	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Genomics-1	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Genomics-2	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Evolution	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Theory of evolution-1	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Theory of evolution-2	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Genetic diseases	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Exam	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns	Review	Using the pen and	Exams and quick

		what was presented in the lecture		board and data show	exams and assignments

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of Genetics 1993
Main references (sources)	Selected lectures on genetics
Recommended books and references (scientific journals, reports...)	Principles of Genetics , Editors : D.P.,Snustad and M.J.,Simmons (2000) . - Interactive concepts in Biology . Tenth Edition Version (4.0) CD
Electronic References, Websites	

Course Description Form

1. Course Name:	
Genetics / Practical part	
2. Course Code:	
3. Semester / Year:	
2024/ 2025	
4. Description Preparation Date:	
1/11/2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total) :	
60 hours per year and 30 units per week	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof.Dr.Intisar Hussein ahmed Email: ihusain@uowasit.edu.iq Name : Assist.Lecturer Zainab Kadhim Hashim Email: zhashim@uwasit.edu.iq	
8. Course Objectives	
Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects

	of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.

9. Teaching and Learning Strategies

Strategy	Cognitive strategy

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Introduction to Genetics and Mendelism	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Mendelian crosses	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	First Mendel's law	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	First Mendel's law issues	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Relation between alleles	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Back cross and test cross	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the	Back cross and test cross issues	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
8			**Exam**		
9	2	The student learns what was presented in the lecture	Lethal genes	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Lethal genes issues	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Multiple alleles and psedualleles	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Second Mendel's law	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Using square method to determine genetic structure ratio	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Second Mendel's law issue	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Gene interaction Dominance types	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Dominance types issues	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the	ABO blood types	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
18	2	The student learns what was presented in the lecture	ABO blood types issues	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Sex – linked inheritance	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Sex – linked genetic diseases	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Sex – linked genetic issues	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Linkage and Crossing over	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Population generics and Hardy – Weinberg ’s law	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Drosophila insect and distinction between male and female	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	DNA structure DNA double helix structure	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the	DNA replication	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
27	2	The student learns what was presented in the lecture	Quantitative genetics	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	A Practical application to calculate the frequency of some genes in a group of students such as the characteristics of connected and separate earlobes and blood groups	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Exam	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Principles of Genetics 1993
Main references (sources)	Selected lectures on genetics
Recommended books and references (scientific journals, reports...)	Principles of Genetics , Editors : D.P.,Snustad and M.J.,Simmons (2000) . - Interactive concepts in Biology . Tenth Edition Version (4.0) CD
Electronic References, Websites	

Course Description Form

1. Course Name:
Algae&Archaea
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hour / 6Units
7. Course administrator's name (mention all, if more than one name)
Name: Akmam Ali Habeeb Email: akhabeeb@uowasit.edu.iq
8. Course Objectives

Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness o the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student	Introduction to	Using the pen and	Exams and

		learns what was presented in the lecture	Algae Science _Introduction to the World of Algae The Importance of Algae	board and data show	quick exams and assignments
2	2	The student learns what was presented in the lecture	Classification of the plant groups	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Blue-green algae phylum Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic position	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Examples of the blue-green algae phylum	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Green algae division Vegetative structure Primitive and true cell Colonies of all types Sexual and	Using the pen and board and data show	Exams and quick exams and assignments

			asexual reproduction patterns of all types Taxonomic position		
6	2	The student learns what was presented in the lecture	Examples of the green algae division	Using the pen and board and data show	Exams and quick exams and assignments
7	2		First semester exam		
8	2	The student learns what was presented in the lecture	Euglena algae Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Examples of Euglena algae	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Brown algae, classification, Methods of reproduction Models of brown algae	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Pyrophyte algae Vegetative structure Primitive and	Using the pen and board and data show	Exams and quick exams and assignments

			true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic status		
12	2	The student learns what was presented in the lecture	Red algae Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic status	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	- Mosses - Vegetative structure - Primitive and true cell - Colonies of all types - Sexual and asexual reproduction patterns of all types - Taxonomic status	Using the pen and board and data show	Exams and quick exams and assignments

14	2	The student learns what was presented in the lecture	Ferns Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic position	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Seeds Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Second semester exam	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Environmental and economic importance of algae	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented	Bases of classification -Cells	Using the pen and board and data show	Exams and quick exams and assignments

		in the lecture	-Colonies		
19	2	The student learns what was presented in the lecture	Photosynthesis Process - Plastids - Comparison of the shape and type of plastids in different algal phyla - Pigments - Preparation of reports by students	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Cell wall structure -Amycine centers -Flagellar systems -Mitochondria -Golgi bodies	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Reproduction -Sexual -Asexual -Life Cycles	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	-Growth -Hermoconia -Propgules	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	The role of algae in biofuel production	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Movement in algae - Jad Cove phenomenon	Using the pen and board and data show	Exams and quick exams and assignments

25	2	The student learns what was presented in the lecture	Some selected genera	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Dinomates	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Models of mosses	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Models of ferns	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	the interview	Using the pen and board and data show	Exams and quick exams and assignments

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Measurement and evaluation references
Main references (sources)	Measurement and Evaluation book by Dr. Abdel Salam Jawdat
Recommended books and references (scientific journals, reports...)	The book of educational measurement and evaluation by Dr. Shaima Sobhi Abu Shaaban and Asaad Hussein Atwan
Electronic References, Websites	

Course Description Form

1. Course Name:
Algae&Achaea / Practical part
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hour / 6 Units
7. Course administrator's name (mention all, if more than one name)
Name: Amjaad Majeed Ali Email: amjali@uowasit.edu.iq
8. Course Objectives

Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	This course aims to provide the student with ba information, spread the culture of student evaluation syster raise awareness of the importance of evaluation in all aspe of the student's personality (cognitive - emotional - skil prepare questionnaires and opinion polls for the studen evaluation of the professor, the course, and the exam, a train students to perform course evaluations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

1	2	The student learns what was presented in the lecture	Introduction to Algae Science Introduction to the World of Algae The Importance of Algae	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Classification of the plant groups	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Blue-green algae phylum Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic position	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Examples of the blue-green algae phylum	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Green algae division Vegetative structure Primitive and true cell Colonies of all	Using the pen and board and data show	Exams and quick exams and assignments

			types Sexual and asexual reproduction patterns of all types Taxonomic position		
6	2	The student learns what was presented in the lecture	Examples of the green algae division	Using the pen and board and data show	Exams and quick exams and assignments
7	2		First semester exam		
8	2	The student learns what was presented in the lecture	Euglena algae Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Examples of Euglena algae	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Brown algae, classification, Methods of reproduction Models of brown algae	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was	Pyrophyte algae	Using the pen and board and data	Exams and quick exams and

		presented in the lecture	Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic status	show	assignments
12	2	The student learns what was presented in the lecture	Red algae Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic status	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	- Mosses - Vegetative structure - Primitive and true cell - Colonies of all types - Sexual and asexual reproduction patterns of all	Using the pen and board and data show	Exams and quick exams and assignments

			types - Taxonomic status		
14	2	The student learns what was presented in the lecture	Ferns Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns of all types Taxonomic position	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Seeds Vegetative structure Primitive and true cell Colonies of all types Sexual and asexual reproduction patterns	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Second semester exam	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Environmental and economic importance of algae	Using the pen and board and data show	Exams and quick exams and assignments

18	2	The student learns what was presented in the lecture	Bases of classification -Cells -Colonies	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Photosynthesis Process - Plastids - Comparison of the shape and type of plastids in different algal phyla - Pigments - Preparation of reports by students	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Cell wall structure -Amycine centers -Flagellar systems -Mitochondria -Golgi bodies	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Reproduction -Sexual -Asexual -Life Cycles	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	-Growth -Hermoconia -Propgules	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	The role of algae in biofuel production	Using the pen and board and data show	Exams and quick exams and assignments

24	2	The student learns what was presented in the lecture	Movement in algae - Jad Cove phenomenon	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Some selected genera	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Dinomates	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Models of mosses	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Models of ferns	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	the interview	Using the pen and board and data show	Exams and quick exams and assignments

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Measurement and evaluation references
Main references (sources)	Measurement and Evaluation book by Dr. Abdel Salam Jawdat
Recommended books and references (scientific journals, reports...)	The book of educational measurement and evaluation by Dr. Shaima Sobhi Abu Shaaban and Asaad Hussein Atwan
Electronic References, Websites	

Course Description Form

1. Course Name:
General entomology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hour / 6 Units
7. Course administrator's name (mention all, if more than one name)
Name : Firas Rahi Handhal Email : Fhandhal@uowasit.edu.iq
8. Course Objectives

Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	-Thinking and Discussion Method - E-learning (Explanatory Videos and Electronic Tests) -Practical Tests

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Introduction to Entomology (History of Entomology)	Using the pen and board and data show	Exams and quick exams and assignments

2	2	The student learns what was presented in the lecture	Introduction to entomology (general characteristics, importance and damage)	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Insect body areas (head and appendages)	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Insect body, (Types of mouth parts)	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	The chest and its appendages	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	The abdomen and its appendages	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Metamorphosis and its types, larvae and its types	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Digestive system (its components and parts)	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Digestion and excretion	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student	Respiratory	Using the pen	Exams and quick

		learns what was presented in the lecture	system- structure and function	and board and data show	exams and assignments
11	2	The student learns what was presented in the lecture	Circulatory system – structure and function	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	The nervous system – structure and function	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	The excretory system - the excretory organs and their functions	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Reproductive system	Using the pen and board and data show	Exams and quick exams and assignments
15	2		**Exam**		
16	2	The student learns what was presented in the lecture	Male and female reproductive system	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Pheromones and understanding	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Morphological transformation	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Classification of insect groups	Using the pen and board and data show	Exams and quick exams and assignments
20		The student	Classification of	Using the pen	Exams and quick

	2	learns what was presented in the lecture	insect groups Location of insects in the Kingdom Animal	and board and data show	exams and assignments
21	2	The student learns what was presented in the lecture	Classification of insect groups (Arthropoda)	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Classification of insect groups (Order: Orthoptera Order: Phasmatodea)	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Order : Dictyoptera Order : Isoptera	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Order :Dermaptera	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Order :Empioptera Order :Psocoptera Order :Malophaga	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Growth and reproduction in insects	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Embryonic Development	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Pest control basics and methods	Using the pen and board and data show	Exams and quick exams and assignments
29		The student	Review	Using the pen	Exams and quick

	2	learns what was presented in the lecture		and board and data show	exams and assignments
30	2	Test	Exam	Exam	Exam

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Basics of insect classification Radwan Muhammad Tawfiq 2010
Main references (sources)	General Entomology Book, Prof. Dr. Osama Baharith, Umm Al-Qura University.
Recommended books and references (scientific journals, reports...)	Entomology References
Electronic References, Websites	Electronic library of insects.

