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

Academic Program and Course Description Guide

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: ...Mosul.....
Faculty/Institute: ..College of Education for Pure Sciences.....
Scientific Department: .. Biology...Department.....
Academic or Professional Program Name: ...Bachelor.....
Final Certificate Name: ... Bachelor of Biology.....
Academic System: …Annual……
Description Preparation Date: 1/9/2023
File Completion Date: 1/9/2023

جامعة الموصل
كلية التربية للعلوم الصرفة
رئيس قسم علوم الحياة

Signature:
Head of Department Name:
Date:

Signature:
Scientific Associate Name:
أ.م.د. ياسر يحيى قاسم
معاون العميد للشؤون العلمية
Date: ٢٠٢٣/٢/٧

The file is checked by: Assist. Prof . Dr. Yassir Shakeeb Mohamed
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date:
Signature:

Approved by the Dean
ا. عميد كلية التربية للعلوم الصرفة

Approval of the Dean

1. Program Vision

1- The department seeks to provide an appropriate scientific environment and develop the level of education at the undergraduate and postgraduate levels.

2- 2- Achieving the pioneering role of the department by contributing to scientific progress and keeping up to date with all new.

2. Program Mission

The department's mission is to graduate high-level educational cadres capable of working in the country institutions and be supportive of the development of society.

3. Program Objectives

1- Preparation of graduates who are scientifically and educationally qualified to work in the field of teaching and providing students with appropriate experiences related to teaching methods.
2- Paying attention to higher studies and carrying out scientific research in order to protect the national wealth (plant, animal and natural environment).
3- Providing scientific expertise in the field of life sciences to all institutions and the private sector.

4. Program Accreditation

Does the program have program accreditation? And from which agency? No

5. Other external influences

Is there a sponsor for the program? Ministry of Higher Education / University of Mosul

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	8	20	10.75	Basic
College Requirements	11	40	21.5	Basic
Department Requirements	24	128	68.8	Basic
Summer Training	1	4	2.15	Application in Schools
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First	EDBI24F101	Biology	2	2
First	EDBI24F102	Plant anatomy	2	2
First	EDBI24F103	Cell biology	2	2
First	EDBI24F104	General chemistry	1	2
First	EDBI24F105	Geology	1	-
First	EDBI24F106	Educational Psychology	2	-
First	EDBI24F107	Computer Science	1	2
First	EDBI24F108	Arabic language	1	
First	EDBI24F109	Basics of Education	2	-
First	EDBI24F110	Human rights and democracy	1	-
First	EDBI24F111	English language	1	-
First	EDBI24F112	Lab. safety	1	-
Second	EDBI24F201	Invertebrates	2	2
Second	EDBI24F202	Plant taxonomy	2	2
Second	EDBI24F203	Histology	2	2
Second	EDBI24F204	Embryology	2	2
Second	EDBI24F205	Biochemistry	2	2
Second	EDBI24F206	Computers	1	2
Second	EDBI24F207	Secondary Education	2	-
Second	EDBI24F208	Psychology of growth	2	-
Second	EDBI24F209	Statistics	2	1
Second	EDBI24F210	English language	1	-
Second	EDBI24F211	Baath crimes	1	-
Third	EDBI24F301	Ecology and pollution	2	2
Third	EDBI24F302	Algae	2	2
Third	EDBI24F303	Chordates	2	2
Third	EDBI24F304	Genetics	2	2
Third	EDBI24F305	Mycology	2	2

Third	**EDBI24F306**	**Teaching methods**	**2**	**-**
Third	**EDBI24F307**	**Mental health and Counselling**	**2**	**-**
Third	**EDBI24F308**	**Principles of scientific research**	**2**	**-**
Third	**EDBI24F309**	**Entomology**	**2**	**2**
Third	**EDBI24F310**	**English language**	**1**	**-**
Fourth	**EDBI24F401**	**Microbiology**	**2**	**2**
Fourth	**EDBI24F402**	**Parasitology**	**2**	**2**
Fourth	**EDBI24F403**	**Plant physiology**	**2**	**2**
Fourth	**EDBI24F404**	**Elective**	**2**	**-**
Fourth	**EDBI24F405**	**Animal Physiology**	**2**	**2**
Fourth	**EDBI24F406**	**Measurement and assessment**	**2**	**-**
Fourth	**EDBI24F407**	**Immunology**	**2**	**1**
Fourth	**EDBI24F408**	**English language**	**1**	**-**
Fourth	**---**	**Observation and application**	**2**	**2**
Fourth	**---**	**Project**	**2**	**-**

8. Expected learning outcomes of the program

Knowledge	
Recruiting teachers	Scientific, professional and technical recruiting with a high standard of cultural and proficiency
Recruiting Scientific researchers	Achieving the basic principles of scientific research and treaching
Reinforcement of Scientific co-operation	Via training courses, workshops and symposia
Post-graduate studies opportunities	Through accomplishing scientific material and scientific teaching methods
Skills	
Teaching skills	Acquiring basic skills of teaching fields of biology
Scientific research skills	Developing scientific research in biology and teaching methods fields
Sustainable development skills	Preservation of state resources from delpletion in all fields
Practical skills	Developing student skills in the laboratory
Ethics	
Developing ethics and useful attitudes	In accordance with religion and habits and costumes
Developing attitudes towards teaching job	To face current challenges and developing overall education system
Establishing the principles of teaching	To limit toe abuse of their responsibilities in scientific and education fields
Disclosing the importance of science in human life	The great role of biology in people life.

9. Teaching and Learning Strategies

Theoretical and practical lecture, conversation and discussion, problem solving,

performing practical experiment, project and application in school

10. Evaluation methods

Quizzes, practical semester exam, mid and final exam in first and second turn, preparing reports and homework.

11.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements /Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Biology	Biotechnology, Plant physiology, ecology, parasitology, algae, comparative anatomy and histology, teaching methods			11	
Assistant professor	Biology	Biotechnology, parasitology, animal physiology, microbiology, teaching methods , plant taxonomy, embryology and histology, Immunology, invertebrates			19	
lecturer	Biology	Ecology, parasitology, algae, histology, embryology, plaant taxonomy, microbiology, bacterial genetics, mycology, biotechnology, animal physiology, entomology,			41	
Assistant lecturer	Biology	Plant physiology, mental health and counselling, animal physiology, ecology and microbiology			13	

Professional Development

Mentoring new faculty members

Using recent scientific references , teaching films , training ciurses and workshops

Professional development of faculty members

Proving new references for the library , participating in specialized training courses

12.Acceptance Criterion

Central admission through the ministry of higher education

13.**The most important sources of information about the program**
Central admission guide, electronic site of the department and internet

14.Program Development Plan
Updating the content of the program according to new references

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	EDBI24F101	Biology	Basic	*	*		*	*	*		*		*		*
	EDBI24F102	Plant anatomy	Basic	*	*		*	*	*		*		*		*
	EDBI24F103	Cell biology	Basic	*	*		*	*	*		*		*		*
	EDBI24F104	General chemistry	Basic	*	*		*						*		
	EDBI24F105	Geology	Basic	*	*		*						*		
	EDBI24F106	Educational Psychology	Basic	*	*	*		*				*	*	*	*
	EDBI24F107	Computer Science	Basic	*	*				*		*				
	EDBI24F108	Arabic language	Basic	*										*	
	EDBI24F109	Basics of Education	Basic	*				*				*	*	*	*
	EDBI24F110	Human rights and democracy	Basic									*	*	*	
	EDBI24F111	English language	Basic	*										*	
	EDBI24F112	Lab. safety	Basic	*											

Second	**EDBI24F201**	**Invertebrates**	**Basic**	*	*		*	*	*		*		*		*
	EDBI24F202	**Plant taxonomy**	**Basic**	*	*		*	*	*		*		*		*
	EDBI24F203	**Histology**	**Basic**	*	*		*	*	*		*		*		*
	EDBI24F204	**Embryology**	**Basic**	*	*		*	*	*		*		*		*
	EDBI24F205	**Biochemistry**	**Basic**	*	*			*			*				*
	EDBI24F206	**Computers**	**Basic**	*	*			*			*				
	EDBI24F207	**Secondary Education**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F208	**Psychology of growth**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F209	**Statistics**	**Basic**	*	*						*				
	EDBI24F210	**English language**	**Basic**		*										*
	EDBI24F211	**Baath crimes**	**Basic**										*	*	*
	EDBI24F301	**Ecology and pollution**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F302	**Algae**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F303	**Chordates**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F304	**Genetics**	**Basic**	*	*	*	*	*	*		*		*		*

	EDBI24F305	**Mycology**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F306	**Teaching methods**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F307	**Mental health and Counselling**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F308	**Principles of scientific research**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F309	**Entomology**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F310	**English language**	**Basic**		*										*
Fourth	**EDBI24F401**	**Microbiology**	**Basic**	*	*	*	*	*	*	*	*		*		*
	EDBI24F402	**Parasitology**	**Basic**	*	*	*	*	*	*	*	*		*		*
	EDBI24F403	**Plant physiology**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F404	**Elective**	**optional**	*	*	*	*	*	*	*	*		*		*
	EDBI24F405	**Animal Physiology**	**Basic**	*	*	*	*	*	*		*		*		*
	EDBI24F406	**Measurement and assessment**	**Basic**	*	*	*		*				*	*	*	*
	EDBI24F407	**Immunology**	**Basic**	*	*	*	*	*	*	*	*		*		*

	EDBI24F408	**English language**	**Basic**	*										*	*
	---	**Observation and application**	**Basic**	*	*	*		*				*	*	*	*
	---	**Project**	**Basic**	*	*	*	*	*	*	*	*		*		*

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

Course Description Form

1. Course Name: Cell Biology

2. Course Code: **EDBI24F103**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Class, Classroom

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

2/2

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

Name: Prof. Dr. Qutaiba Shuaib Al-Nema dr.qutaibashuaib@uomosul.edu.iq
Assistant Prof. Dr. Shifa Mahdi Salih dr.shifasalih@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Cell Biology** • **Knowing the ultrastructure of cells** • **Knowing the function of cellular organelles**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Choosing an appropriate organism for study	Introduction to Cell Biology(The Cell Theory : A Brief History)	Lecture	quizzes
Second	2	Knowing the organism	Cell Chemistry : The Importance of Water	Lecture	quizzes
Third	2	Knowing the organism	The Macromolecules of the Cell (Proteins , poly saccharides).	Lecture	quizzes
Fourth	2	Understanding basic principles	Lipids , Nucleic Acids	experiment	Quiz, report , homework
Fifth	2	Practical application of law	Cells and Organelles :Prokaryotes	Problem solving	Homework
Sixth	2	Understanding basic principles	Viruses and Eukaryotes	Problem solving	Homework
Seventh	2	Understanding basic principles and appl ications	Membranes : Models of Membrane Structure	Problem solving	Homework

Eighth	Mid Exam				
Nineth	2	Understanding basic principles and applications	Transport Across Membrane : Simple Diffusion , Facilitated Diffusion and Active Transport	Lecture	quizzes
Tenth	2	Understanding the basic principles of gene interaction	Exocytosis and Endocytosis.	Lecture	quizzes
Eleventh	2	Understanding th basic principles o gene interaction	The Endomembrane Syster The Endoplasmic Reticulu The Golgi Apparatus	Lecture	quizzes
Twelfth	2	Understanding basic principles and applications	Lysosomes , Vacuoles	Problem solving	Homework
Thirteen	2	Understanding basic principles and applications	Mitochondria	Problem solvi	Homework
Fourteenth	2	Understanding problem solving and crosses	Plastids	Problem solving	Homework
Fifteenth	2	Understanding problem solving a crosses	Cytoskeleton : Actin filaments , Intermediate Filaments, Microtubules	Problem solving	Homework
Sixteenth	2	Understanding the basic principles	Nucleus	Problem solving	Homework
Seventeenth	2	Understanding the basic principles and crosses	Cell Cycle, Introduction to the Cell Cycle	Problem solving	Homework
Eighteenth	2	Understanding problem solving and crosses	Cell Division , Mitosis and Cytokinesis	Problem solving	Homework
Nineteenth	2	Understanding problem solving and crosses	Meiosis.	Problem solving	Homework
Twenty	2	Understanding problem solving and crosses	Apoptosis	Problem solving	Homework
	Final Exam				