Course Description Form

1. Course Name:
General entomology / Practical part
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1/11/2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours / 6 Units
7. Course administrator's name (mention all, if more than one name)
Name : Firas Rahi Handhal Email : Fhandhal@uowasit.edu.iq Name : Israa Jalil Hussein Email : israahussein@uowasit.edu.iq
8. Course Objectives

Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.
9. Teaching and Learning Strategies	
Strategy	-Thinking and Discussion Method - E-learning (Explanatory Videos and Electronic Tests) -Practical Tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what	Introduction to Entomology and	Using the pen and board and	Exams and quick exams

		was presented in the lecture	general characteristics of Insects, Position in the Arthropod Phylum	data show	and assignments
2	2	The student learns what was presented in the lecture	General examination of five arthropod classes and comparison based on external morphology	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Insect feeding Insect habitats, Collection Methods, Net Types, and Other Tools	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Insect Killing, Mounting, and Preservation Methods	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	External Morphology Body Wall, Layers, and Appendages	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Body Regions Head, Antennae, and Their Types	Using the pen and board and data show	Exams and quick exams and assignments
7	2		**Exam**		
8	2	The student learns what was presented in the lecture	Mouthparts and Their Types	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was	Thorax Thoracic Segments, Leg Types	Using the pen and board and data show	Exams and quick exams and assignments

		presented in the lecture	Wings and Wing Venation Types		
10	2	The student learns what was presented in the lecture	Abdomen Abdominal Segments, Abdominal Appendages Male and Female Genitalia, Stinging Apparatus	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Internal Anatomy Digestive System and Associated Glands	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Respiratory System and Types of Spiracles	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Central Nervous System	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Circulatory System	Using the pen and board and data show	Exams and quick exams and assignments
15	2	Test	Male and Female Reproductive System	Exam	Exam
16	2	The student learns what was presented in the lecture	Growth and Metamorphosis Immature Stages: Egg, Nymph, Terrestrial Nymph, and Aquatic Nymph	Using the pen and board and data show	Exams and quick exams and assignments

17	2	The student learns what was presented in the lecture	Larvae and Their Types Nymphs and Their Types	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Types of Metamorphosis in Insects (Ametabolous, Paurometabolous, Hemimetabolous, Holometabolous, Hypermetamorphosis)	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Insect Classification Training Students on Using Insect Identification Keys at the Order Level	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Training Students on Using Orders at the Family Level Dividing Students into Groups and Providing Collection Tools	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Studying Models of Insect Orders and Their Families	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Classification of Insect Groups	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Classification of Insect Groups (Order Dermaptera)	Using the pen and board and data show	Exams and quick exams and assignments

24	2	The student learns what was presented in the lecture	Classification of Insect Groups (Order Orthoptera)	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Classification of Insect Groups ،Order (Hymenoptera)	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Classification of Insect Groups (Order Diptera)	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Classification of Insect Groups (Order Lepidoptera)	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Classification of Insect Groups (Order Coleoptera)	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments
30	2	Test	Second Semester Exam	Exam	Exam

11.Course Evaluation

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

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Basics of insect classification Radwan Muhammad Tawfiq 2010
Main references (sources)	General Entomology Book, Prof. Dr. Osama Baharith, Umm Al-Qura University.
Recommended books and references (scientific journals, reports...)	Entomology References
Electronic References, Websites	Electronic library of insects.

Course Description Form

1. Course Name:
Environmental and pollution
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours / 6 units
7. Course administrator's name (mention all, if more than one name)
Name: Asst.prof.dr.Tayseer Shamran Email: tshamran@uowasit.edu.iq
8. Course Objectives

Course Objectives	• The student learns about the components of the environment and ecosystem • Preserving the environment • Learn about the effect of plants on the environment and the effect of the environment on living organisms
9. Teaching and Learning Strategies	
Strategy	Teaching and learning strategies include discussions, cooperative learning, critical thinking techniques, project-based learning, active learning, effective use of technology, and time and task management.

10. Course Structure

Week	Hours	Unit or subject name	Required Learning Outcomes	Learning method	Evaluation method
1	2	Definition of Ecology relationship between the	Understanding the definition of ecology and its relationship with other sciences.	Using the pen and board and data show	Exams and quick exams and assignments

		environment and other sciences			
2	2	Classification of Ecology	Understanding the classification of ecology and its different branches.	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The Ecosystem Components of the Ecosystem	Understanding the ecosystem and identifying its components.	Using the pen and board and data show	Exams and quick exams and assignments
4	2	Biotic Components in the Ecosystem Explanation of the Ecosystem	Understanding biotic components and explaining the ecosystem's structure and function.	Using the pen and board and data show	Exams and quick exams and assignments
5	2	Abiotic Components in the Ecosystem Explanation of the Biotic Components in the Ecosystem	Understanding abiotic components and explaining the role of biotic components in the ecosystem.	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The biogeochemical cycles The Carbon Cycle in the Ecosystem	Understanding biogeochemical cycles and explaining the carbon cycle in the ecosystem.	Using the pen and board and data show	Exams and quick exams and assignments
7	2	Nitrogen cycle Phosphorus Cycles	Understanding the nitrogen cycle Phosphorus Cycles in the Ecosystem	Using the pen and board and data show	Exams and quick exams and assignments
8	2	Tolerance Laws and Limiting Factors	Understanding tolerance laws and identifying limiting factors in ecosystems.	Using the pen and board and data show	Exams and quick exams and assignments

9	2	Impact of Climate Change on Biodiversity Adaptation to Climate Change	Understanding the impact of climate change on biodiversity and strategies for adaptation.	Using the pen and board and data show	Exams and quick exams and assignments
10	2	Renewable Energy and Its Role in Climate Change	Understanding the role of renewable energy in mitigating climate change.	Using the pen and board and data show	Exams and quick exams and assignments
11		Exam			
12	2	Ecosystem function– Energy flow through ecosystem Food Chain Food web	Understanding ecosystem function, energy flow, and the concepts of food chains and food webs.	Using the pen and board and data show	Exams and quick exams and assignments
13	2	Ecological pyramids Productivity of ecosystem Primary productivity	Understanding ecological pyramids, ecosystem productivity, and primary productivity.	Using the pen and board and data show	Exams and quick exams and assignments
14	2	Secondary productivity Net Productivity	Understanding secondary productivity and net productivity in ecosystems.	Using the pen and board and data show	Exams and quick exams and assignments
15	2	Population Population growth models Semelparity and Iteroparity	Understanding population dynamics, growth models, and the concepts of semelparity and iteroparity.	Using the pen and board and data show	Exams and quick exams and assignments
16	2	community Meaning of community Concept of ecological	Understanding the meaning of a community, the concept of ecological dominance, and the	Using the pen and board and data show	Exams and quick exams and assignments

		dominance Ecotone	significance of ecotones.		
17	2	Ecological Succession Pioneer species Primary ecological succession and secondary ecological succession	Understanding ecological succession, the role of pioneer species, and the differences between primary and secondary ecological succession.	Using the pen and board and data show	Exams and quick exams and assignments
18	2	Climax Community Habitat and the ecological Niche	Understanding the concept of climax community, habitat, and ecological niche.	Using the pen and board and data show	Exams and quick exams and assignments
19	2	Forests play a vital role in maintaining ecological balance. Protection of terrestrial ecosystems.	Understanding the vital role of forests in maintaining ecological balance and the importance of protecting terrestrial ecosystems.	Using the pen and board and data show	Exams and quick exams and assignments
20	2	Environmental Pollution Enumeration of Its Types	Understanding environmental pollution and enumerating its various types (air, water, soil, noise, etc.).	Using the pen and board and data show	Exams and quick exams and assignments
21	2	Identify the Types of Environmental Pollutant	Identifying the types of environmental pollutants, such as air pollutants, water pollutants, soil pollutants, noise pollutants, and radioactive pollutants.	Using the pen and board and data show	Exams and quick exams and assignments

22	2	Water Pollution Sources of Water Pollution: Causes and Effects	Understanding water pollution, its sources, causes, and the effects on the environment and human health.	Using the pen and board and data show	Exams and quick exams and assignments
23	2	Impact of Water Pollution on Human Health	Understanding the impact of water pollution on human health, including waterborne diseases and long-term health risks.	Using the pen and board and data show	Exams and quick exams and assignments
24	2	Air Pollution Sources of Air Pollution Health Effects of Air Pollution on Humans	Understanding air pollution, its sources, and the health effects it has on humans, such as respiratory issues, heart diseases, and long-term illnesses.	Using the pen and board and data show	Exams and quick exams and assignments
25	2	Climate Change and Air Pollution: The Relationship Between Them	Climate change exacerbates air pollution, as pollutants contribute to global warming and environmental degradation..	Using the pen and board and data show	Exams and quick exams and assignments
26	2	Explanation of the Greenhouse Effect Ozone Layer	The greenhouse effect occurs when gases like carbon dioxide trap heat in Earth's atmosphere, leading to warming	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The Environmental Impact of Global Warming on Wildlife	Global warming impacts wildlife by altering habitats, causing species to migrate, and disrupting food chains, leading to	Using the pen and board and data show	Exams and quick exams and assignments

			threats to biodiversity.		
28	2	Pollution and Environmental Degradation in Agricultural Lands	Pollution and degradation in agricultural lands result from excessive pesticide and fertilizer use, causing soil depletion, water contamination, and biodiversity loss.	Using the pen and board and data show	Exams and quick exams and assignments
29	2	Soil Pollution Remediation Methods	Understanding soil pollution, identifying its causes, and exploring remediation methods	Using the pen and board and data show	Exams and quick exams and assignments
30	2	Radioactive Pollution Methods for Treating Radioactive Pollution	Radioactive pollution can be treated through containment, decontamination, and using radiation-absorbing materials.	Using the pen and board and data show	Exams and quick exams and assignments
		Exam			

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	(Requrid textbook) 1- Al-Hajami, Muhammad Abdel-Wali. (2016). Animal Physiology (1 and 2) - Practical Experiments Guide. Sana'a University. 2- Al-Hajami, Muhammad Abdel-Wali. (2016). General Biology (1) - Practical Experiments Guide. Sana'a University. 3- Al-Tarrawah, Hanan Hamad; Al-Muqaimi, Saleh bin Ahmed. (2009). Biology Laboratory Manual. Amman, Dar Al-
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

	Manhaj for Publishing and Distribution. 4- Shaheen, Jamil Noman. (2008). Biology Laboratory - Scientific Methods Series in Educational Laboratories (3rd ed.), Amman, Dar Al-Manhaj for Publishing and Distribution. 5- Al-Alawji, Sabah Nasser. (2007). Science and sects of organs. Dar Al-Fikr for Printing, Publishing and Distribution, second edition. Ammaan Jordan. 6- Al-Alawji, Sabah Nasser. (2014). Science and sects of organs. Dar Al-Fikr Al-Fikr for printing, publishing and distribution, third edition. Ammaan Jordan. 7- Ashir, Abdul Rahim Muhammad (1982). Basics of animal physiology. Ministry of Higher Education and Scientific Research, Baghdad. 8- Al-Taie, Nada Saad Naji; Al-Saeedi, Muhammad Khalil Ibrahim. 2016. Guide to laboratory experiments - animal environmental physiology. Ministry of Higher Education and Scientific Research, Al-Qasim Green University, Iraq. 9- Physiology of animal environment/adaptation to environmental conditions. Ibrahim Bishara Muhammad, University of Kordofan - Faculty of Natural Resources and Environmental Studies. Knut Schmidt-Nielsen. Animal Physiology: -10 Adaptation and Environment. (5th edition). Cambridge University Press, 1997

Course Description Form

1. Course Name:					
Environmental and pollution / Practical part					
2. Course Code:					
3. Semester / Year:					
The third stage 2024/ 2025					
4. Description Preparation Date:					
1\11\2024					
5. Available Attendance Forms:					
Self-attendance					
6. Number of Credit Hours (Total) / Number of Units (Total) :					
2 Hours /week (Practical Part) / 6 Unit					
7. Course administrator's name (mention all, if more than one name)					
Name:zahraa Naeem khalaf Email: zkhalaf@uowasit.edu.iq					
8. Course Objectives					
Course Objectives	This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive - emotional - skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.				
9. Teaching and Learning Strategies					
Strategy	Teaching and learning strategies include discussions, cooperative learning, critical thinking techniques, project-based learning, active learning, effective use of technology, and time and task management.				
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns	Definition of	Using the pen and	Exams and quick

		what was presented in the lecture	Ecology Ecosystem Basic Physical and Chemical Measurements The Most Important Environmental Factors	board and data show	exams and assignments
2	2	The student learns what was presented in the lecture	Measured in the Field are The Most Important Environmental Factors Measured in the Laboratory Are Environmental Factors and Equipment Used in Environmental Studies	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Biotic Factors Equipment Used for Collecting Aquatic Environmental	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Samples Equipment Used for Collecting Terrestrial Environmental	Using the pen and board and data show	Exams and quick exams and assignments

			Samples		
5	2	The student learns what was presented in the lecture	Devices and Equipment Used in the Study of Abiotic	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Environmental Factors Temperature Thermometers Types of Thermometers Principle of Operation of the Device	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Humidity Devices used to measure relative humidity	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Psychrometer Basic operation of the device	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Wind Manual wind vane Laboratory wind vane	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Basic working principle of the device Atmospheric pressure Atmospheric pressure measuring	Using the pen and board and data show	Exams and quick exams and assignments

			devices		
11	2	The student learns what was presented in the lecture	The Soil Soil Components Types of Soil Soil Texture	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Determining Soil Texture Determining Soil Texture in the Field Determining Soil Texture in the Laboratory	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Measuring the size of the spaces between the soils Soil Porosity How to work Measuring soil moisture Soil Moisture How to work Determining the color of the soil	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	How to work Determining the amount of carbonate in the soil Soil Carbonate How to work Measuring the pH of the soil Soil pH	Using the pen and board and data show	Exams and quick exams and assignments

15	2	The student learns what was presented in the lecture	Population Estimations Field Study Laboratory Study Laboratory Work Method	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Environmental Pollution Natural Pollution	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	The most important natural pollutants Artificial Pollution The most important industrial pollutants Nature of Pollutants	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Oxygen-Demanding Wastes Pathogens	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Nutrients Thermal Pollution Heavy Metals	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Determining Biological Oxygen Requirement Factors on which BOD depends	Using the pen and board and data show	Exams and quick exams and assignments

21	2	The student learns what was presented in the lecture	How to determine BOD Chemical Oxygen Consumption	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Acidity and Alkalinity of Water Samples	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Conducting the Experiment	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Acid Rain Effects of Acid Rain	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	An experiment to find out the extent of the effect of acid rain on plants	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Determining water hardness	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Types of hardness Water is classified	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	affecting water hardness Calculating	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was	water hardness How to work	Using the pen and board and data	Exams and quick exams and

		presented in the lecture		show	assignments
30	2		Exam		
11.Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc					
12.Learning and Teaching Resources					
Required textbooks (curricular books, if any)			- (Requrid textbook) 1- Al-Hajami, Muhammad Abdel-Wali. (2016). Animal Physiology (1 and 2) - Practical Experiments Guide. Sana'a University. 2- Al-Hajami, Muhammad Abdel-Wali. (2016). General Biology (1) - Practical Experiments Guide. Sana'a University. 3- Al-Tarrawah, Hanan Hamad; Al-Muqaimi, Saleh bin Ahmed. (2009). Biology Laboratory Manual. Amman, Dar Al-Manhaj for Publishing and Distribution. 4- Shaheen, Jamil Noman. (2008). Biology Laboratory - Scientific Methods Series in Educational Laboratories (3rd ed.), Amman, Dar Al-Manhaj for Publishing and Distribution. 5- Al-Alawji, Sabah Nasser. (2007). Science and sects of organs. Dar Al-Fikr for Printing, Publishing and Distribution, second edition. Ammaan Jordan. 6- Al-Alawji, Sabah Nasser. (2014). Science and sects of organs. Dar Al-Fikr Al-Fikr for printing, publishing and distribution, third edition. Ammaan Jordan. 7- Ashir, Abdul Rahim Muhammad (1982). Basics of animal physiology. Ministry of Higher Education and Scientific Research, Baghdad. 8- Al-Taie, Nada Saad Naji; Al-Saeedi, Muhammad Khalil Ibrahim. 2016. Guide to laboratory experiments - animal environmental		

	physiology. Ministry of Higher Education and Scientific Research, Al-Qasim Green University, Iraq. 9- Physiology of animal environment/adaptation to environmental conditions. Ibrahim Bishara Muhammad, University of Kordofan - Faculty of Natural Resources and Environmental Studies. 10- Knut Schmidt-Nielsen. Animal Physiology: Adaptation and Environment. (5th edition). Cambridge University Press, 1997
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Scientific research method
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
2 working hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Rehab Abdulrazzaq Abdulhassan Email: rhassan@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Cognitive dimension: (a) Provides the student with ideas, information, data and basic principles of the topics of this subject in terms of their emergence and role in improving and developing the teaching process. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional dimension: (a) Helping the student develop his abilities and tendencies towards understanding the topics of this subject. (b) Developing the student's attitudes and interests towards understanding the basic principles of this subject and employing them in the field of education (teaching). 3- Psychomotor dimension (skills): (a) Developing the student's ability to master the skill of investigating the facts, basics and principles of this subject into practical performance practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in his field of work after graduation.

9. Teaching and Learning Strategies	
Strategy	Thinking and Discussion Method E-learning (Explanatory Videos and Electronic Tests) Practical Tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns Knowledge of microbiology and how to handle samples and knowledge of safety and security symbols in the laboratory	Historical introduction Methods of acquiring knowledge through the date.	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
2	2	The student learns Knowledge of the devices and tools used in the laboratory	Types of thinking Scientific laws Steps of the scientific method	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
3	2	The student learns Knowledge of the sterilization and disinfection process and the materials used in it	Steps of scientific thinking Basic characteristics of scientific research	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
4	2	The student learns Knowledge of the shapes of bacteria, their characteristics and classification	Steps for preparing scientific research, foundations for choosing the research problem, methods for choosing the research topic	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

5	2	The student learns Knowledge of the components of the culture medium and the purpose of their use	Review previous research Designing the research plan and methodology	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
6	2	The student learns Knowledge of the steps for preparing culture media	**Reading** **Stages of reading, conditions for reading in research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
7	2	The student learns Knowledge of how to isolate bacteria using culture media Test	Methods of storing information, how to write research	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
8	2	**Written Exam**			
9	2	The student learns Knowledge of the staining process and how it occurs	Classification of scientific research method (historical - survey - case study method - experimental - statistical - content analysis)	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
10	2	The student learns Knowledge of the types of stain	Samples and information collection tools (Definition of sample - types of samples - Steps for selecting research samples)	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
11	2	The student learns Knowledge of the components of the stain and how it works	Tools for collecting information and data in scientific research: (Sources and documents - questionnaire – Interview – Observation) Extracurricular activity.	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