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Cell Biology Third Edition by Thomas D. Pollard, William C. Earnshaw, Jennifer Lippincott-Schwartz and Graham T. Johnson (2017) USA. 2. Becker's World of The Cell by Jeff Hardin and

	Gregory Bertoni (2018).Person Education Limited , England.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Molecular Biology of The Cell , Sixth Edition By Bruce Alberts *et al*.,2015, Published by Garland Science, Taylor & Francis Group, LLC, an informa business, 711 Third Avenue, New York, NY 10017, US.
Electronic References, Websites	https://www.nature.com/scitable/topic/cell-biology-13906536/ https://www.ibiology.org/educators-resources

Course Description Form

1. Course Name: Cell Biology

2. Course Code: **EDBI24F103**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Class, Classroom

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

2/2

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

Name: Prof. Dr. Qutaiba Shuaib Al-Nema dr.qutaibashuaib@uomosul.edu.iq
Assistant Prof. Dr. Shifa Mahdi Salih dr.shifasalih@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Cell Biology** • **Knowing the ultrastructure of cells** • **Knowing the function of cellular organelles**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Choosing an appropriate organism for study	Types of microscope	Lecture	quizzes
Second	2	Knowing the organism	Diversity of cells	Lecture	quizzes
Third	2	Knowing the organism	Micrometry	Lecture	quizzes
Fourth	2	Understanding basic principles	Video about Types of microscopes	experiment	Quiz, report , homework
Fifth	2	Practical application of law	The cell wall and modification of plasma membrane	Problem solving	Homework
Sixth	2	Understanding basic principles	Cytoplasmic organelles: Golgi complex	Problem solving	Homework
Seventh	2	Understanding basic principles and appl ications	Endoplasmic reticulum	Problem solving	Homework

Eighth	2	Understanding basic principles and applications	Mitochondria	Problem solving	Homework
Nineth	2	Understanding the basic principles of gene interaction	Video about Cytoplasmic organelles	Problem solv	Homework
Tenth	Mid Exam				
Eleventh	2	Understanding basic principles and applications	Plastids	experiment	Quiz, report , homework
Twelfth	2	Understanding basic principles and applications	Paraplasma	Problem solvi	Homework
Thirteen	2	Understanding problem solving and crosses	The nucleus	Problem solving	Homework
Fourteenth	2	Understanding problem solving a crosses	Video about Plastids and nucleus	Problem solving	Homew
Fifteenth	2	Understanding the basic principles	Cell cycle and cell division	experiment	Quiz, report , homework
Sixteenth	2	Understanding the basic principles and crosses	Mitosis and Cytokinesis	Problem solving	Homework
Seventeenth	2	Understanding problem solving and crosses	Meiosis	Problem solving	Homework
Eighteenth	2	Understanding problem solving and crosses	Video about cell divisions	Problem solving	Homework
Nineteenth	2	Understanding problem solving and crosses	Types of chromosomes	Problem solving	Homework
Twenty	2	Understanding problem solving and crosses	Special chromosom	Problem solving	Homework
Twenty one	2	Understanding problem solving and crosses	Video about chromosomes	Problem solving	Homework
	Final Exam				

11. Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1- Cell Biology Third Edition by Thomas D. Pollard, William C. Earnshaw, Jennifer Lippincott-Schwartz and Graham T. Johnson (

	2017) USA. 2. Becker's World of The Cell by Jeff Hardin and Gregory Bertoni (2018).Person Education Limited , England.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Molecular Biology of The Cell , Sixth Edition By Bruce Alberts *et al*.,2015, Published by Garland Science, Taylor & Francis Group, LLC, an informa business, 711 Third Avenue, New York, NY 10017, US.
Electronic References, Websites	https://www.nature.com/scitable/topic/cell-biology-13906536/ https://www.ibiology.org/educators-resources

Course Description Form

Course Name: plant Anatomy
1. ourse Code: EDBI24F102
2. emester / Year: 2023-2024
3. escription Preparation Date: 1/9/2023
4. vailable Attendance Forms: Laboratory , Classroom
5. umber of Credit Hours (Total) / Number of Units (Total)
4/4
6. ourse administrator's name (mention all, if more than one name)
Name: Assistant Prof. Dr. Raghad Nawaf Gergees Email:raghadnawaf@uomosul.edu.iq
7. Course Objectives

Course Objectives	• Learn about the basic principles of plant anatomy • Learn about the anatomy of different plant parts
8. Teaching and Learning Strategies	
Strategy	Lecture, discussions, homework and reports

9. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Form a general idea about the material	Introduction to plant anatomy	Lecture	quizzes
Second	2	Identify layers The wall and its manufacturing mechanism	Plant cell wall	Lecture	quizzes
Third	2	Identify stomata	stomata	Lecture	quizzes

Fourth	2	Identify protoplasts and their applications	protoplasts	Lecture	Quiz, report , homework
Fifth	2	Identify living components	living components	Lecture	Homework
Sixth	2	Identify non-living components	non-living components	Lecture	Quiz, report , homework
Seventh	2	Identifying meristematic tissues	meristematic tissues	Lecture	Homework
Eighth	2	Identifying permanent tissues	permanent tissues	Lecture	Quiz, report , homework
Nineth	2	Identifying the collenchyma tissue	collenchyma tissue	Lecture	Homework
Tenth	2	Identify the types of sclerenchyma cells	Sclerenchyma tissue	Lecture	Quiz, report , homework
Eleventh	2	Know the components of xylem	Xylem tissue	Lecture	Quiz, report , homework
Twelfth	2	Exam			
Thirteen	2	Know the components of phloem tissue	phloem tissue	Lecture	Quiz, and homework
Fourteenth	2	Study of epiderms	epiderms tissue	Lecture	Homework
Fifteenth	2	Study of Prederm	Prederm	Lecture	Homework
Sixteenth	2	Identify the internal structure of the root	structure of the root		Quiz, report , homework

Seventeenth	2	Identify the internal structure of the stem	structure of the stem	Lecture	
Eighteenth	2	Identify the internal structure of leaf	structure of leaf	Lecture	Quiz, and homework
Nineteenth	2	dentification of Xylem with diffuse pores	Xylem with diffuse pores	Lecture	Quizzes
Twentieth	2	Study of Xylem annular pores	of Xylem annular pores	Lecture	homework
Twenty first	2	Study of secondary growth in plants	secondary growth in plants	Lecture	Quiz
Twenty twot	1	Exam			

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)	The methodological book in Arabic Plant kingdom D. Hussein Al-Arousi
Main references (sources)	Basics of botany anatomy - Dr. Qaiser Naguib Saleh Botany - Jaafar Al-Khayyat
Recommended books and references (scientific journals, reports...)	Anatomy of plant organs Muhammad Miloul Khalifa

Electronic References, Websites	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwi8pKuV7MmEAxU_R_EDHbZXCS4QFnoECBEQAQ&url=https%3A%2F%2Fwww.noor-book.

Course Description Form

1. Course Name: Practical plant anatomy

2. Course Code: EDBI24F102

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory/Classroom

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

2/2

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

Name: Raghad Nawaf Jergees Email: raghadnawaf@uomosul.edu.iq
Dr. Noor Nabeel , Dr. Fawz Abdulsalam, Assist lect .Aseel Khazal Ali

8. Course Objectives

Course Objectives	• **Students acquire the basic principles of plant anatomy** ▪ **Students acquires laboratory skills and enable them to distinguish between different types of plant tissues**

9. Teaching and Learning Strategies

Strategy	Lecture, Conversation and discussions, homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Basic principles	Plant Anatomy	Lecture and slides	Quiz and oral questions
2	2	Structure and function	Plant cell wall	Lecture and slides	Quiz and oral questions
3	2	Structure and function	stomata	Lecture and slides	Quiz and oral questions
4	2	Structure and function	Protoplast	Lecture and slides	Quiz and oral

					questions
5	2	Structure and function	Living constituents	Lecture and slides	Quiz and oral questions
6	2	Structure and function	Non living constituents	Lecture and slides	Quiz and oral questions
7	2	Structure and function	Permeant tissues	Lecture and slides	Quiz and oral questions
8	2	Structure and function	Collenchyma part 1	Lecture and slides	Quiz and oral questions
9	2	Structure and function	Collenchyma part 2	Lecture and slides	Quiz and oral questions
10	2	Structure and function	Sclerenchyma part 1	Lecture and slides	Quiz and oral questions
11	2	Structure and function	Sclerenchyma part 2	Lecture and slides	Quiz and oral questions
12	2	Structure and function	Xylem part 1	Lecture and slides	Quiz and oral questions
13	2	Structure and function	Xylem part 2	Lecture and slides	Quiz and oral questions
14	1		Exam		Quiz and oral questions
15	2	Structure and function	Phloem part 1	Lecture and slides	Quiz and oral questions
16	2	Structure and function	Phloem part 2	Lecture and slides	Quiz and oral questions
17	2	Structure and function	Periderm	Lecture and slides	Quiz and oral questions
18	2	Structure and function	Internal structure of of root	Lecture and slides	Quiz and oral questions
19	2	Structure and function	Cross section of root	Lecture and slides	Quiz and oral questions
20	2	Structure and function	Internal structure of stem	Lecture and slides	Quiz and oral questions

21	2	Structure and function	Cross section of stem	Lecture and slides	Quiz and oral questions
22	2	Structure and function	Internal structure of leaf	Lecture and slides	Quiz and oral questions
23	2	Structure and function	Cross section of leaf	Lecture and slides	Quiz and oral questions
24	2	Structure and function	Diffused wood pores	Lecture and slides	Quiz and oral questions
25	2	Structure and function	Diffused wood pores	Lecture and slides	Quiz and oral questions
26	2	Structure and function	Wood annular pores	Lecture and slides	Quiz and oral questions
27	2	Structure and function	Wood annular pores	Lecture and slides	Quiz and oral questions
28	1		Exam	Lecture and slides	

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 plant anatomy (Arabic) Dr. Qiasr najeeb Salih
Main references (sources)	Plant Science – Jaffar Al-Khayyat Plant kingdom- Dr. Hussein Alorosy
Recommended books and references (scientific journals, reports...)	Alkhazraji, Talib Oaid and Falih Mohammed Aziz, 1991. Plant anatomy and practical microscopic preparations
Electronic References, Websites	https://byjus.com/neet/anatomy-of-root-stem-and-leaf/

Course Description Form

1. Course Name: Biology

2. Course Code: EDBI24F101

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: : Laboratory , Classroom

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

2/4

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

Name: Dr.Omiama Adel
Email: omaimaaadil@uomosul.edu.iq
Name:Ass.Prof.Dr. Baidaa A. M Salah
Email: baidaamohammed@uomosul.edu.iq
Name: Dr. Rasha Fawzi Abdulrazq
Email: Rasha.fawzi2016@uomosul.edu.iq
Name: Dr. Safaa Ismail Rasheed
Email: dr.safaa100@uomosul. edu. iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of biology** • **Knowing the practical applications of** **Biology in Life and Research**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture, talk and discussions, problem solving , performing practical experimer reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	1	Suitable organisms biology studies	Introduction to biology	Lecture	quizzes