12	2	The student learns Knowledge of the components of the stain and how it works	Ways to display information: (structural - tables - graphs - Photographs - electronic lectures)	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
13	2	The student learns Knowledge of the types of movement in bacteria and the arrangement of flagella in them	The final form of the search: Research sections - research language And its method - the physical form of research -Discussing the research	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
14	2	The student learns Knowledge of methods for detecting bacterial movement using wet preparation and mixing with oil	Publishing scientific research: Purpose of publication Methods of presenting scientific research results	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
15	2	The student learns Knowledge of methods for detecting bacterial movement using the hanging drop method	**Types of publication in scientific journals: (Full search - short search -Research observation - Case report - Graphic publishing - Research review)**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
16	2	The student learns Knowledge of methods for detecting bacterial movement using the stab method in a semi-solid medium	**Research language and method The technical and physical form of research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

17	2	The student learns Knowledge of methods for detecting bacterial resistance to antibiotics	**Discussing research Researcher's requirements while discussing research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
18	2	The student learns Knowledge of how to control bacterial growth using chemicals	**Design and write wall posters**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
19	2	The student learns Knowledge of some types of pathogenic bacteria	**Errors in making labels**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
20	2	The student learns Knowledge of diagnosing bacteria using some chemical tests	**Electronic stickers Electronic poster basics**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
21	2	The student learns Knowledge of diagnosing bacteria using some chemical tests	**Conferences and oral lectures**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
22	2	Knowledge of bacterial growth stages	**Methods of presenting information about scientific research:**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
23	2	Knowledge of pathogenic viruses, their forms and methods of reproduction	**Scientific behavior of the researcher and student**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
24	2	Knowledge of the most important viral diseases	**Using the library in scientific research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

25	2	Knowledge of methods for controlling the growth of microorganisms	**Sources of information and their use in research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
26	2	Knowledge of how to isolate microorganisms in water	**The Internet and scientific research**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
27	2	Knowledge of how to isolate microorganisms in soil	**Arrangement of sources**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
28	**Written Exam**				

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1 -Basics of scientific research, Dr. Ahmed Soliman 2000 2- Scientific Research Methodology 1999
Main references (sources)	Lectures on scientific research methodology Prof. Dr. Iyad Ismail 2019
Recommended books and references (scientific journals, reports...)	Introduction to scientific research methodology Dr. Rahim Younis Karo Al-Azzawi 2008
Electronic References, Websites	

Course Description Form

1. Course Name:	
Curricula and teaching methods	
2. Course Code:	
3. Semester / Year:	
2024/ 2025	
4. Description Preparation Date:	
1\11\2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total) :	
2 hours theoretical	
7. Course administrator's name (mention all, if more than one name)	
Name: Nisreen Nasser Khalaf Email: nisreenkhalaf@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	1-The cognitive dimension: (a) It provides the student with ideas, information, data, and principles that enable them to acquire effective teaching skills. (b) That the student understands the concepts of the subject and is able to apply them practically. 2- The emotional dimension: (a) Developing students' attitudes and inclinations towards the subject of teaching methods (b) Appreciating the role of scientists and researchers in what has been achieved in the field of modern teaching methods. 3- The emotional dimension: (a) Developing students' attitudes and inclinations towards the subject of teaching methods (b) Appreciating the role of scientists and researchers in what has been achieved in the field of modern teaching methods.
9. Teaching and Learning Strategies	

Strategy	Style of thinking and discussion Blended learning (through the use of technology in the teaching process represented by devices Tablets in educational activities and the use presentations in lecture presentation.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Science _The concept of science _Characteristics of science _Components of science _Objectives of science	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Terms in teaching methods _Teaching methods _Methods _Strategies _Standards of good teaching method	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student	Educational	Using the pen and	Exams and quick

		learns what was presented in the lecture	goals - Its types _ Its fields _ Its levels	board and data show	exams and assignments
4	2	The student learns what was presented in the lecture	Behavioral goals _Forming goals _Conditions _Standards	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Describing basic teaching methods _Lecture method _Method of discussion _Method of interrogation _Method of solving problems _Cooperative learning _Computer-based learning	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Related teaching methods By teamwork _Learning together, peer taught _Think, Pair, Share method	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	First semester exam	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Related teaching methods Laboratory work _Learning by	Using the pen and board and data show	Exams and quick exams and assignments

			discovery _Method of scientific presentations _ Sakman method		
9	2	The student learns what was presented in the lecture	Related teaching methods By developing thinking _Brainstorming _Solving problems _Directed investigation	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Related teaching methods Building and organizing knowledge _Concept maps _Mental map -k.w.l.h	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Related teaching methods With fun and entertainment _Scientific stories _ Picture puzzles	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Lesson planning _Planning concept _The importance of planning for teaching _The foundations of	Using the pen and board and data show	Exams and quick exams and assignments

			good planning _Types of teaching plans _Daily plan _Preparing the daily study plan _The importance of preparing the study		
13	2	The student learns what was presented in the lecture	Special education _Its concept _Her goals _The difference in teaching people with disabilities Ordinary and special needs	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Methods of teaching people with special needs _Direct teaching strategy _Playing learning strategy _Methods of teaching the gifted _Focused question strategy _Sequential maps strategy	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Curriculum _The ancient and modern concept of the curriculum _The logical	Using the pen and board and data show	Exams and quick exams and assignments

			and psychological organization of the curriculum		
16	2	The student learns what was presented in the lecture	Second semester exam	Using the pen and board and data show	Exams and quick exams and assignments

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Book of modern teaching curricula and methods Teaching and learning strategies
Main references (sources)	nothing
Recommended books and references (scientific journals, reports…)	nothing
Electronic References, Websites	

Course Description Form

1. Course Name:
Educational guidance and mental health
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours / 4units
7. Course administrator's name (mention all, if more than one name)
Name: rawwa mohsin Email: roaammmm615@gmail.com
8. Course Objectives

Course Objectives	Identifying the meaning of counseling and psychological well-being for students, directing them with the necessary information about mental health and respiratory health standards, applying behavioral counseling theories, and focusing on psychological and social characteristics and foundations.
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	A general lecture on psychological counselling	Using the pen and board and data show	Exams and quick exams and assignments

2	2	The student learns what was presented in the lecture	Guidance and guidance	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	The emergence and development of psychological counselling	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Development of counseling concepts	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Justifications for psychological counselling	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	The relationship between guidance and direction	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Philosophical foundations of guidance	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Psychological and social foundations	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student	Trait focus	Using the pen and	Exams and quick

		learns what was presented in the lecture	theory	board and data show	exams and assignments
10	2	The student learns what was presented in the lecture	Areas of psychological counseling	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Psychological counseling methods	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Psychoanalytic theory	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Self theor	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Means of collecting information	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Behavioral theory	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Psychology of classroom learning	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Meaning of mental health	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the	Manifestations of mental health	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
19	2	The student learns what was presented in the lecture	Mental health standards	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Appearances of a healthy person	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Manifestations of an abnormal person	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Psychological crises	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Duties of the educational advisor	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Student problems	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	The relationship between guidance and direction	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	The relationship between guidance and direction	Using the pen and board and data show	Exams and quick exams and assignments

27	2	The student learns what was presented in the lecture		Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Note	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Behavioral theory	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns what was presented in the lecture	Exim	Using the pen and board and data show	Exams and quick exams and assignments

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Educational and psychological guidance in educational institutions Dr. Rafida Al-Hariri
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name
Animal physiology
2. Course Code:
3. Semester / Year:
2024\2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
23 hours per year and 4 units per week
7. Course administrator's name (mention all, if more than one name)
Name: **Pro.Dr Nisreen Habib** Email: **nhabeeb@uowasit.edu.iq**
8. Course Objectives

Course Objectives	Giving the student the ability to understand the functions and physiology of his body's various systems . • Providing the student with the ability to draw blood samples and perform various blood analyses. • Providing the student with the ability to dissect laboratory animals . • Giving the student the ability to evaluate an individual's health through his ability to read various tests.
9. Teaching and Learning Strategies	
Strategy	Theoretical lectures and group discussions for the purpose of facilitating the explanation of material, addition to use of diagrams and illustrations.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1&2	1	The student learns what was presented in the lecture	Principles of physiology	Using the pen and board and data show	Exams and quick exams and assignments
3&4&5	1	The student learns what was presented in the lecture	Endocrinology	Using the pen and board and data show	Exams and quick exams and assignments
6&7	1	The student learns what was presented in the lecture	Urinary system physiology	Using the pen and board and data show	Exams and quick exams and assignments
8			**Exam**		
9&10	1	The student learns what was presented in the lecture	Physiology of circulatory system	Using the pen and board and data show	Exams and quick exams and assignments
11	1	The student learns what was presented in the lecture	physiology of respiratory system	Using the pen and board and data show	Exams and quick exams and assignments
12	1	The student learns what was presented in the lecture	Digestive system	Using the pen and board and data show	Exams and quick exams and assignments
13&14	1		Physiology of nervous system		
15			**Exam**		
16	1	The student learns what was presented in the lecture	Muscular system	Using the pen and board and data show	Exams and quick exams and assignments
17	1	The student learns what was	physiology Animal	Using the pen and board and data	Exams and quick exams and

		presented in the lecture	histology Cellular respiration and energy release	show	assignments
18	1	The student learns what was presented in the lecture	Physiological effect of temperature and its regulation Electricity and depolarization Synapses and transmission of nerve impulses	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Template

Course Name: Animal Physiology / Practical Section
Course Code:
Semester/Year: 2024-2025
Date of Description Preparation: 1\11\2024
Attendance Options: Daily attendance

Credit Hours: 24 hours / 2 hours practical
Course Coordinator (If more than one, list names): Name: M. Marwa Thaer Abd Email: marwa.abud@uowasit.edu.iq

Course Objectives

The objectives of studying the practical section of Animal Physiology are summarized in the following points:

1. **Understanding the Vital Functions of Organs:**
    - **Cognitive Objectives:**
      Studying how different organs in the animal body function, such as the heart, kidneys, digestive system, and respiratory system.
2. **Practical Application of Theoretical Concepts:**
    - Linking theoretical knowledge with practical experiments for a deeper understanding of physiological functions.
3. **Conducting Scientific Experiments:**
    - Learning how to perform scientific experiments using various devices and tools to study the physiological activity of organs.
4. **Data Analysis and Interpretation:**
    - Developing skills in analyzing and interpreting experimental data to understand biological processes.
5. **Recognizing Physiological Changes:**
    - Studying how the body responds to environmental changes or diseases through physiological alterations.
6. **Developing Practical Skills:**
    - Learning to use modern techniques and laboratory tools employed in physiology.
7. **Real-World Application:**
    - Utilizing acquired knowledge in fields such as veterinary medicine, agriculture, and applied biology.

8. **Understanding System Interactions:**
    - Exploring how various biological systems interact to ensure the continuity of vital functions.

Teaching and Learning Strategies

- **Discussion and Thought Analysis:** Encouraging critical thinking and active participation.
- **E-Learning:** Utilizing explanatory videos and online quizzes.
- **Practical Examinations:** Hands-on assessments to enhance learning outcomes.

Course Structure

Week	Hours	Learning Outcomes	Unit/Topic Name	Teaching Method	Evaluation Method
1	2	Cognitive	General Principles of Physiology	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
2	2	Cognitive	Blood	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
3	2	Cognitive	Blood Smear	Blackboard, Display Screen, and E-Learning	Daily oral and written exams

Week	Hours	Learning Outcomes	Unit/Topic Name	Teaching Method	Evaluation Method
4	2	Cognitive	Measuring Hemoglobin and ESR of RBCs	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
5	2	Cognitive	Osmotic Fragility of RBCs in Hypotonic Solutions	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
6	2	Cognitive	Counting White Blood Cells	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
7	2	Examination	Midterm Exam		
8	2	Cognitive	Differential White Blood Cell Count	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
9	2	Cognitive	Blood Typing	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
10	2	Cognitive	Anatomical Sites of Endocrine System	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
11	2	Cognitive	Techniques for Measuring Hormone Levels in Blood	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
12	2	Cognitive	Respiratory System	Blackboard, Display	Daily oral and written

Week	Hours	Learning Outcomes	Unit/Topic Name	Teaching Method	Evaluation Method
			Physiology	Screen, and E-Learning	exams
13	2	Cognitive	Digestion and Enzymes	Blackboard, Display Screen, and E-Learning	Daily oral and written exams
14	2	Examination	Final Exam		

Course Assessment

Annual Assessment Methodology:

- First semester exam: 5 marks + 1 mark for attendance and weekly exams.
- Second semester exam: 5 marks + 1 mark distributed for attendance and weekly exams.
- Discussion and evaluation of reports, seminars, etc.

Learning Resources and References

1. **Recommended Textbooks:**
    - None listed
2. **Primary References:**
    - Animal Physiology by Dr. Sabah Nasser Al-Allouji
3. **Supplementary References (Scientific Journals, Reports, etc.):**
    - Animal Physiology (1): A Guide to Practical Experiments
4. **Electronic References and Websites:**
    - Not specified

Course Description Form

1. Course Name:
Plant Physiology / Theoretical Part
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer. Haider Abbas Fadhel Email: haidera.f@uowasit.edu.iq
8. Course Objectives

Course Objectives	**1- Teaching students the basics of plant physiology.** **2- Recent scientific discoveries to develop this material.** **3- Teaching students about the developments related to this subject to enable them to teach the topics of this subject in middle and middle school.**
9. Teaching and Learning Strategies	
Strategy	Discussion and ask questions, giving the chance students to participate by speaking, reading a translation.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	A general introduction to plant physiology	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Solutions And colloidal systems	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Water relations For plant	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns	Osmotic and	Using the pen and	Exams and quick

		what was presented in the lecture	water potential And pressure And the relationship between them	board and data show	exams and assignments
5	2	The student learns what was presented in the lecture	absorption Water and its transport In the plant	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Transpiration	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Mineral nutrition	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Effective absorption	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Photosynthesis	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Light interactions	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Dark interactions	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Phloem transport	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Breathing	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Plant growth and formation	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	The growth and plant hormones	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Gibberellins and cytokines	Using the pen and board and data show	Exams and quick exams and assignments
17		The student learns what was presented in the lecture	EPSCC and ethylene	Using the display screen and e-learning programs	Daily and electronic exam
18	2	The student learns what was presented in the lecture	Absisc and ethylene	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns	Photoperiod	Using the pen and	Exams and quick

		what was presented in the lecture		board and data show	exams and assignments
20	2	The student learns what was presented in the lecture	Phytochrome	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Biological sustainability of microorganisms and their role in plant growth and physiological characteristics	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Seed germination and latency	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (methodology, if any)	Book of Plant Physiology by Robert
Main references (sources)	M. Devlin and Francis Wissam Translated by Dr. Tahrir Ramadan and Dr. Hanaa Fadel
Recommended supplementary books and references (scientific journals, reports, etc.)	Modern scientific research published in journals such as the Iraqi Journal of Agricultural Sciences and international journals specializing in plant science
Electronic references, internet sites	SABRAO Journal of Breeding Genetics www.sabraojournal.org

Course Description Form

13. Course Name:
Plant Physiology / Practical Part
14. Course Code:
15. Semester / Year:
2024/ 2025
16. Description Preparation Date:
1\11\2024
17.Available Attendance Forms:
Self-attendance
18.Number of Credit Hours (Total) / Number of Units (Total) :

60 hours per year and 30 units per week

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

Name: Lecturer: Haider Abbas Fadhel
Email: haidera.f@uowasit.edu.iq
Name: Assist. Lecturer: Hayder Atta Abdul-Jabbar
Email: hayder-a.b@uowasit.edu.iq
Name: Rasha Amer Hassoun
Email: rhassoon@uowasit.edu.iq

20. Course Objectives

Course Objectives	**4- Teaching students the basics of plant physiology.** **5- Recent scientific discoveries to develop this material.** **6- Teaching students about the developments related to this subject to enable them to teach the topics of this subject in middle and middle school.**

21. Teaching and Learning Strategies

Strategy	Discussion and ask questions, giving the chance to students participate by speaking, reading and translation.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Introduction and instructions on: Solutions, their types and preparation methods (aqueous solutions, for gases, for solids)	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Methods of expressing solution concentrations and related laws - Molar concentration - Molar concentration	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	- Standard concentration - Percentage concentrations%	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns	Acids, bases and	Using the pen	Exams and quick

		what was presented in the lecture	salts	and board and data show	exams and assignments
5	2	The student learns what was presented in the lecture	Buffer solutions and preparation of samples thereof	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Colloidal systems, their properties and their role	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Water relations Diffusion	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	osmotic cell membranes	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Water potential measurement	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Plasmolysis	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Transpiration - Structure of the stomatal apparatus - Study of the distribution of stomata on the leaf surface - Measuring the rate of transpiration using a potometer - Measuring the rate of transpiration using cobalt leaves - Measuring the rates of transpiration by estimating water loss	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Mineral nutrition Conducting experiments to estimate some essential elements	Using the pen and board and data show	Exams and quick exams and assignments

13	2	The student learns what was presented in the lecture	Photosynthesis Chromatography method Estimation of chlorophyll a, b, xanthophyll and carotene concentration	Using the pen and board and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Measuring the rate of photosynthesis by bubble count method using aquatic plants	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Detection of starch as a marker for photosynthesis by iodine method in plant leaves	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Respiration Inferring the occurrence of respiration in plant seeds	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Measurement of respiration rate by titration method for seeds	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Enzymes Study of extracting amylase enzyme from barley seeds and the effect of the enzyme on starch decomposition	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Total soluble carbohydrates in cauliflower tissue	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Tropisms Phototropism in plants Graditropism in plants	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Plant Hormones Gibberellins	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented	Kinetin hormone	Using the pen and board and	Exams and quick exams and

		in the lecture		data show	assignments

23. Course Evaluation

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

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Plant physiology book robert
Main references (sources)	M. Devlin Francis Witham Translated by Dr. Edited by Ramadan and Dr. Hanaa Fadel
Recommended books and references (scientific journals, reports…)	Plant physiology book robert
Electronic References, Websites	M. Devlin Francis Witham Translated by Dr. Edited by Ramadan Dr. Hanaa Fadel

Course Description Form

1. Course Name:
Immunology
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
2.hour
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Rehab abdulrazzaq abdulhassan **Email: rhassan@uowasit.edu.iq**
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive – emotional – skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**
9. Teaching and Learning Strategies	
Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1&2	1	The student learns what was presented in the lecture	A historical overview of immunology	Using the pen and board and data show	Exams and quick exams and assignments
3&4&5	1	The student learns what was presented in the lecture	Physical, chemical and biological barriers. innate or non-specific immune system	Using the pen and board and data show	Exams and quick exams and assignments
6	1	The student learns what was presented in the lecture	Acquired or specific immune system	Using the pen and board and data show	Exams and quick exams and assignments
7	1	The student learns what was presented in the lecture	Antigen and immunogen	Using the pen and board and data show	Exams and quick exams and assignments
		EXAM			
8	1	The student learns what was presented in the lecture	Cytokines	Using the pen and board and data show	Exams and quick exams and assignments
9	1	The student learns what was presented in the lecture	phagocytosis	Using the pen and board and data show	Exams and quick exams and assignments
10	1	The student learns what was presented in the lecture	inflammation	Using the pen and board and data show	Exams and quick exams and assignments
11	1	The student learns what was presented in the lecture	Acute phase response	Using the pen and board and data show	Exams and quick exams and assignments
12	1	The student learns what was presented in the lecture	Complement system	Using the pen and board and data show	Exams and quick exams and assignments
13	1	The student learns what was presented in the lecture	Lymphatic tissues &organs	Using the pen and board and data show	Exams and quick exams and assignments
		EXAM			
14&15	1	The student learns what was presented in the	Major histocompatibility complex	Using the pen and board and data show	Exams and quick exams and assignments

		lecture			
16&17	1	The student learns what was presented in the lecture	Kinetics of immune response Regulating the immune response	Using the pen and board and data show	Exams and quick exams and assignments
18	1	The student learns what was presented in the lecture	Primary &secondary immune response Activation T cells and B cells	Using the pen and board and data show	Exams and quick exams and assignments
19	1	The student learns what was presented in the lecture	Immune tolerance	Using the pen and board and data show	Exams and quick exams and assignments
20	1	The student learns what was presented in the lecture	Autoimmune disease	Using the pen and board and data show	Exams and quick exams and assignments