Second	1	Understand basic principles	Overview: A histori review of the growth biology	Lecture	quizzes
Third	1	Understand the basic principles	Evolution of biology, the importance of biolog	Lecture	Quizzes
Fourth	1	Understand the basic principles	Branches of biology, characteristics of life,	Lecture	Quizzes
Fifth	1	Understand the basic principles	The main method of construction of living matter	Problem solving	Homework
Sixth	1	Understand the basic principle	Cell divisions	Lecture	Quiz , Preparing reports and homework
Seventh	1	Understand the basic principles	Definition qualities of life	Problem solving	Homework
Eighth	1	Understand The basic principles	Classification of living organisms, histori stages	Lecture	Quiz , preparing reports and homework
Ninth	1	Understand The basic principle	Classification systems	Problem solving	Homework
Tenth	1	Understa The basic principle	Basics of animal classification	Lecture	Quiz , preparing reports and homework
Eleventh	1	Understand The basic principle	Reproduction a growth	Problem solving	Quiz , preparing reports and homework
Twelfth	1	Understand The basic principles	Coordination in animals	Problem solving	Homework
Thirteen	1	Understand The basic principles	Classification, of histori stages	Lecture	Quiz , preparing reports and homework
Fourteen	1	Understand The basic principles	Basics of Plant classification	Problem solving	homework
Fifteenth	1	Semester exam	-	-	-

Sixteenth	1	Understand The basic principles	The concept of species	Lecture	Quiz , preparing reports and homework
Seventee	1	Understand The basic principles	Reproduction and growth in animals	Lecture	Quiz
Eighteent	1	Understand The basic principles	Reproduction and growth in the plants Hormonal coordination	Lecture	Quiz
Nineteen	1	Understand The basic principles	Introduction Coordination in the animals	Lecture	Quiz
Twentiet	1	Understand The basic principles	Coordination in plants	Lecture	homework
Twenty-first	1	Understand The basic principles	Evolution,theories evolution	Lecture	homework
Twenty-second	1	Understand The basic principles	The evolution of low animals Evolution of vertebrates	Lecture	Quiz
Twenty third	1	Understand The basic principles	Behavior of living organisms Nervous system and behavior	Lecture	Quiz
Twenty fourth	1	Understand The basic principles	Innate and learned behavior Orientation in time and place	Lecture	homework
Twenty-fifth	1	Understand The basic principles	Mass movement and migration The monotony and cloc of life Hierarchical dominance animalgroups, examples living behavior	Lecture	Quiz
Twenty-sixth	1	Understand The basic principles	Some concepts about the environment and sources of pollution	Lecture	homework
Twenty-seventh	1	Understand The basic principles	Ecology environmental system Biological cycles Energy flow	Lecture	Quiz
Twenty-	1	Understand	Lamarckism	Lecture	Quiz

eighth		The basic principles	Darwinism		
Twenty ninth	1	Understand The basic principles	The food chain food web Biomes, aquatic and terrestrial	Lecture	Quiz
Thirtieth	1	-	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	Biology Peter H. Raven et al noor-book.com/mc3rks Botany, written by Jaafar Al-Khayyat
Main references (sources)	For the Kingdom of Plants, Dr. Hussein Al-Arousi Biology Peter H. Raven et al noor-book.com/mc3rks The world of non-flowering plants, K-Smith
Recommended books and references (scientific journals, reports...)	Zoology For B.Sc. Students Semester V: Paper 2, Divers of Chordates and Comparative Anatomy | Lab on Virt Dissection, Anatomy, Economic Zoology and Parasitolog NEP 2020 Uttar Pradesh Plant groups, Dr. Samir Khalaf
Electronic References, Websites	https://byjus.com/biology/zoology/ https://ar.wikipedia.org/wiki/%D8%B9%D9%84%D 9%85_%D8%A7%D9%84%D9%86%D8%A8%D8%A7%D8%.

Course Description Form

1. Course Name: Practical biology/botany-zoology

2. Course Code: **EDBI24F101**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

4/4

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

1- Dr. Bushra Essam
Dr. Zain Al-Abidin Hamza
M. Reem Adnan Abdul Razzaq
M.M. Wafa Essam Abdel Qader
Prof. Dr. Ibrahim Khalil
Dr. Yousry Abdul-Razzaq
M. Raghad Ahmed Abbas
M.M. Ahmed Nabil

8. Course Objectives

Course Objectives	**Knowing the basic principles of biology** **Learn about practical applications of biology/plant-anim**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lecture, dialogue and discussions, presentation of plant models and slides for cells and tissues, daily reports and assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Knowledge and skill	Introduction to biology	lecture	Daily exams
Second	2	Knowledge and skill	Microscope	Lecture	Daily exams
Third	2	Knowledge and skill	Plant Cell	board, presentati and video lectur	Daily exams
Fourth	2	Knowledge and skill	Root	lecture	preparing reports and homework
Fifth	2	Knowledge and skill	Internal anatomy of the root	board and video lecture	Homework
Sixth	2	Knowledge and skill	The stem	lecture	Daily exams
Seventh	2	Knowledge and skill	Internal anatomy of the stem	board and video lecture	Homework

Eighth	2	Knowledge and skill	the leaf	Video lecture	preparing reports and homework
Nineth	2	Knowledge and skill	Internal anatomy of a leaf	lecture	Homework
Tenth	2	Knowledge and skill	Flower	lecture	Daily exams, prepa reports and homew
Eleventh	2	Knowledge and skill	The seed	lecture	Daily exams, prepa reports and homew
Twelfth	2	Knowledge and skill	The fruit	Lecture and PowerPoint presentation	Homework
Thirteen	2	Knowledge and skill	Gymnosperm and angiosperm plants	Lecture	Daily exams and homework
Fourteenth	2	Knowledge and skill	Monocot and dicotyledonous plants	lecture	Homework
Fifteenth	2		Semester exam		
Sixteenth	2	Knowledge and skill	Introduction to zoology	lecture	Daily exams, preparing reports and homework
Seventeenth	2	Knowledge and skill	Animal cell	lecture	Daily exams
Eighteenth	2	Knowledge and skill	Prokaryotic cells and eukaryotic cells	lecture	Daily exams and homework
Nineteenth	2	Knowledge and skill	Animal cell division	Lecture and PowerPoint presentation	Daily exams
Twentieth	2	Knowledge and skill	Cell sizes and shapes	Lecture and PowerPoint presentation	Homework
Twenty first	2	Knowledge and skill	Histology	lecture	Daily exams
Twenty second	2	Knowledge and skill	Connective tissue part One	lecture	Homework
twenty three	2	Knowledge and skill	Connective tissue The second part	lecture	Homework
Twenty four	2	Knowledge and skill	Epithelial tissue	lecture	Homework
Twenty fifth	2	Knowledge and skill	Cartilage and bone	lecture	Daily exams
Twenty sixth	2	Knowledge and skill	Blood and lymph	lecture	homework
Twenty seventh	2		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- Methodical book: Botany / Jaafar Al-Khayyat

	2- The Plant Kingdom / Dr. Hussein Al-Arousi 3- Non-flowering botanist K-Smith 4- Plant groups / Dr. Samir Khalaf Abdullah 5- Methodical book: Basics of Zoology / Muhammad Kamal Abdel Moez
Main references (sources)	Biology/John Tyler Bonler - Translated by: Dr. Yahya Desouky
Recommended books and references (scientific journals, reports...)	Biology Magazine/Under the supervision of: A. Ali Bahtab Noor-book.com Biology/ Peter raven&George Johnson
Electronic References, Websites	Biology4kids Interactive-biology

Course Description Form

1. Course Name: Organic Chemistry

2. Course Code: The first Stage

3. Semester / Year: First Semester / 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: The daily attendance

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

14 hours / 3 units

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

Name: Dr. Linda Riyadh Abdul_raheem
Email: linda.reyadh@uomosul.edu.iq

8. Course Objectives

Course Objectives	**1. Students learned about the subject of organic chemistry and its role in understanding the principles of modern chemistry and its daily uses** **2. How to use this knowledge in daily life and link it to other scientific phenomena** **3. It makes students at colleges of education for pure sciences feel the value of chemistry and how they deal with school students after graduation** **4. Practicing their specialization as schoolteachers** **5. They can perform their work in research laboratories** **6. Urging students to perform their duties not only as teachers, but also in other state departments** **7. Utilizing the student's scientific knowledge in a way that helps him face life problems in the field of research**

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, dialogue and discussions, problem solving, reports and daily assignments.

10. Course Structure

Week	Hours	Required Learning	Unit or subject name	Learning	Evaluation

		Outcomes		method	method
1	1x3=3	The acquisition of knowledge In the field of organic chemistry In preparation for some Concepts Related basic With branches of science organic chemistry	*The importance of organic chemistry *Organic compounds *Atom and electronic distribution *Chemical bonds and their types	theoretical + Electronic	Exam and activity Daily
2	1x3=3	Gain knowledge in the field of organic chemistry	*Hybridization *Types of hybridization and knowing some Chemical terminology	theoretical + Electronic	Exam and activity Daily
3	1x3=3	Gain knowledge in the field of organic chemistry	Alkanes Naming alkanes, Physical properties and chemical reactions Preparation	theoretical + Electronic	Exam and activity Daily
4	1x3=3	Gain knowledge in the field of organic chemistry	Cycloalkanes Preparation of cycloalkanes Cycloalkanes reactions	theoretical + Electronic	Exam and activity Daily
5	1x3=3	Gain knowledge in the field of organic chemistry	Alkenes Naming alkenes, Physical properties and chemical reactions	theoretical + Electronic	Exam and activity Daily

6	1x3=3	Gain knowledge in the field of organic chemistry	Alkenes reactions	theoretical + Electronic	Exam and activity Daily
7	1x3=3	Gain knowledge in the field of organic chemistry	Preparation of alkenes Diagnosis of alkenes	theoretical + Electronic	Exam and activity Daily
8	1x3=3	Gain knowledge in the field of organic chemistry	Dienes Its types Its interactions and methods of preparation	theoretical + Electronic	Exam and activity Daily
9	1x3=3	Gain knowledge in the field of organic chemistry	Alkynes Its name and properties	theoretical + Electronic	Exam and activity Daily
10	1x3=3	Gain knowledge in the field of organic chemistry	Preparation of alkynes Their interactions Diagnosis of alkynes	theoretical + Electronic	Exam and activity Daily
11	1x3=3	Gain knowledge in the field of organic chemistry	Aromatic hydrocarbons Benzene structure Aromatic character	theoretical + Electronic	Exam and activity Daily
12	1x3=3	Gain knowledge in the field of organic chemistry	Naming benzene derivatives Effectiveness and direction	theoretical + Electronic	Exam and activity Daily

13	1x3=3	Gain knowledge in the field of organic chemistry	Interactions of aromatic compounds And prepare them.	theoretical + Electronic	Exam and activity Daily
14	1x3=3	Gain knowledge in the field of organic chemistry	Given curriculum	theoretical	Mid-year examination (First semester)

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)	• Organic chemistry translated by Prof. Dr. Saleh Al-Qadiri and others
Main references (sources)	• Fundamentals of Organic Chemistry, written by Muhammad Magdy Wasel
Recommended books and references (scientific journals, reports...)	• Foundations of Organic Chemistry, Prof. Dr. Muhammad Nizar Ibrahim 2008
Electronic References, Websites	https://www.uoanbar.edu.iq

Course Description Form

1. Course Name: Organic chemistry lab / Bachelor's (for Biological Student)

2. Course Code: **EDBI24F104**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 2023/9/1– 2024/1/ 31

5. Available Attendance Forms: Weekly laboratory attendance / online class

6. Number of Credit Hours (Total) / Number of Units 2 hours a week / 7 Credit

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

Name: Dr. Mohanad Yakdhan Saleh E-mail: mohanadalallaf@uomosul.edu.iq
Name: Dr. Anwar Abdulgany Email:
Name: Anwar Mahmood Ahmed Email: anwar.mahmoud@uomosul.edu.iq

8. Course Objectives

Course Objectives	1- Learn the students the role of organic chemistry to understand the principles of modern chemistry and how can use it. 2- How can use this knowledge in our lives and connect with other scientific phenomena. 3- Make the students at colleges of education and pure science fill the value of chemistry and how can deal with schools' students. 4- Make the best in research labs. **5-** Students demand to perform their duties not only as teachers, but als in other state departments.