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

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	عبد الله عبدالله طاهر.2012.تبسيط علم المناعة
Main references (sources)	الوافي في علم المناعة
Recommended books and references (scientific journals, reports…)	Clinical immunity/lippincote Immunology/kuppi
Electronic References, Websites	

Course Description Form

1. Course Name:
Immunology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024

5. Available Attendance Forms:

Self-attendance

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

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

Name: Huda Bader Hussein
Email: hhussein@gmail.uowasit.edu.iq

8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive – emotional – skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**

9. Teaching and Learning Strategies

Strategy	

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Immunity &its divisions	Using the pen and board and data show	Exams and quick exams and assignments
2&3	2	The student learns what was presented in the lecture	Organs& tissues of immune system -Central lymphoid organ -Peripheral lymphoid organs	Using the pen and board and data show	Exams and quick exams and assignments

4&5	2	The student learns what was presented in the lecture	Handling with laboratory animals. Administration of antigens	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Differential smears	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Collection of serum and plasma	Using the pen and board and data show	Exams and quick exams and assignments
9	2		1st semester exam		
10&11	2	The student learns what was presented in the lecture	-Intraperitoneal phagocytosis -Nitrotetrazolium test(NBT)	Using the pen and board and practical application	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Antigens- antibody interactions	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Agglutination reactions	Using the pen and board and practical application	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	Precipitation reactions	Using the pen and board and data show	Exams and quick exams and assignments
15&16	2	The student learns what was presented in the lecture	Complement fixation reactions	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Bactericidal power of serum	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	-ELISA -Basic materials used in assay -Assay steps -Types of ELISA with results explanation	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	-Detection of immunoglobulin(IG) single radial diffusion method	Using the pen and board and data show	Exams and quick exams and assignments
21	2	test	2 nd semester exam		
22&23	2	The student learns what was presented in the lecture	Inflammation &its types	Using the pen and board and practical application	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Hypersensitivity test	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	د. حسن, عالية قهرمان و آخرين. (1990). اسس علم المناعة. وزارة دار الكتب للطباعة والنشر - بغداد د. السعد , مها رؤوف. (1990) . علم المناعة , وزارة التعليم العالي
Recommended books and references (scientific journals, reports…)	Clinical immunity/lippincote Immunology/kuppi
Electronic References, Websites	

Course Description Form

1. Course Name:
Microbiology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Dunya talib mahdi Email: dtalib@uowasit.edu.iq
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive–emotional – skills), prepare questionnaires and opinion polls for the student's assessment of the professor, the course, and the exam, and train students to perform course evaluations.**
9. Teaching and Learning Strategies	
Strategy	**Style of thinking and discussion** **E–learning (required videos and electronic tests)** **Laboratory experiment**

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	Microbiology is known to many scientists who are interested in the environment Explains the theories of the emergence of microorganisms	Learn about microbiology and a historical overview of the subject	Using the pen and board and data show	Exams and quick exams and assignments
2	2	Explains microbiology	Theories of the emergence of microorganisms The spread of microorganisms	Using the pen and board and data show	Exams and quick exams and assignments
3	2	Classification of microorganisms	Classification of microorganisms_ And an introduction to its most important groups	Using the pen and board and data show	Exams and quick exams and assignments
4	2	General definition of bacteria	Characteristics of bacteria and their locations	Using the pen and board and data show	Exams and quick exams and assignments
5	2	Recognizes the morphological and appearance characteristics of bacteria	Study of formal and appearance specifications	Using the pen and board and data show	Exams and quick exams and assignments
6	2	Anatomy of bacteria_	Bacterial anatomy (bacterial wall, organelles inside it) in addition to the structures surrounding the bacterial wall	Using the pen and board and data show	Exams and quick exams and assignments
7	2	Monthly exam			
8	2	Sterilization concept	Sterilization concept	Using the pen and board and data show	Exams and quick exams and assignments
9	2	Bacterial pigmentation mechanism and its parts	Pigmentation of flagella, spores, capsule, and internal	Using the pen and board and data show	Exams and quick exams and assignments

			organelles educational process		
10	2	Definition of culture media for bacterial growth	Explaining the components of culture media and their characteristics for each type of bacteria, along with how to prepare	Using the pen and board and data show	Exams and quick exams and assignments
11	2	Explains the physiology of microorganisms	Microbiology physiology Bacterial growth curves and stages	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student explains the importance of microbial genetics	Microbial genetics	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns about the laws that determine the control of microorganisms	Control of microorganisms	Using the pen and board and data show	Exams and quick exams and assignments
14	2	Explains the importance of antibiotics on microorganisms	Antibiotics	Using the pen and board and data show	Exams and quick exams and assignments
15	2	Monthly exam			
16	2	Defines applied microbiology	Microorganisms in application (air, water, soil) Microorganisms found in milk and food	Using the pen and board and data show	Exams and quick exams and assignments
17	2	Definition of seeps	An overview of filtrates, their general specifications, chemical composition, types, and reproduction	Using the pen and board and data show	Exams and quick exams and assignments
18	2	Algae and its forms	An overview of algae, their general specifications, chemical composition, types, and	Using the pen and board and data show	Exams and quick exams and assignments

			reproduction		
19	School application				
20					
21					
22					
23	2	Fungi and their forms	An overview of fungi, their general specifications, chemical composition, types, and reproduction	Using the pen and board and data show	Exams and quick exams and assignments
24	2	Explains the growth of microorganisms	Factors affecting the growth of microorganisms	Using the pen and board and data show	Exams and quick exams and assignments
25	2	Monthly exam			
26	2	Introduction to viruses	Viruses have different types and ways of reproducing and spreading	Using the pen and board and data show	Exams and quick exams and assignments
27	2	Virus pathogenesis	The most important viral diseases, their methods of transmission, and the mechanism of causing the disease	Using the pen and board and data show	Exams and quick exams and assignments
28	2	Bacterial pathogenicity	The most important bacterial diseases, their methods of transmission and spread, and the mechanism of causing the disease	Using the pen and board and data show	Exams and quick exams and assignments
29	2	Genetic engineering	Introducing genetic engineering and its role in the development of science	Using the pen and board and data show	Exams and quick exams and assignments
30	2	Monthly exam			

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Microbiology Hamid Majeed Al-Zaidi
Main references (sources)	Principles of microbiology Dr. Fayez Aziz Al-Ani Microbiology Dr. Abdulnabi Jawaid
Recommended books and references (scientific journals, reports…)	References for microbiology
Electronic References, Websites	Electronic library of microbiology

Course Description Form

1. Course Name:	
Practical Microbiology	
2. Course Code:	
3. Semester / Year:	
2024/ 2025	
4. Description Preparation Date:	
1\11\2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total) :	
2 working hours per week	
7. Course administrator's name (mention all, if more than one name)	
Name: Assistant teacher, Mustafa Naeem Nuhair Email: mnuhair@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	1- Cognitive dimension: (a) Provides the student with ideas, information, data and basic principles of the topics of this subject in terms of their emergence and role in improving and developing the teaching process. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional dimension: (a) Helping the student develop his abilities and tendencies towards understanding the topics of this subject.

	(b) Developing the student's attitudes and interests towards understanding the basic principles of this subject and employing them in the field of education (teaching). 3- Psychomotor dimension (skills): (a) Developing the student's ability to master the skill of investigating the facts, basics and principles of this subject into practical performance practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in his field of work after graduation.

9. Teaching and Learning Strategies

Strategy	Thinking and Discussion Method E-learning (Explanatory Videos and Electronic Tests) Practical Tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns Knowledge of microbiology and how to handle samples and knowledge of safety and security symbols in the laboratory	**General Laboratory Instructions and Guidelines** - Microbiology - The Importance of Studying Microbiology - Handling Samples - Safety and Security Symbols in the Laboratory	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
2	2	The student learns Knowledge of the devices and tools used in the laboratory	**Tools and equipment used in the laboratory** - Some devices used in laboratories - Some tools used in laboratories	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
3	2	The student learns Knowledge of the sterilization	**Sterilization and disinfection** - Definition of sterilization and	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

		and disinfection process and the materials used in it	sterilizers - Definition of disinfection and disinfectants - Mechanism of the sterilization process - Chemical and physical methods used in sterilization		
4	2	The student learns Knowledge of the shapes of bacteria, their characteristics and classification	**Phenotype and bacterial clusters** - Definition of bacteria - Characteristics of bacteria - Shapes of bacteria - Classification of bacteria	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
5	2	The student learns Knowledge of the components of the culture medium and the purpose of their use	**Bacterial culture media** - Purpose of use - Components - Classification of culture media	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
6	2	The student learns Knowledge of the steps for preparing culture media	**Steps for preparing culture media**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
7	2	The student learns Knowledge of how to isolate bacteria using culture media Test	**Methods of isolation and identification of Microbiology** - Diagnosis of Microbiology using media Solid, liquid and semi-solid - Signs of growth of microorganisms	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
8	2		**First semester exam**		Written Exam
9	2	The student learns Knowledge of the staining process and how it occurs	**Staining bacteria** - Dyes and their purpose - Staining mechanism	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
10	2	The student learns Knowledge of the types of	**Types of Stain** - Simple Stain - Differentiation Stain - Structure Stain	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

		stain			
11	2	The student learns Knowledge of the components of the stain and how it works	**Staining with Gram stain** - Components of the dye - Method of work	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
12	2	The student learns Knowledge of the components of the stain and how it works	**Staining acid-resistant bacteria** - Components of the dye - Method of work	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
13	2	The student learns Knowledge of the types of movement in bacteria and the arrangement of flagella in them	**Movement of bacteria** - Types of movement in bacteria - Arrangement of flagella	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
14	2	The student learns Knowledge of methods for detecting bacterial movement using wet preparation and mixing with oil	**Methods of detecting bacterial movement** - Wet preparation method - Mixing method with oil	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
15	2	The student learns Knowledge of methods for detecting bacterial movement using the hanging drop method	**The hanging drop method for detecting bacterial movement**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
16	2	The student learns Knowledge of methods for detecting bacterial movement using the stab method in a semi-solid	**The method of stabbing in a semi-solid medium to detect bacterial movement**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

		medium			
17	2	The student learns Knowledge of methods for detecting bacterial resistance to antibiotics	**Sensitivity test in bacteria**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
18	2	The student learns Knowledge of how to control bacterial growth using chemicals	**Chemical control of bacterial growth**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
19	2	The student learns Knowledge of some types of pathogenic bacteria	**Study of some pathogenic bacteria**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
20	2	The student learns Knowledge of diagnosing bacteria using some chemical tests	**Diagnosis by chemical tests**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
21	2		**Second semester exam**		Written Exam
22	2	Knowledge of bacterial growth stages	**Identification of bacterial growth stages**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
23	2	Knowledge of pathogenic viruses, their forms and methods of reproduction	**Viruses** **- Their forms** **- Methods of reproduction** **- Their spread**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
24	2	Knowledge of the most important viral diseases	**The most important viral diseases**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
25	2	Knowledge of methods for controlling the growth of microorganisms	**Control of the growth of microorganisms** **-Physical methods** **- Chemical methods**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