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, discussion, and examples, solve homework problems, Daily activity of students and recording contributions for each student.

1. Course structure					
weeks	hrs	Required learning outcomes	Name of the subject	Teaching method	Evaluation method
1	2	Lab equipment and tools	Lab tools	Watch the lab tools	Quizzes and monthly exams
2	2	Physical constant	Melting point for organic compounds	Practical experiment procedure	
3	2	Physical constant	Boiling point for organic compounds	Practical experiment procedure	
4	2	Purification of liquid organic compounds	Simple distillation	Practical experiment procedure	
5	4	Purification of liquid organic compounds	Fractional distillation	Practical experiment procedure	
6	4	Purification of liquid organic compounds	Vapor distillation	Practical experiment procedure	
7	2	Purification of solid organic compounds	Recrystallization	Practical experiment procedure	
8	4	Purification of solid organic compounds	Sublimation	Practical experiment procedure	
9	2	Extraction	Extraction of caffeine from tea	Practical experiment procedure	
10	2	Preparation of alkane	Preparation of Methane	Practical experiment procedure	

1. Course Evaluation	
Distribution of the grade out of 25 according to the tasks assigned to the student, such as daily preparation, weekly written exams, mid-year exams, final exams, reports, etc. The daily exam is 5 grades, the mid-year exam is 5 grades, reports 10 grades , and the result is 25 grades	
2. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Practical experment of organic compounds
Recommended books and references (scientific journals, reports...)	Journal of chemical education
Electronic References, Websites	

Course Description Form

1. Course Name: Analytical chemistry

2. Course Code: EDBI24F104

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Class, classroom

6. Number of Credit Hours (Total) / Number of Units (Total) 15 Hours for each class (three classes)

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

Name: Mohamed Yahya dhamra Al-mashaykhi
Email: mohameddhamra@uomosul.edu.iq

8. Course Objectives

Course Objectives	**• Learn about analytical chemistry and quantitative analysis methods** **• Find ways to express chemical concentration** **• Learn about weight analysis and the weight factor** **• Learn about volumetric analysis and its types of reactions** **• Find separation methods and devices used**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lecture, dialogue and discussions, problem solving, conducting practical experiments, reports and daily assignments

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	AN Hour	Learning about classification of analytical chemistry	classification of analytical chemistry	Lecture	Quizzes
Second	AN Hour	Learning about Qualitative analysis	Qualitative analysis	Lecture	Quizzes
Third	AN Hour	Learning about Quantitive analysis	Quantitive analysis	Lecture	Quizzes
Fourth	AN Hour	Learning about the types concentrations	the types concentrations	Lecture	Report
Fifth	AN Hour	Learning about gravimetric analysis	gravimetric analysis	Lecture	Quizzes

Sixth	AN Hour	Learning about gravimetric conversion factor	gravimetric conversion factor	Lecture	Quizzes
Seventh	AN Hour	Understanding questions solutions to problems	Solved problems weight analysis	Lecture	Quizzes
Eighth	AN Hour	Learning about volumetric analysis	volumetric analysis	Lecture	Quizzes
Ninth	AN Hour	Learning about volumetric Analysis, the types	volumetric analysis	Lecture	Quizzes
Tenth	AN Hour	Learning about Calculate equivalent weight	equivalent weight	Lecture	Quizzes
Eleventh	AN Hour	Ability to solve problems	Solve problems in Volumetric analysis	Lecture	Quizzes
Twelfth	AN Hour	Learning about Spiriting methods	Spiriting methods	Lecture	Quizzes
Thirteenth	AN Hour	Ability to solve problems	Solve problems in In spiriting methods	Lecture	Quizzes
Fourteenth	AN Hour	Exame	Exame	Lecture	Exame

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)	Qualitative and volumetric analysis, Dr. Thabet Saeed Al-Ghabsha, (1986), University of Mosul
Recommended books and references (scientific journals, reports...)	Fundamentals of analytical chemistry (Skoog and west)
Electronic References, Websites	Directing students to websites related to subject areas, directing students to use the college library to expand their knowledge

Course Description Form

1. Course Name:
Practical analytical chemistry
2. Course Code:
3. Semester / Year:
Second semester/2024
4. Description Preparation Date:
1/9/2023
5. Available Attendance Forms:
Regular attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course administrator's name (mention all, if more than one name)
Zeena Zuhair Saleh Email: zeena.2020@uomosul.edu.iq Nagham Nazim Habib naghamdnbeel@uomosul.edu.iq
8. Course Objectives

Course Objectives	• Learn about quantitative analysis methods • Identify ways to express chemical concentration • Learn about volumetric analysis and its types of reactions
9. Teaching and Learning Strategies	
Strategy	Cooperative learning strategy Practical simulation demonstration

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Gain general knowledge abo chemistry	A general introduction analytical chemistry and its types	theoretical	homework
2	2	Gain knowledge about the preparation of solid compour	Preparation of solid compounds	Theoretical and practical	An exam, a daily activity, and homework
3	2	Gain knowledge of how to prepare a liquid substance	Preparation of liquid compounds	Theoretical and practical	An exam, a daily activity, a homework

4	2	Gaining knowledge about decontamination and titration	Conditions for the titration	Theoretical	An exam, a daily activity, and homework
5	2	Gain knowledge of titration methods	Classification of volumetric titration methods	Theoretical	An exam, a daily activity, and homework
6	2	Gain knowledge about the conditions	Standard conditions primary and second materials	Theoretical and practical	An exam, a daily activity, and homework
7	2	Gain knowledge about the colors of indicators	Acid – base indicat	Theoretical and practical	An exam, a daily activity, and homework
8	2	Gain knowledge about preparation of sodium carbonate	Preparing sodium carbon and calculating the stand of hydrochloric acid	Theoretical and practical	An exam, a daily activity, and homework
9	2	knowledge of how to find concentration	Calculating the standard of titrated of sodium hydroxide with hydrochloric acid	Theoretical and practical	An exam, a daily activity, and homework
10	2	knowledge of how to find concentration	Calculating the standard of acetic acid	Theoretical and practical	An exam, a daily activity, and homework
11	2	Gain knowledge about determination of mixture	determination of mixture of sodium carbonate and sodium hydroxide	Theoretical and practical	An exam, a daily activity, and homework
12	2	Gain knowledge about determination of mixture	determination of mixture of sodium carbonate and sodium bicarbonate	Theoretical and practical	An exam, a daily activity, and homework
13	2	Gain knowledge about determination of chloride ion	Moore's method for chlor ion determination	Theoretical and practical	An exam, a daily activity, and homework
14	2	Gain knowledge about determination of iron ion	determination of ferrous ion by potassium permanganate	Theoretical and practical	An exam, a daily activity, and homework
15	2	Gain knowledge about determination of iodide ion	Determination of iodine us sodium thiosulfate	Theoretical and practical	An exam, a daily activity, and homework

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. It is finally attributed to 10 marks	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Descriptive and volumetric analysis, Dr. Thal Saeed Al-Ghabsha, (1986), University Mosul
Main references (sources)	Descriptive and volumetric analysis, Dr. Thal Saeed Al-Ghabsha, (1986), University Mosul
Recommended books and references (scientific journals, reports...)	Fundamentals of analytical chemistry (Skoog and west)
Electronic References, Websites	Electronic references, Internet sites, vario educational Internet sites for chemistry, such Chemix, Chemsketch, Chemdraw.

Course Description Form

- Course Name:

Foundations of education

- Course Code:

EDB124F109

- Semester / Year:

The first and second semesters of the 2023-2024 academic year

- Description Preparation Date:

2023-10-1

- Available Attendance Forms:

In-person and electronic

- Number of Credit Hours (Total) / Number of Units (Total)

60/4

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

Name: Zeyad Bader Hamad
Email: dr.zeyadhamad78@uomosul.edu.iq

- Course Objectives

Course Objectives	**• It aims to make students know the general foundations and principles on which education is based by reviewing a group of foundations such as the historical, social and economic foundations. And scientific.** **• Developing values in Arab and Islamic education.** **• Teach students research skills about education throughout history.** **• Students learn about the role of education in achieving sustainable development.** **• Students learn about the role of society, school, and family in the education process.** **• Students learn about ancient and modern educational methods.**

- Teaching and Learning Strategies

Strategy	• Managing lectures in a way that shows the importance of time. • Group activities for which 10% of the grade is allocated. • Individual and group assignments that require the use of the library and the Internet. • Increasing the spirit of positive competition. • Reciprocal teaching.

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge and skill	Foundations of education	Electronic integrated i the lecture	a test
2	2	Knowledge and skill	The meaning of education the goals of education	Electronic integrated the lecture	a test
3	2	Knowledge and skill	Necessities and importance education	Electronic integrated the lecture	a test
4	2	Knowledge and skill	Educational theories	Electronic integrated the lecture	a test
5	2	Knowledge and skill	Educational theories	Electronic integrated the lecture	a test

6	2	Knowledge and skill	Fields of education	Electronic integrated the lecture	a test
7	2	Knowledge and skill	Historical basis	Electronic integrated the lecture	a test
8	2	Knowledge and skill	Development of the foundations of education	Electronic integrated the lecture	a test
9	2	Knowledge and skill	Education in primitive societies	Electronic integrated the lecture	a test
10	2	Knowledge and skill	Chinese education	Electronic integrated the lecture	a test
11	2	Knowledge and skill	Greek education	Electronic integrated the lecture	a test
12	2	Knowledge and skill	Arab Islamic education	Electronic integrated the lecture	a test
13	2	Knowledge and skill	Education in the pre-Islamic era	Electronic integrated the lecture	a test
14	2	Knowledge and skill	Al-Ghazali	Electronic integrated the lecture	a test
15	2	Knowledge and skill	Modern education	Electronic integrated the lecture	a test
16	2	Knowledge and skill	Media of Arab educational thought/ Ibn Khaldoun	Electronic integrated the lecture	a test
17	2	Knowledge and skill	Ibn Sina	Electronic integrated the lecture	a test
18	2	Knowledge and skill	Jean-Jacques Rousseau	Electronic integrated the lecture	a test
19	2	Knowledge and skill	John Dewey	Electronic integrated the lecture	a test
20	2	Knowledge and skill	Social basis	Electronic integrated the lecture	a test
21	2	Knowledge and skill	The relationship of education with society	Electronic integrated the lecture	a test
22	2	Knowledge and skill	The relationship of education to the environment	Electronic integrated the lecture	a test
23	2	Knowledge and skill	Congenital education	Electronic integrated the lecture	a test
24	2	Knowledge and skill	Health education	Electronic integrated the lecture	a test
25	2	Knowledge and skill	Development concept	Electronic integrated the lecture	a test
26	2	Knowledge and skill	Education and development	Electronic integrated the lecture	a test
27	2	Knowledge and skill	Family education	Electronic integrated the lecture	a test
28	2	Knowledge and skill	Economic basis	Electronic integrated the lecture	a test
29	2	Knowledge and skill	Economic return to educatio	Electronic integrated the lecture	a test
30	2	Knowledge and skill	Development and planning	Electronic integrated the lecture	a test

- Course Evaluation

25% half the year
5% daily exams
5% activity (report or lecture)
5% semester exam
60% end-of-year exam

• 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: Educational psychology

2. Course Code: **EDBI24F106**

3. Semester / Year: 2023 - 2024

4. Description Preparation Date: 1 / 9 / 2023

5. Available Attendance Forms: In-person - electronic class

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

   2 hours / 4 units

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

   Name: Asist. Ahmed Adeeb Qanbar Shehab
   Email: ahmed.adeeb@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Identify the basic concepts of educational psychology. • Identify the principles of educational psychology. • Identify the importance of educational psychology in the educational proces • Identify the goals of educational psychology.