26	2	Knowledge of how to isolate microorganisms in water	**Microbiological examination of water**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
27	2	Knowledge of how to isolate microorganisms in soil	**Microbiological examination of soil**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
28	2	Knowledge of how to isolate microorganisms in food materials	**Microbiological examination of food materials**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
29	2	Knowledge of pathogenic fungi and their methods of reproduction	**Fungi** **- Their forms** **- Methods of reproduction**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
30	2	Knowledge of methods for calculating bacterial numbers	**Methods of enumeration of bacteria**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Practical Microbiology Book
Main references (sources)	Practical Microbiology
Recommended books and references (scientific journals, reports...)	- Medical Microbiology /Jawetz - Medical Microbiology and Immunology/Warren Levinson
Electronic References, Websites	https://accessmedicine.mhmedical.com/

Course Description Form

1. CourseName:
Parasitology
2. CourseCode:
3. Semester/Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5.AvailableAttendanceForms:
Is mandatory
6.NumberofCreditHours(Total)/NumberofUnits(Total) 60 hour
2hour
7.Courseadministrator's name (mentionall,if morethanone name)
Name: suadad bresam khiri sbresam@uowasit.edu.iq
8. Course Objectives

Course Objectives	1.Cognitive dimension: (a) Provides the student with ideas, information, data and basic principles of the topics of this subject in terms of their emergence and their role in improving and developing the teaching process)b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2. Emotional dimension: (a) Helping the student develop his abilities and tendencies towards understanding the topics of this subject)b) Developing the student's tendencies and interests towards understanding the basic principles of this subject and employing them in the field of education (teaching 3. (a): Psychomotor dimension (skills) Developing the student's ability to master the skill of investigating the facts, basics and principles of this subject into practical performance practices that can be observed)b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in his field of work after graduation

9. Teaching and Learning Strategies

Strategy	Thinking and Discussion Method E-learning (Explanatory Videos and Electronic Tests) Practical Tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge	Introduction to Parasitology	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
2	2	Knowledge	Primary Animal Division - Under the Carnivora Division	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
3	2	Knowledge	Continuation under the meat section	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
4	2	Knowledge	Primary Animal Division - Under the Division of Flagellates Intestinal Flagellates and Internal Organs	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
5	2	Knowledge	Under the division of flagellates Hematoflagellates and tissue flagellates Trypanosomes	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
6		. Knowledge	Under the division of flagellates Leishmaniasis	Using the whiteboard, the display screen and e-learning	Daily oral and written exam

7	2	Knowledge	Under the phylum of spores Plasmodium	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
8	2	Knowledge	Under the phylum of spores Toxoplasma and Cryptosporidium Waterborne parasitic diseases Water purification methods for sustainable water	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
9	2	Exam			
10	2	Knowledge	Under the phylum Ciliates Intestinal ciliates Balantidium coli	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
11		Knowledge	Division of Flatworms _Flute worms Liver and bile duct worms	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
12	2	Knowledge	Division of Flatworms _Treated worms Intestinal and lung worms	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
13	2	Knowledge	Platyhelminthes _Fluteworms _Blood vessel worms	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
14	2	Knowledge	Tapeworms _Beef, pig and fish tapeworms	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
15	2	Knowledge	Tapeworms _Hydrocyst worm,	Using the whiteboard,	Daily oral and written

			hookworm and tapeworm	the display screen and e-learning	exam
16	2	Knowledge	Nematode Division Pinworms and Ascaris	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
17-22	Application				
23	2	Exam			
24	2	Knowledge	Nematodes	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
25	2	Knowledge	Hookworms	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
26	2	Knowledge	elephantiasis	Using the whiteboard, the display screen and e-learning	Daily oral and written exam
27		Exam			

11. Course Evaluation
Distributingthescoreoutof100accordingtothetasksassignedtothestudentsuchasdailypreparation,dailyoral,monthly,orwrittenexams,reports..... etc

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Practical Parasitology
2. Course Code:
3. Semester / Year:
2024/ 2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
2 working hours per week
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher,Huda Hadi Raheem Email: Huda-h.r@uowasit.edu.iq
8. Course Objectives

Course Objectives	1- Cognitive dimension: (a) Provides the student with ideas, information, data and basic principles of the topics of this subject in terms of their emergence and role in improving and developing the teaching process. (b) That the student comprehends the concepts contained in this subject and is able to apply them practically. 2- Emotional dimension: (a) Helping the student develop his abilities and tendencies towards understanding the topics of this subject. (b) Developing the student's attitudes and interests towards understanding the basic principles of this subject and employing them in the field of education (teaching). 3- Psychomotor dimension (skills): (a) Developing the student's ability to master the skill of investigating the facts, basics and principles of this subject into practical performance practices that can be observed. (b): Training the student on the basic skills that enable him to invest and employ the concepts and principles of this subject in his field of work after graduation.

9. Teaching and Learning Strategies	
Strategy	Thinking and Discussion Method E-learning (Explanatory Videos and Electronic Tests) Practical Tests

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	**Laboratory diagnosis of parasites**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	**Protozoa** Sarcodina	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	**Sarcodina (complete)**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	**flagellata** Luminal flagellates	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	**Blood and tissue flagellates** Trypanosoma	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	**Blood and tissue flagellates** Leishmania	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	**sporozoa** plasmodium	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	**sporozoa** Toxoplamagondi and cryptosporidium	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Exam		
10	2	The student learns what was presented	**ciliata** Balantidium coli	Using the pen and board and Laboratory experiments and data	Exams and quick exams and assignments

		in the lecture		show	
11	2	The student learns what was presented in the lecture	**Platyhelminthes** Liver Trematoda	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	**intestinal flukes**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	**Blood flukes**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
14	2	The student learns what was presented in the lecture	**Cestoda** pork tapeworm and beef tapeworm and fish tapeworm	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	unilocular hydatid and dwarf tapeworm and Rat tapeworm and *Cat tapeworm*	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	**Nematoda** *Enterobiusvermicularis*	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	**Exam**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	***Ascarislumbricoides and Trichuristrichura***	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	**hookworms**	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	***Wuchereriabancrofti***	Using the pen and board and Laboratory experiments and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	**arthropods parasite**		

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular	Practical Parasitological Book

books, if any)	
Main references (sources)	Practical Parasitological
Recommended books and references (scientific journals, reports...)	- Books in Progress in Parasitology -Clinical Parasitology
Electronic References, Websites	

Course Description Form

1. Course Name:
Molecular Biology
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
23 hours per year and 4 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Prof.Dr.Zafir Hassan Ghali Email: thhasan@uowasit.edu.iq
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive – emotional – skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**
9. Teaching and Learning Strategies	
Strategy	Cognitive strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The student learns what was presented in the lecture	Introduction to molecular biology	Using the pen and board and data show	Exams and quick exams and assignments
2	1	The student learns what was presented in the lecture	Nucleic acids	Using the pen and board and data show	Exams and quick exams and assignments
3	1	The student learns what was presented in the lecture	Properties of nucleic acids	Using the pen and board and data show	Exams and quick exams and assignments
4	1	The student learns what was presented in the lecture	Chromosome and packaging of DNA	Using the pen and board and data show	Exams and quick exams and assignments
5	1	The student learns what was presented in the lecture	Eukaryotic chromosome , telomeres	Using the pen and board and data show	Exams and quick exams and assignments
6	1	The student learns what was presented in the lecture	DNA replication	Using the pen and board and data show	Exams and quick exams and assignments
7	1		Exam		
8	1	The student learns what was presented in the lecture	Mutagenesis and mutations	Using the pen and board and data show	Exams and quick exams and assignments
9	1	The student learns what was presented in the lecture	Gene expression: Transcription	Using the pen and board and data show	Exams and quick exams and assignments
10	1	The student learns what was presented in the lecture	Translation Transcription regulation in prokaryotes	Using the pen and board and data show	Exams and quick exams and assignments
11	1	The student learns what was presented in the lecture	RNA polymerases in eukaryotes	Using the pen and board and data show	Exams and quick exams and assignments
12	1	The student learns what was presented in the lecture	Mechanism of transcription in eukaryotes	Using the pen and board and data show	Exams and quick exams and assignments