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussio brainstorming, problem solving, conducting practical experiments, repo and daily assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	**2 hours**	**The student should mention the concept of educational psychology and the history of the emergence of psychology.**	**The concept of psychology and educational psychology in educational thought and Islamic thought**	**Lecture and discussion**	**Quizzes**

Second	**2 hours**	**The student should explain the schools of psychology and branches of psychology.**	**Schools and branches of psychology.**	**Lecture and discussion**	**Quizzes**
Third	**2 hours**	**The student should know the concept of behavior and the factors influencing behavior**	**Behavior and factors influencing behavior.**	**Lecture and discussion**	**Quizzes**
Fourth	**2 hours**	**The student identifies the most important research methods in psychology and educational psychology.**	**Research methods in psychology and educational psychology.**	**Lecture and discussion**	**Quizzes**
Fifth	**2 hours**	**The student should distinguish between the concepts of learning and teaching.**	**Learning and teaching and their characteristics.**	**Lecture and discussion**	**Homework**
Sixth	**2 hours**	**For the student to understand the subject of attention and the factors affecting attention in humans.**	**Attention and factors affecting attention.**	**Lecture and discussion**	**Quizzes and homework**
Seventh	**2 hours**	**For the student to understand the subject of sensation, the types of sensation, and the factors influencing human sensation.**	**Sensation, types of sensation, and factors affecting the sensation process.**	**Lecture and discussion And solve problems**	**Homework**
Eighth	**2 hours**	**For the student to understand the subject of perception and the factors affecting human sensory perception.**	**Sensory perception and factors affecting sensory perception.**	**Lecture and discussion**	**Quizzes**
Ninth	**2 hours**	**The student should explain the importance of studying motivation towards learning.**	**Motivation to learn and the importance of studying motivation to learn.**	**Lecture and brainstorming**	**Quizzes**
Tenth	**2 hours**	**The student should distinguish between types of motivation (internal and external).**	**Types of motivation (internal - external).**	**Lecture and discussion**	**Quizzes and Homework**
Eleventh	**2 hours**	**For the student to understand the process of remembering in humans.**	**The process of remembering, types of remembering, and factors influencing the remembering process.**	**Lecture and discussion**	**Quizzes and Homework**
Twelve	**2 hours**	**The student should understand the process of forgetting and its causes.**	**The process of forgetting, its causes, and the factors affecting the forgetting process.**	**Lecture, discussion and problem solving**	**Homework**

Thirteenth	**2 hours**	**The student explains ways to process information and how to explain forgetting.**	**Ways of processing information, and theories that explain the process of forgetting.**	**Lecture**	**Quizzes and Homework**
Fourteenth	**2 hours**	**The student understands the concept of emotions and the factors influencing emotions.**	**Emotions and factors influencing emotions.**	**Lecture, discussion, problem solving**	**Homework**
Fifteenth	**An hour and a half**		**Semester exam**		
Sixteenth	**2 hours**	**The student explains the process of transferring the learning effect.**	**Transfer of the learning effect and the importance of studying the process of transfer of the learning effect.**	**Lecture and discussion**	**Quizzes and Homework**
Seventeenth	**2 hours**	**The student determines how to benefit from the process of transferring the learning effect.**	**How to benefit from the process of transmission of teaching and learning in the educational process.**	**Lecture and discussion**	**Quizzes**
Eighteenth	**2 hours**	**The student should explain the importance of studying feedback and its types.**	**The concept and importance of studying feedback and its types in the educational process.**	**Lecture and discussion**	**Quizzes and Homework.**
Nineteenth	**2 hours**	**To show the student the most important educational applications of feedback in the educational process and his daily life.**	**Educational applications of the feedback process.**	**Lecture and discussion**	**Quizzes**
Twentieth	**2 hours**	**The student explains the concept of thinking and the types of thinking in humans.**	**The meaning of thinking and types of thinking.**	**Lecture and discussion**	**Quizzes**
Twenty-first	**2 hours**	**The student determines the levels of thinking and ways to stimulate and develop thinking.**	**Levels of thinking and ways to stimulate thinking and develop thinking.**	**Lecture and discussion**	**Quizzes**
Twenty-second	**2 hours**	**The student summarizes the topic of learning concepts, its importance, nature, and generalization of concepts.**	**The topic of learning concepts, its importance, nature, and generalization of concepts.**	**Lecture, discussion, problem solving**	**Homework**
Twenty-third	**2 hours**	**The student defines the concept of individual differences in teaching.**	**Individual differences, and how to take them into account in teaching.**	**Lecture, discussion**	**Quizzes**

Twenty-fourth	**2 hours**	**For the student to distinguish individual differences in thinking styles and brain control.**	**Individual differences in thinking styles and brain control.**	**Lecture, discussion, problem solving**	**Homework**
Twenty-fifth	**2 hours**	**The student understands learning theories and their educational applications.**	**Learning theories (Pafof -Skinner).**	**Lecture, discussion**	**Quizzes**
Twenty-sixth	**2 hours**	**The student understands learning theories and their educational applications.**	**Learning theories (insight theory).**	**Lecture, discussion, problem solving.**	**Homework**
Twenty-seventh	**2 hours**	**The student understands learning theories and their educational applications.**	**Learning theories (supplement to insight theory).**	**Lecture, discussion**	**Quizzes**
Twenty-eighth	**2 hours**	**The student understands learning theories and their educational applications.**	**Learning Theories (Observational Learning by Albert Bandura).**	**Lecture, discussion**	**Quizzes**
Twenty-ninth	**2 hours**	**The student understands learning theories and their educational applications.**	**Learning theories (Thorndike).**	**Lecture, discussion**	**Quizzes**
Thirtieth	**2 hours**		**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)	-Fundamentals of Educational Psycholo Mohiuddin and Abdul Rahman Adas (1983). - Methods of Learning and Thinking, Ism Ibrahim Ali, and Wissam Tawfiq Al-Mashhada (2014), Dar Qandil for Printing, Publishing a Distribution, Amman - Jordan. - Learning Theories, Imad Abdul Rahim Zaghloul (2003), Dar Al-Shorouk Publishing a Distribution, Amman - Jordan.
Main references (sources)	-Fundamentals of Educational Psycholo Mohiuddin and Abdul Rahman Adas (1983).
Recommended books and references (scientific journals, reports...)	Educational psychology books .
Electronic References, Websites	

Course Description Form

1. • Course Name: Laboratory safety

2. Course Code: **EDBI24F112**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Muthanna Jasim Mohammed
Email: dr.muthanna.j.m@uomosul.edu.iq
Name: Fawz abdul salm Al saffar
Email: dr.fawz@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Laborat safety** • **Knowing the practical applications of** • Laboratory safety

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	1	Understand the basic principles	The laboratory, its definition, description, and types (the laboratory for life sciences and how to deal with equipment and biology).	Lecture	quizzes
Second	1	Understand the basic principles	Laboratory, its definition,	Lecture	quizzes

			description and typ (laboratories for other sciences relat to life sciences an how to deal with equipment and biology).		
Third	1	Understand the basic principles	Glassware, types, how use it, a methods preserving chemicals in i	Lecture	quizzes
Fourth	1	Understand the basic principles	Types of chemicals (incendiary, flammabl carcinogenic, toxic...etc	experiment	Quiz, report , homework
Fifth	1	Understand the basic principles	How to use the devices correctly to maintain them and maintain the student's safety	Problem solving	Homework
Sixth	1	Understand the basic principles	How to use cleaning and sterilization materials and learn about them to avoid their danger	experiment	Quiz, report , homework
Seventh	1	Understand the basic principles	Identify laboratory and educational instructions and posters	Problem solving	Homework
Eighth	1	Understand the basic principles	Laboratory animals (hazardous and non-hazardous)	experiment	Quiz, report , homework
Nineth	1	Understand the basic principles	How to deal with and care for laboratory animals and how to dispose of them after conducting experiments	Problem solving	Homework
Tenth	1	Understand the basic principles	How to bring plant samples from different regions and take	experiment	Quiz, report homework

			caution when bringing them		
Eleventh	1	Understand the b principles	How to grow soi plants in t laboratory and ca for them	experiment	Quiz, report homework
Twelfth	1	Understand the basic principles	How to take bacterial and fungal samples from hospitals	Problem solving	Homework
Thirteen	1	Understand the basic principles	Pesticides, their types and how to use them	Lecture	Quiz, and homework
Fourteenth	1	Understand the basic principles	First aid when injured by pesticides	Problem solving	Homework
Fifteenth	1	Exam	first aid Its definiti description a requirements first aid Its definiti description a requirements		
Sixteenth	1	Understand the basic principles	Vital signs to be taken when starting first aid	lecture	Quiz, report , homework
Seventeenth	1	Understand the basic principles	Measure temperature, pressure, heartbeat and breathing	lecture	Quizzes
Eighteenth	1	Understand the basic principles	Disposal of waste from chemical experiments	Problem solving	Quiz, and homework
Nineteenth	1		Disposal of waste from biological experiments	Lecture	Quizzes
Twentieth	1	Pedigree analysis	How to deal psychologically with an infected person in the laboratory and avoid panic.	Problem solving	homework
Twenty first	1	Understand the basic principles	First aid for fracture cases Types of fractures and how to deal with each type	Lecture	Quiz

Twenty second	1	Understand the basic principles	Burn first aid The types of burns and how to deal with each type	Problem solving	homework
Twenty thir	1	Understand the basic principles	First aid for drowning cases when collecting samples. How to perform artificial respiration	Lecture	Quiz
Twenty fourth	1	Understand the basic principles	First aid for cases of suffocation that occur in laboratories	Problem solving	homework
Twenty fifth	1	Understand the basic principles	First aid for poisoning cases (Poisoning from insect or snake bites, or even poisoning cases caused by certain types of plants)	lecture	Quiz
Twenty sixth	1	Understand the basic principles	First aid for electric shock cases	Problem solving	homework
Twenty seventh	1	Understand the basic principles	First aid for wounds	Lecture	Quiz
Twenty eighth	1	Understand the basic principles	First aid for cases of bleeding of both types (internal and external)	lecture	Quiz
Twenty nineth	1	Understand the basic principles	First aid for some diseases such as diabetes and high blood pressure	Lecture	Quiz
Thirtieth	1	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, any)	There is no systematic book
Main references (sources)	Occupational safety in educational facilities / written by Hamza Al-Jabali / Jordan / first edition 2006
Recommended books and references (scientific journals, reports...)	The Guide to First Aid/First Edition 2019/The Arab Center for Writing and Translating Health Sciences ACMLS First Aid Simplified by Nigel Barraclough

	Safety and security in chemistry laboratories (Nusret Bayraktar) Glassware in science laboratories (Walid bin Al-Habashi Al-Numani, Yusra bint Nasser, and Jamila bint Khamis) First Aid (Tanta University/Faculty of Pharmacy/Unit crises and disasters) Encyclopedia of Occupational Health and Safety/ Volume 11, Chapter 38/ Translated by the Arab Labor Organization, Arab Institute for Occupational Health and Safety. Principles of biological analysis (Khamsawi Ahmed Al-Khamsawi
Electronic References, Websites	https://www.youtube.com/watch?v=FkQO8BNu https://www.youtube.com/watch?v=egb-I3q6bY

Course Description Form

1. Course Name:

2. Course Code: EDBI24M107

3. Semester / Year:2023 -2024

4. Description Preparation Date: 1 / 9 / 2023

5. Available Attendance Forms: Laboratory , Classroom

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

3/2

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

Name: Dr Mohammed Hazim Ameen Alkawaz
Email: mohammed.ameen@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Understanding the type of the computer and its development over time. • Identifying the hardware and software components of the computer and the role played by each component. • Knowing how the data has been processed inside the computer. • Identify the internal and external storage media. • Knowing the World Wide Web and its types. • Identify computer viruses, their types, causes and the methods of prevention.

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture, talk and discussions, problem solving, performing practical experiments, reports, and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Computers	Introduction	lecture	Participation, attendance, assignments, quiz and exams
2	2	Stages of computer development	Computer Generations	lecture	Participation, attendance, assignments, quiz and exams

3	2	Introduction to the physical parts of the computer	Hardware	lecture	Participation, attendance, assignments, quiz and exams
4	2	The software parts of the computer	Software	lecture	Participation, attendance, assignments, quiz and exams
5	2	Data mechanism	Data Processing	lecture	Participation, attendance, assignments, quiz and exams
6	2	Introduction to operating systems	Operating Systems	lecture	Participation, attendance, assignments, quiz and exams
7	2	Types of computers	Computer Types	lecture	Participation, attendance, assignments, quiz and exams
8	2	Introduction to computer memory	Computer Memory	lecture	Participation, attendance, assignments, quiz and exams
9	2	Introduction to storage units	Computer Storage	lecture	Participation, attendance, assignments, quiz and exams
10	2	Introduction to the Internet	Internet	lecture	Participation, attendance, assignments, quiz and exams
11	2	Introduction to networks	Networks	lecture	Participation, attendance, assignments, quiz and exams

12	2	Types of networks	Networks Types	lecture	Participation, attendance, assignments, quiz and exams
13	2	Methods of connecting networks	Networks Topologies	lecture	Participation, attendance, assignments, quiz and exams
14	2	Introduction to viruses and their types	Viruses	lecture	Participation, attendance, assignments, quiz and exams
15	2	Viruses prevention	Antiviruses and Protection	lecture	Participation, attendance, assignments, quiz and exams

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Idachaba, F., Ike, D. U., & Hope, O. (2014). Future trends in fiber optics communication. Proceedings of the World Congress on Engineering (Vol. 1, pp. 2-4). London, UK: WCE.
Main references (sources)	Wassim Youssef (2020) Computer Skills , Publications of the Syrian Virtual University (SVU), Syrian Arab Republic, 2020
Recommended books and references (scientific journals, reports...)	Campbell-Kelly, M., Aspray, W. F., Yost, J. R., Tinn, H., & Díaz, G. C. (2023). Computer: A history of the information machine. Routledge.
Electronic References, Websites	Le, H. (2024). CS 356-002: Introduction to Computer Networks

Course Description Form

1. Course Name: English

2. Course Code: **EDBI24F111**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms:

Lectures , Classroom

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

1/2

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

Name: Assistant Prof. Dr. Hasan Faisal Hussein Kahya
Email: dr.hasankahya@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Providing students with the basic concepts of English language • Introducing the students to the basic elements of English language • Providing the students with English speaking and listening skills • Teaching the students of how to use English language in biology subject

9. Teaching and Learning Strategies

Strategy	Theoretical lecture , talk and discussions, problem solving , performing speaking and listening skills , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Knowledge and skills	General review about English	Lecture	Quizzes
Second	2	Knowledge and skills	Present simple tense	Lecture	Quizzes
Third	2	Knowledge and skills	Present continuous	Lecture	Quizzes
Fourth	2	Knowledge and skills	Reading class: What is clonir	Lecture	Quizzes
Fifth	2	Knowledge and skills	Past simple tense	Lecture	Quizzes
Sixth	2	Knowledge and skills	Reading class: Microbial infections	Lecture	Quizzes
Seventh	2	Knowledge and skills	Paraphrase	Lecture	Quizzes
Eighth	2	Knowledge and skills	Past perfect tense	Lecture	Quizzes
Nineth	2	Knowledge and skills	Writing: The cell	Lecture	Quizzes
Tenth	2	Knowledge and skills	General English biological terms	Lecture	Quizzes

Eleventh	2	Knowledge and skills	Reading class: Ecology	Lecture	Quizzes
Twelfth	2	Knowledge and skills	Ecology/ discussion	Lecture	Quizzes
Thirteen	2	Knowledge and skills	Microscope	Lecture	Quizzes
Fourteenth	2	Knowledge and skills	Microorganisms	Lecture	Quizzes
Fifteenth	1	Knowledge and skills	Speaking	Lecture	Quizzes
Sixteenth	2	Knowledge and skills	Euglena	Lecture	Quizzes
Seventeenth	2	Knowledge and skills	The plant kingdom	Lecture	Quizzes
Eighteenth	2	Knowledge and skills	The animal kingdom	Lecture	Quizzes
Nineteenth	2	Knowledge and skills	The mammals	Lecture	Quizzes
Twentieth	2	Knowledge and skills	General review of the course	Lecture	Quizzes

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)	Headway Plus: Liz and John Soars
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://learnenglish.britishcouncil.org

Course Description Form

1. Course Name: Human Rights and Democracy

2. Course Code: **EDBI24F110**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture , Classroom

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

2 hrs/ 2 units

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

Name: Assist. Lec. Hussein Younis Abdulla
Email: husseinalazw@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **The curriculum aims that the student will be familiar with concepts of human rights and principles of human rights** • **Presenting a balanced scientific comprehension for Human rights in simple understandable way for most of subjects and syllables the are important for the student that are in undergraduate specialties in all colleges**

9. Teaching and Learning Strategies

Strategy	theoretical lecture , talk and discussions, reports and quizzes and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Weekly assessment of student /discussions	Chapter 1: Human rights : history , definition and similarities	Lecture	Quizzes and homework
Second	2	Weekly assessment of student /discussions	Section 1: Definition of human right , what is human and what are human rights	Lecture	Quizzes and homework
Third	2	Weekly assessment of student	History of human rights in ancient Iraqi civilizations	Lecture	Quizzes and homework

		/discussions			
Fourth	2	Weekly assessment of student /discussions	Human rights in in eastern and western ancient civilizations	Lecture	Quizzes and homework
Fifth	2	Weekly assessment of student /discussions	Human rights in Christian and Jewish religions	Lecture	Quizzes and homework
Sixth	2	Weekly assessment of student /discussions	Human rights in Islam and characteristics	Lecture	Quizzes and homework
Seventh	2	Weekly assessment of student /discussions	Section 2: human rights in meddle ages: Church control and feudalism	Lecture	Quizzes and homework
Eighth	2	Weekly assessment of student /discussions	Human rights within church control and feudalism and royal foundation	Lecture	Quizzes and homework
Nineth	2	Weekly assessment of student /discussions	Protestant doctrine and natural rights theory	Lecture	Quizzes and homework
Tenth	2	Weekly assessment of student /discussions	Human rights from social contract theory point of view	Lecture	Quizzes and homework
Eleventh	2	Weekly assessment of student /discussions	Human rights in civilizations and revolutions and their constitutions	Lecture	Quizzes and homework
Twelfth	2	Weekly assessment of student /discussions	First: Western revolutions and human rights	Lecture	Quizzes and homework
Thirteen	2	Weekly assessment of student /discussions	Second: Human rights and French citizen	Lecture	Quizzes and homework
Fourteenth	2	Weekly assessment of student /discussions	Third: Oriental revolutions and human rights	Lecture	Quizzes and homework
Fifteenth	2	Weekly assessment of student /discussions	Chapter 2: Human rights , determination definition and types	Lecture	Quizzes and homework
Sixteenth	2	Weekly assessment of student /discussions	Section 1: Types of human rights and linkage	Lecture	Quizzes and homework
Seventeenth	2	Weekly assessment of student /discussions	Individual human rights	Lecture	Quizzes and homework

Eighteenth	2	Weekly assessment of student /discussions	Population human rights	Lecture	Quizzes and homework
Nineteenth	2	Weekly assessment of student /discussions	Economic , social and cultural human rights, and civilian and political human rights	Lecture	Quizzes and homework
Twentieth	2	Weekly assessment of student /discussions	Modern human rights, rights in development , rights in clean environment , rights in solidarity , rights in peace	Lecture	Quizzes and homework
Twenty first	2	Weekly assessment of student /discussions	Linkage between human rights, all undividable	Lecture	Quizzes and homework
Twenty second	2	Weekly assessment of student /discussions	Section 2: The relationship between human rights and general freedom in international and Arabic constitutions	Lecture	Quizzes and homework
Twenty third	2	Weekly assessment of student /discussions	Human rights in international announcement of human rights and international conventions	Lecture	Quizzes and homework
Twenty fourth	2	Weekly assessment of student /discussions	human rights in Arabic constitutions	Lecture	Quizzes and homework
Twenty fifth	2	Weekly assessment of student /discussions	Chapter 3: International, regional and national confession in human rights in current and modern history	Lecture	Quizzes and homework
Twenty sixth	2	Weekly assessment of student /discussions	Section 1: International confession of human rights since first world war	Lecture	Quizzes and homework
Twenty seventh	2	Weekly assessment of student /discussions	United nations and human rights issue	Lecture	Quizzes and homework

Twenty eighth	2	Weekly assessment of student /discussions	United nations and human rights system development	Lecture	Quizzes and homework
Twenty nineth	2	Weekly assessment of student /discussions	Section 2: The regional confession of human rights	Lecture	Quizzes and homework
Thirtieth	2	Weekly assessment of student /discussions	European convention of human rights 1950 American convention of human rights 1969 African convention of human rights 1981 Arabic convention of human rights	Lecture	Quizzes a homework

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)	Human rights .2004. Hafez A. Aldelemy
Main references (sources)	Democracy and human rights . Al-Jabry M.A. Human rights and democracy and public freedom. Kadim M.S.
Recommended books and references (scientific journals, reports...)	Human rights , development , contents and protection. Hadi R.A. Democracy and human rights . Dr. Wtot A.
Electronic References, Websites	New references, Articles and books from Web

Course Description Form

1. Course Name: Arabic language

2. Course Code: **EDBI24F108**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture , Classroom

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

1 hour each class / 2 units

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

Name: Assist Prof .Dr. Ali Ghanem Saadallah
Email:

8. Course Objectives

Course Objectives	• **The course is to enrichment of student skills in Arabic language grammar**

9. Teaching and Learning Strategies

Strategy	lecture and discussions

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Basic concepts	In and her sisters	Lecture	Homework
Second	2	Basic concepts	Kaan and her sisters	Lecture	Homework
Third	2	Basic concepts	Dhan and her sisters	Lecture	Homework
Fourth	2	Basic concepts	Subject	Lecture	Homework
Fifth	2	Basic concepts	Predicates	Lecture	Homework
Sixth	2	Basic concepts	Statements	Lecture	Homework
Seventh	2	Basic concepts	Noun sentence	Lecture	Homework
Eighth	2	Basic concepts	Verb sentence	Lecture	Homework

Nineth	2	Basic concepts	The number	Lecture	Homework
Tenth	2	Basic concepts	object	Lecture	Homework
Eleventh	2	Basic concepts	Object of accompaniment	Lecture	Homework
Twelfth	2	Basic concepts	Object of purpose	Lecture	Homework
Thirteen	2	Basic concepts	Subject	Lecture	Homework
Fourteenth	2	Basic concepts	Demonstrative noun	Lecture	Homework
Fifteenth	1	Basic concepts	Proper nouns	Lecture	Homework
Sixteenth	2	Basic concepts	Definite with Al	Lecture	Homework
Seventeenth	2	Basic concepts	Defenite by addition	Lecture	Homework
Eighteenth	2	Basic concepts	Zuhair Abn Aby Salama poem	Lecture	Homework
Nineteenth	2	Basic concepts	Ibn Zaedon Poem	Lecture	Homework

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, any)	General Grammer of Arabic language
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Methods of teaching Arabic language , Naziah Alaway
Electronic References, Websites	