13	1	The student learns what was presented in the lecture	DNA cloning	Using the pen and board and data show	Exams and quick exams and assignments
14	1	The student learns what was presented in the lecture	Cloning vectors	Using the pen and board and data show	Exams and quick exams and assignments
15	1	The student learns what was presented in the lecture	Eukaryotic vectors	Using the pen and board and data show	Exams and quick exams and assignments
16	1	The student learns what was presented in the lecture	Genomic libraries	Using the pen and board and data show	Exams and quick exams and assignments
17	1	The student learns what was presented in the lecture	DNA damage and repair mechanisms	Using the pen and board and data show	Exams and quick exams and assignments
18	1	The student learns what was presented in the lecture	DNA repair defects and related diseases	Using the pen and board and data show	Exams and quick exams and assignments
19	1	The student learns what was presented in the lecture	Genome concept	Using the pen and board and data show	Exams and quick exams and assignments
20	1	The student learns what was presented in the lecture	Genetic polymorphism	Using the pen and board and data show	Exams and quick exams and assignments
21	1	The student learns what was presented in the lecture	Genetics of microorganisms	Using the pen and board and data show	Exams and quick exams and assignments
22	1	The student learns what was presented in the lecture	Exam	Using the pen and board and data show	Exams and quick exams and assignments
23	1	The student learns what was presented in the lecture	Review	Using the pen and board and data show	Exams and quick exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular	Principles of Genetics 1993

books, if any)	
Main references (sources)	Selected lectures on genetics
Recommended books and references (scientific journals, reports…)	Molecular Biology. P.C. Turner, A.G. Mclennan, A.D. Bates & M.R.H. White.Schoolof Biological Sciences, University of Liverpool, Liverpool, UK. Second edition. BIOS Scientific Publishers, 2000
Electronic References, Websites	

Course Description Form

1. Course Name:	
Molecular genetics	
2. Course Code:	
3. Semester / Year:	
2024/ 2025	
4. Description Preparation Date:	
1\11\2024	
5. Available Attendance Forms:	
Self-attendance	
6. Number of Credit Hours (Total) / Number of Units (Total) :	
60 hours per year and 30 units per week	
7. Course administrator's name (mention all, if more than one name)	
Name: Mazin Maky Thamer Email: mazin.maky@uowasit.edu.iq	
8. Course Objectives	
Course Objectives	The study of principal molecular events of cells incorporating DNA Replication, Transcription, and Translation in prokaryotic as well as eukaryotic organisms, understanding and performing isolation, extraction, and evaluation of DNA, and the practical use of molecular laboratory equipment.
9. Teaching and Learning Strategies	

Strategy	Cognitive strategy

10. Course Structure:

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student learns what was presented in the lecture	Introduction to Molecular Biology - Definition of Molecular Biology - Its Applications	Thinking style (for all weeks)	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Laboratory Safety - Definition of Laboratory Safety - How to Apply Laboratory Safety		Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	Experiment (1): Extraction of Genomic DNA from Rat Blood		Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	Experiment (1): Extraction of Genomic DNA from Rat Blood		Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	Experiment (2): Genomic DNA Extraction from Plant Tissue		Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Experiment (2): Genomic DNA Extraction from Plant Tissue		Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Experiment (3): Characterization of DNA by Spectrophotometric Assay and Melting		Exams and quick exams and assignments

			Temperature (Tm)		
8	2	The student learns what was presented in the lecture	Experiment (3): Characterization of DNA by Spectrophotometric Assay and Melting Temperature (Tm)		Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	Experiment (4): Agarose Gel Electrophoresis		Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Experiment (5): Polymerase Chain Reaction (PCR)		Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Experiment (5): Polymerase Chain Reaction (PCR)		Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Experiment (5): Polymerase Chain Reaction (PCR)		Exams and quick exams and assignments
13	2		Achievement test		
14	2	The student learns what was presented in the lecture	Experiment (6): Optimization of Annealing Temperature		Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Experiment (7): PCR Troubleshooting		Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Experiment (8): Digestion of DNA with Restriction Enzymes		Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Experiment (8): Digestion of DNA with Restriction Enzymes		Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Experiment (9): Sanger Sequencing		Exams and quick exams and assignments
			Achievement test		

11. Course Evaluation

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

12.Learning and Teaching Resources

Course Description Form

1. Course Name:
Psychological measurement and educational evaluation
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
60 hours per year and 30 units per week
7. Course administrator's name (mention all, if more than one name)
Name: rawaa mohsin Email: ro aammmm 615@gmail.com
8. Course Objectives

Course Objectives	**This course aims to provide the student with basic information, spread the culture of student evaluation systems, raise awareness of the importance of evaluation in all aspects of the student's personality (cognitive – emotional – skills), prepare questionnaires and opinion polls for the student's evaluation of the professor, the course, and the exam, and train students to perform course evaluations.**

9. Teaching and Learning Strategies

Strategy	Brainstorming strategy

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	The student learns what was presented in the lecture	Development of measurement and evaluation	Using the pen and board and data show	Exams and quick exams and assignments
2	2	The student learns what was presented in the lecture	Test concept	Using the pen and board and data show	Exams and quick exams and assignments
3	2	The student learns what was presented in the lecture	The concept of evaluation and evaluation	Using the pen and board and data show	Exams and quick exams and assignments
4	2	The student learns what was presented in the lecture	The concept of measurement and evaluation	Using the pen and board and data show	Exams and quick exams and assignments
5	2	The student learns what was presented in the lecture	The relationship between measurement, testing and evaluation	Using the pen and board and data show	Exams and quick exams and assignments
6	2	The student learns what was presented in the lecture	Psychometric properties	Using the pen and board and data show	Exams and quick exams and assignments
7	2	The student learns what was presented in the lecture	Types of calendar	Using the pen and board and data show	Exams and quick exams and assignments
8	2	The student learns what was presented in the lecture	Measuring scales	Using the pen and board and data show	Exams and quick exams and assignments
9	2	The student learns what was presented in the lecture	The role of evaluation in improving the educational process	Using the pen and board and data show	Exams and quick exams and assignments
10	2	The student learns what was presented in the lecture	Teaching objectives	Using the pen and board and data show	Exams and quick exams and assignments
11	2	The student learns what was presented in the lecture	Measurement and evaluation and its relationship to goal levels	Using the pen and board and data show	Exams and quick exams and assignments
12	2	The student learns what was presented in the lecture	Achievement test	Using the pen and board and data show	Exams and quick exams and assignments
13	2	The student learns what was presented in the lecture	Steps for constructing the achievement test	Using the pen and board and data show	Exams and quick exams and assignments

14	2	The student learns what was presented in the lecture	Preparing a table of specifications	Using the pen and board and data show	Exams and quick exams and assignments
15	2	The student learns what was presented in the lecture	Statistical analysis of paragraphs	Using the pen and board and data show	Exams and quick exams and assignments
16	2	The student learns what was presented in the lecture	Statistical analysis of the essay test	Using the pen and board and data show	Exams and quick exams and assignments
17	2	The student learns what was presented in the lecture	Types of achievement tests	Using the pen and board and data show	Exams and quick exams and assignments
18	2	The student learns what was presented in the lecture	Essay tests	Using the pen and board and data show	Exams and quick exams and assignments
19	2	The student learns what was presented in the lecture	Objective tests	Using the pen and board and data show	Exams and quick exams and assignments
20	2	The student learns what was presented in the lecture	Classification of tests according to method of interpretation	Using the pen and board and data show	Exams and quick exams and assignments
21	2	The student learns what was presented in the lecture	Debug keys	Using the pen and board and data show	Exams and quick exams and assignments
22	2	The student learns what was presented in the lecture	Good test specifications	Using the pen and board and data show	Exams and quick exams and assignments
23	2	The student learns what was presented in the lecture	Honesty and its types	Using the pen and board and data show	Exams and quick exams and assignments
24	2	The student learns what was presented in the lecture	Reliability and calculation methods	Using the pen and board and data show	Exams and quick exams and assignments
25	2	The student learns what was presented in the lecture	Clarity and objectivity	Using the pen and board and data show	Exams and quick exams and assignments
26	2	The student learns what was presented in the lecture	Evaluation other than achievement tests	Using the pen and board and data show	Exams and quick exams and assignments
27	2	The student learns what was presented in the lecture	Cumulative record	Using the pen and board and data show	Exams and quick exams and assignments
28	2	The student learns what was presented in the lecture	Note	Using the pen and board and data show	Exams and quick exams and assignments
29	2	The student learns what was presented in the lecture	Checklists and checklists	Using the pen and board and data show	Exams and quick exams and assignments
30	2	The student learns	the interview	Using the pen and	Exams and quick

		what was presented in the lecture		board and data show	exams and assignments

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Psychological measurement and educational evaluation dDr. Jaafar Abdel Kazem
Main references (sources)	Main references (sources): The book on measurement and evaluation by Dr. Abdel Salam Jawdat and psychological measurement and educational guidance by Dr. Jaafar Abdel Kazem
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
View and apply
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
1\11\2024
5. Available Attendance Forms:
Self-attendance
6. Number of Credit Hours (Total) / Number of Units (Total) :
4 units per week
7. Course administrator's name (mention all, if more than one name)
Name: Asst.Prof.Dr.Mahdi Alwan **Email: malwan@uowasit.edu.iq**
8. Course Objectives

Course Objectives	**This course aims to:** **1. Providing the student-teacher with job information to learn about the meaning of practical education, its importance, goals, and types.** **2. Assisting the student-teacher in clarifying and consolidating the theoretical principles of education, psychology, and academic courses Which he studied in college and put it to experiment.** **3. Helping the student-teacher to recognize his educational role from the observation stage to the individual and group application stage.** **4. Providing the student with general instructions and guidance regarding the teacher's roles within the school.**
9. Teaching and Learning Strategies	
Strategy	1- The lecture 2- Scientific discussions are analytical 3- E-learning 4- Practical application

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2 w.	6	The student learns what was presented in the lecture	- The concept of practical education. - Its importance and objectives. - Ethics of the teaching profession. - Characteristics of a good teacher. - Teacher's duties	theoretical	Discussion and analysis
4 w.	12	The student learns what was presented in the lecture	- Academic and professional teaching skills and their practical application	Theoretical and practical	Discussion and observation form
2 w.	6	The student learns what was presented in the lecture	Practical applications of how to prepare teaching plans	Theoretical and practical	Discussion and feedback
7 w.	21	The student learns what was presented in the lecture	Classroom observations and micro-teaching	theoretical	Discussion, analysis and viewing form
15 w.		The student learns what was presented in the lecture	- Collective student application in schools and discussion of reports Students about the application.	practical	Scientific and educational supervisor form

11. Course Evaluation

The 100th annual cycle is divided into
- 40 marks for the subject professor, divided according to the vocabulary above.
- 30 educational supervisors.
- 30 scientific supervisors.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	View and apply
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	