Course Description Form

1. Course Name: Earth Science

2. Course Code: EDBI24F105

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Classroom

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

1/2

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

Name: Teacher Zainab mousadaq shanshal
Email: zainabmosadq@uomosul.edu.iq

8. Course Objectives

Course Objectives	**● Learn about the basics of earth science** **● Learn about some Earth science concepts** **● Study of external and internal processes on Earth**

9. Teaching and Learning Strategies

Strategy	Theoretical lectures Dialogue and discussions Daily and monthly exams

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	1	Basics of Earth Science	Basics of Earth Science	Lecture	quizzes
Second	1	The relationship of geology to other sciences	The relationship of geology to the engineering, medic military and economic sciences	Lecture	quizzes
Third	1	Earth composition	Earth layers	Lecture	quizzes
Fourth	1	The Earth's inner layers	The Earth's inner laye are the crust, mantle, a core	experiment	Quiz, report , homework
Fifth	1	Petrology	Definition of rock and methods of its formation	Problem solving	Homework

Sixth	1	Igneous rocks	their definition, classification, and method of formation	experiment	Quiz, report , homework
Seventh	1	Metamorphic rocks	their definition, classification, and method of formation	Problem solving	Homework
Eighth	1	Sedimentary rocks	their definition, classification, and method of formation	experiment	Quiz, report , homework
Nineth	1	The rock cycle in nature	The relationship between the three rocks	Problem solving	Homework
Tenth	1	Geological structures	Describing and defining the types of earth structures	experiment	Quiz, report homework
Eleventh	1	External landscaping operat	operations above surface of the earth	experiment	Quiz, report homework
Twelfth	1	Erosion, weathering, transport and sedimentation	their definition and study	Problem solving	Homework
Thirteen	1	Internal processes of the Earth	Processes below the surface of the Earth	Lecture	Quiz, and homework
Fourteenth	1	Earthquakes and volcanoes, their definition	their definition, causes, and distribution on the Earth's surface	Problem solving	Homework
Fifteenth	1	Exam			
Sixteenth	1	Fossils,	their definition and classification	lecture	Quiz, report , homework
Seventeenth	1	Methods of preserving fossils:	Studying various methods of preserving fossils	lecture	Quizzes
Eighteenth	1	Continental dynamics	Definition of tectonic plates and the causes of their movement	Problem solving	Quiz, and homework
Nineteenth	1	The economic importance of geology	the study of types of minerals and economic ores	Lecture	Quizzes
Twentieth	1	Oil and the method of its formation in the earth.	The theory of the origin of oil and the methods of its formation	Problem solving	homework

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: Theoretical invertebrates

2. Course Code: **EDBI24F201**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Attendance, Classroom

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

4/4

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

Name:1. Assistant Prof. Dr. Hanan Sadeeq Sadoon
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2. Assistant Prof. Dr.Safaa Mohammed Mahmood
Email: mohamedsafaa213@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Invertebrates** • **Knowing the practical applications of Invertebrates**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	**Understand the meaning and importance of invertebrate organisms and the taxonomic orders to which they belong.**	**Introduction to invertebrates**	Lecture	Quiz
Second	2	**Understanding the kingdoms of life—prokaryotic and eukaryotic features—economic, and medical importance of invertebrates.**	**Life kingdoms**	**Lecture - Presentation**	Quiz
Third	2	**Understanding the characteristics of protozoa and the organelles that are part of their composition.**	**Phylum: Protozoa**	**Lecture - Presentation**	Quiz
Fourth	2	**Understanding methods Reproduction in Protozoa Asexual reproduction:**	**Reproduction in Protozoa**	**Lecture - Presentation**	Quiz

		Budding-binary division – Simple double division- Cytoplasmic division.			
Fifth	2	**Understanding the types of reproduction. Sexual reproduction in protozoa, colony formation**	**Sexual reproduction in protozoa, colony formation**	**Lecture - Presentation**	Quiz
Sixth	2	**Understanding a class flagellates: volvex, Plasmodium-Giardia, class sarcodina : Amoeba, shape, size**	**An example of protozoa**	**Lecture - Presentation**	Quiz
Seventh	2	**Understanding the types. Nutrition in *amoeba proteus*: circumvallation- circumfluence,- import – invagination- digestion.**	**methods of Amoeba nutrition and digestion**	**Lecture - Presentation**	Quiz
Eighth	2	**Understanding the vital activities of amoeba: breathing, excretion, behavior of amoeba towards various stimuli, methods of reproduction in amoeba.**	***amoeba proteus***	**Lecture - Presentation**	Quiz
Nineth	2	**Understanding *Paramecium*: morphology- nutrition; respiration- osmoregulation- reproduction.**	**Class : Ciliates (*paramecium*)**	**Lecture - Presentation**	Quiz
Tenth	2	**Understanding the Monocyst parasite - life cycle - *Plasmodium* - the importance of protozoa.**	**Class :sporozoa (*Monocyst, Plasmodium*)**	**Lecture Presentation**	Quiz
Eleventh	2	**Understanding the general features -classification of porifera - sponge animals- cell types of sponges.**	**Phylum: porifera (sponge)**	**Lecture Presentation**	Quiz
Twelfth	2	**Understanding the types of channel systems in Porifera: the asconic-cyconic-lyconic style and regeneration in Porifera**	**Canal systems and porifera body structure**	**Lecture - Presentation**	Quiz
Thirteen	2	**understudying the types of reproduction in Poreifera: asexual reproduction, budding-reducing bodies, and bud formation.**	**Asexual reproduction in porifera**	**Lecture - Presentation**	Quiz
Fourteenth	2	**Understandying sexual reproduction in Porifera- the relationship of Porifera with other animals- importance of Porifera.**	**Sexual reproduction in porifera**	**Lecture - Presentation**	Quiz
Fifteenth	1	Exam			
Sixteenth	2	**Understanding the general features of the cnidaria phylum - *Hydra* as an example morpholog - internal structure - epidermis - epithelial cells - glandular cells - interstitial - sensory cells... etc.**	**phylum: Cnidaria (*Hydra*)**	**Lecture - Presentation**	Quiz
Seventeenth	2	**Understanding the structure of the stinging cell - types of stinging cells - nematocysts - convoluted - small - large - cells of the gastric layer**	**Types of stinging cells - structure of the gastric layer in Hydra**	**Lecture - Presentation**	Quiz
Eighteenth	2	**Understanding the methods of hydra transmission - coupling movement - crawling - feeding - breathing - excretion**	**Manifestations of life in *Hydra***	**Lecture - Presentation**	Quiz
Nineteenth	2	**Understanding the sense organs and nervous system in hydra—and regeneration and immortality in *Hydra***	**The sense organ in *Hydra***	**Lecture - Presentation**	Quiz

Twentieth	2	**Understanding the methods of reproduction in Hydra—sexual and asexual reproduction—identifying the Obelia colony—the forms that make up the colony**	**Methods of reproduction in the *Hydra* - the *Obelia* animal**	**Lecture - Presentation**	Quiz
Twenty first	2	**Understanding the subclasses of Anthozoa—anemone animal -internal structure; the epidermis-gastric layer - types of reproduction .**	**Phylum : Cnidaria, Class : Anthozoa (Anemones)**	**Lecture - Presentation**	Quiz
Twenty second	2	**Understanding the morphology of *Gorgonia* animal - internal structure - environment - Understanding the *corallium* animal - Benefits and harms of Cnidaria**	***Gorgonia-Corallium***	**Lecture - Presentation**	Quiz
Twenty third	2	**Understanding Flatworms-General features--classificatio**	**Phylum platyhelminthes**	**Lecture - Presentation**	Quiz
Twenty fourth	2	**Understanding the class of turbellaria: planaria animal as an example- planaria-morphology- body wall-types of movement**	**Class : turbellaria (*planaria*)**	**Lecture - Presentation**	Quiz
Twenty fifth	2	**Understanding the general features Aschelminthes-classification- morphology-structure of the body wall-Digestive system.**	**Phylum Aschelminthes (*Ascaris*)**	**Lecture - Presentation**	Quiz
Twenty sixth	2	**Understanding the general features of Phylum Annelida: classification, morphology, structure of the body wall, types of cells, types of body muscles, digestive system, nervous system, and circulatory system**	**Phylum Annelida (*Nereis* , *Lumbricus*,*Hirudo*)**	**Lecture - Presentation**	Quiz
Twenty seventh	2	**Understanding the general features of Arthropoda: classification- *Astacus* morphology, structure of the body wall, types of cells, types of body muscles, digestive system, nervous system, circulatory system and reproductive system**	**Phylum: Arthropoda (*Astacus*)**	**Lecture - Presentation**	Quiz
Twenty eighth	2	**Identify a group of arthropod models – morphology - types of suffixes Internal anatomy-digestive system-circulation- Respiratory-nervous-reproductive system**	**Phylum: Arthropoda** Solomon's ring Julus Limulus, Spider, barnacle, and other models	**Lecture - Presentation**	Quiz
Twenty nineth	2	**Recognizing the general features of echinoderms - classification - the external appearance of starfish and brittle – comparison.**	**Phylum :Echinodermata** Starfish , brittle star, cucumbers	**Lecture - Presentation**	Quiz
Thirtieth	1	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)	Invertebrates book for students of the Life Sciences Department of the Faculties of Science and Education, written by Dr. Zuhair Muhammad Abdullah Al-Sharouk and Najm Shalimon Gorkis, Dar Al-Kutub for Printing and Publishing, Mosul,
Main references (sources)	Invertebrate Science - Dr. Murad Baba Murad.
Recommended books and references (scientific journals, reports...)	Richard ,C. B. and Stephen, M. S . 2016 . Invertebrates 3rd Edition. Sinauer Associates is an imprint of Oxford University Press . ISBN-13- 978-1605353753.
Electronic References, Websites	https://library.si.edu/research/invertebrate-zoology/

Course Description Form

1. Course Name: Practical invertebrates

2. Course Code: **EDBI24F201**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Assistant Prof. Hanan Siddiq Saadoun, Assistant Prof. Safaa Mohammed Mahmood

Tamara Walid Jihad

Dr.. Hoda Saber Khalaf

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8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies

Strategy	Practical and t • Identify the basic principles of invertebrate science • Learn about practical applications of invertebrate animal models heoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Introduction to invertebrates, an overview of the importance of the role of scientists in the evolution of invertebrates	The importance of invertebrates And its relationship withother organisms	Blackboard, presentat and video lectures	quizzes
Second	2	Object recognition amoeba	The world of protists features of protists, classification of prot shapes of protists, th nucleus in protists, movement organelle nutritional gaps	Blackboard, presentat and video lectures	quizzes
Third	2	Object recognition Volvix, Trypanosoma, Giardia	contracting vacuoles reproduction in primary and its type colony formation, models of primary, Volvix, Trypanosom Giardia	Blackboard, presentation and vid lectures	quizzes
Fourth	2	Recognition Class of amoebiasis	Classification of polyp amoebiasis, shape and s nutrition in amoebiasis its methods (solidificat and compaction), digest in amoebiasis	Blackboard, presentation and video lectures	Quiz, report , homework
Fifth	2	Object recognition Shape and size	Trypanosoma, Giardia	Blackboard, presentation and video lectures	Homework
Sixth	2	Understand the basic principles	Class of ciliates, paramecium size and shape, cilia and nucleus, contractile vacuole, nutrition, osmoregulation, reproduction in paramecium, cross-fertilization and conjugation, class of sporozoa, Monocystis parasite, life cycle, importance of protozoa, benefits and harms	Blackboard, presentation and video lectures	Quiz, report , homework
Seventh	2	Understanding the basic principles while identifying the basis of classification	Phylum of porosities, features, classification, types of spines in porosities, on the basis of which the classification was made.	Blackboard, presentation and video lectures	Homework
Eighth	2	Identify the organism	Types of cells in the pores with	Blackboard, presentation and	Quiz, report ,

		Leucosolina, and understand its basic principles	drawings, structure of the body wall in the pores, canal systems, variation in the pores, reproduction in the pores, the relationship of the pores with other animals, the importance of the pores	video lectures	homew ork
Nineth	2	Hydra organism identification and classification to the phylum	Cnidaria phylum, classification, features, Hydra and its types, structure of the body wall in Hydra, types of non-cnidarian cells, reproduction in Hydra, aspects of life in Hydra, immortality and survival in Hydra.	Blackboard, presentation and video lectures	Homew ork
Tenth	2	Identify the object Obelia	Obelia, structure of the body wall, reproduction in obelia, the life cycle of obelia, comparison between obelia and polyps, the differences between them.	Blackboard, presentation and vi lectures	Quiz, rep , homewo
Eleventh	2	Identify the anem Metridium organism	Class of pansies, anemones Metridiu movement, nutritio stony corals A. The importance of cnidarians, benefits a harms	Blackboard, presentation and vi lectures	Quiz, rep , homewo
Twelfth	2	Identify the Planaria organism, , hepatic worm Taenia solium worm	Triphyletic animals, Acoelomata, phylum of flatworms, classification, features, planaria, body wall in planaria, benefits of parenchyma cells, digestive system, nervous system, sexual reproduction and its organs and asexual, reproductive, grafting, and starvation in planaria.	Blackboard, presentation and video lectures	Homewo rk
Thirteen	2	Object recognition Ascaris	Phylum Ascohelminthes	Blackboard, presentation and vid	Quiz, and

			Features classification Ascaris model	lectures	homework
Fourteenth	2	Identify the basic principles	Phylum Annelidae Nereis model	Blackboard, presentation and video lectures	Homework
Fifteenth	1	Exam			
Sixteenth	2	Object recognition	earthworm model Hirudo medicinalis model Aphrodite model	Blackboard, presentation and video lectures	Quiz, report , homework
Seventeenth	2	Object recognition	Phylum Arthropoda Features and classification Astacus	Blackboard, presentation and video lectures	Quizze
Eighteenth	2	Recognizing the basic principles in addition to identifying the object	Phylum Arthropoda (Cipedes) Scolopendra animal Mother forty-four	Blackboard, presentation and video lectures	Quiz, and homework
Nineteenth	2	Recognizing the basic principles in addition to identifying the object	Phylum Arthropoda (millipedes) Solomon's ring Julus	Blackboard, presentation and video lectures	Quizzes
Twentieth	2	Recognizing the basic principles in addition to identifying the object	Phylum Arthropoda Limulus model	Blackboard, presentation and video lectures	homework
Twenty first	2	Recognizing the principles the basic	Buthus model and Speder model	Blackboard, presentation and video lectures	Quiz
Twenty second	2	Object recognition	Lepas model goose barnacle, Balanus rock barnacle	Blackboard, presentation and video lectures	homework
Twenty third	2	Object recognition	Phylum Mullusca	Blackboard, presentation and video lectures	Quiz
Twenty fourth	2	Object recognition	Helix structure, classification and life	Blackboard, presentation and video lectures	homework
Twenty fifth	2	Object recognition	Octopus animal Its structure, classification and life Sepia animal Its structure, classification and life	Blackboard, presentation and video lectures	Quiz

Twenty sixth	2	Object recognition	Sea dollar	Blackboard, presentation and video lectures	homework
Twenty seventh	2	Understand the basic principles	Phylum Echinodermata Features, classification and models	Blackboard, presentation and video lectures	Quiz
Twenty eighth	2	Object recognition	Echinodermata Starfish and brittle star And comparison between them	Blackboard, presentation and video lectures	Quiz
Twenty nineth	2	Object recognition	Echinodermata Classify cucumbers and model sea cucumbers	Blackboard, presentation and video lectures	Quiz
Thirtieth	1	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)	Invertebrate science - Dr. Zuhair Al-Sharouk, Dr. Najm Shlimoun
Main references (sources)	nvertebrate science - Dr. Murad Baba Murad
Recommended books and references (scientific journals, reports...)	Invertebrate zoology,2019
Electronic References, Websites	https://library.si.edu/research/invertebrate-zoology/

Course Description Form

1. Course Name: Histology

2. Course Code: **EDBI24F203**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture , Classroom

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

4/6

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

Name: Assistant Prof. Dr. Sanabel Abdul-monem Abdul-majeed
Email: sanabel.althanoon@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Histology** • **Knowing the structure of animal tissues**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, reports and quizzes

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Understanding structure and Function	Introduction of life science	Lecture	Quizzes and oral questions
Second	2	Understanding structure and Function	Epithelial tissue part 1	Lecture	Quizzes and oral questions
Third	2	Understanding structure and Function	Epithelial tissue part 2	Lecture	Quizzes and oral questions
Fourth	2	Understanding structure and Function	Connective tissue part 1	Lecture	Quizzes and oral questions
Fifth	2	Understanding structure and	Connective tissue part 2	Lecture	Quizzes and oral questions

		Function			
Sixth	2	Understanding structure and Function	Connective tissue – skeletal part 1	Lecture	Quizzes and oral questions
Seventh	2	Understanding structure and Function	Connective tissue – skeletal part 2	Lecture	Quizzes and oral questions
Eighth	2	Understanding structure and Function	Connective tissue – Blood part 1	Lecture	Quizzes and oral questions
Nineth	2	Understanding structure and Function	Connective tissue – Blood part 2	Lecture	Quizzes and oral questions
Tenth	2	Understandin g structure and Function	Muscular tissue part 1	Lecture	Quizzes and oral questions
Eleventh	2	Understanding structure and Function	Muscular tissue part 2	Lecture	Quizzes and oral questions
Twelfth	2		Practical exam		
Thirteen	2		Practical exam		
Fourteenth	2		Mid-year exam		
Fifteenth	1		Mid-year exam		
Sixteenth	2	Understanding structure and Function	Nervous tissue part 1	Lecture	Quizzes and oral questions
Seventeenth	2	Understanding structure and Function	Nervous tissue part 2	Lecture	Quizzes and oral questions
Eighteenth	2	Understanding structure and Function	Circulatory system part 1	Lecture	Quizzes and oral questions
Nineteenth	2	Understanding structure and Function	Circulatory system part 2	Lecture	Quizzes and oral questions
Twentieth	2	Understanding structure and Function	Immune system	Lecture	Quizzes and oral questions
Twenty first	2	Understanding structure and Function	Skin	Lecture	Quizzes and oral questions
Twenty second	2	Understandin g structure and Function	Digestive system part 1	Lecture	Quizzes and oral questions
Twenty thir	2	Understandin g structure	Digestive system part 2	Lecture	Quizzes and oral questions

		and Function			
Twenty fourth	2	Understanding structure and Function	Respiratory system	Lecture	Quizzes and oral questions
Twenty fifth	2	Understanding structure and Function	Urinary system	Lecture	Quizzes and oral questions
Twenty sixth	2	Understanding structure and Function	Reproductive systyem	Lecture	Quizzes and oral questions
Twenty seventh	2		Practical exam		
Twenty eighth	2		Practical exam		
Twenty nineth	2		Mid-year exam		
Thirtieth	1		Mid-year 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, any)	Histology Part 1 and 2 Kawakib Al-Mukhtar and Abdul – Hakim Al-rawi, 2000
Main references (sources)	Janqueria L.C. et al., (1986) Basic Histology
Recommended books and references (scientific journals, reports...)	Gartner P.L. Textbook of Histology 4th edition 2016
Electronic References, Websites	http://www.classcentral.com/subject/histology

Course Description Form

1. Course Name: Practical Histology

2. Course Code: **EDBI24F203**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

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Dr. Semaa A. Baker semaaabakir123@uomosul.edu.iq
Mss. Ekhlass K. Hamid ekhlasshamid@uomosul.edu.iq
Mr. Bashar R. Karem Bashar.karem@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of histology** • **Knowing the the theoretical foundations of human b tissues**

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, dialogue and discussions, animal dissection, slide show

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Learn about the basic concepts of histology	Microscopic preparations	Lecture	Quizzes and Practica application
Second	2	Identify epithelial tissues	Simple Epithelial tissues	Lecture	examinations, slides f models
Third	2	Identify epithelial	Compound Epithelial	Lecture	examinations, slides f mode

		tissues	tissues		
Fourth	2	Identify epithelial tissues	Glandular Epithelial tissues	Lecture	examinations, slides for mode
Fifth	2	Identify connective tissues	Elements of connective tissues	Lecture	examinations, slides for mode
Sixth	2	Identify connective tissues	Loose connective tissues	Lecture	examinations, slides for mode
Seventh	2	Identify connective tissues	Dense connective tissues	Lecture	examinations, slides for mode
Eighth	2	Identify connective tissues	Skeletal connective tissues\ cartilage	Lecture	examinations, slides for mode
Nineth	2	Identify connective tissues	Skeletal connective tissues\ bone	Lecture	examinations, slides for mode
Tenth	2	Identify connective tissues	Special connective tissues\ blood	Lecture	examinations, slides mode
Eleventh	2	Identify Muscular tissues	Skeletal Muscular tissues	Lecture	examinations, slides mode
Twelfth	2	Identify Muscular tissues	Smooth Muscular tissues	Lecture	examinations, slides for mode
Thirteen	2	Identify Muscular tissues	Cardic Muscular tissues	Lectur	examinations, slides for mode
Fourteenth	2	Identify Nervous tissues	Nervous tissues	Lecture	examinations, slides for mode
Fifteenth	2	Identify Nervous tissues	Central Nervous tissues	cture	examinations, slides for mod
Sixteenth	2	Identify the histological structure of the circulatory system	Histological structure of heart	Lecture	examinations, slides for mode
Seventeenth	2	Identify the histological structure of the circulatory system	Histological structure of arteries	Lecture	examinations, slides f mode
Eighteenth	2	Identify the histological	Histological structure of	Lecture	examinations, slides for mode

		structure of the circulatory system	venues		
Nineteenth	2	Identify the histological structure of lymphatic organs	Histological structure of lymph nodes and thymus	Lecture	examinations, slides for mode
Twentieth	2	Identify the histological structure of lymphatic organs	Histological structure of tonsil andspleen	Lecture	examinations, slides for mode
Twenty first	2	Identify the histological structure of the digestive system	Histological structure of tongue	Lecture	examinations, slides for mode
Twenty second	2	Identify the histological structure of the digestive system	Histological structure of esophagus	Lecture	examinations, slides for mode
Twenty third	2	Identify the histological structure of the digestive system	Histological structure of stomach	Lecture	examinations, slides for mode
Twenty fourth	2	Identify the histological structure of the digestive system	Histological structure of small intestine	Lecture	examinations, slides for mode
Twenty fifth	2	Identify the histological structure of the digestive system	Histological structure of large intestine	Lecture	examinations, slides for mode
Twenty sixth	2	Identify the histological structure of the digestive system	Histological structure of liver	Lecture	examinations, slides for mode
Twenty seventh	2	Identify the histological structure of the digestive system	Histological structure of pancreas	Lecture	examinations, slides for mode
Twenty eighth	2	Identify the histological structure of the Respiratory system	Histological structure of trachea	Lecture	examinations, slides for mode
Twenty nineth	2	Identify the histological structure of the Respiratory	Histological structure of lung	Lecture	examinations, slides for mode

		system			
Thirtieth	2	Identify the histological structure of the Urinary system	Histological structure of kidney	cture	examination slides for mo

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)	Genetics. 1989. Saad J. Taj-Aldeen and Abdu lnaaby H. Al-Essa .Ibn alathir Publication house
Main references (sources)	Al- Makhtar K. and Al- Rawi . 2000. Histology, 5th ed. Ibn Al- Atheer Press. Iraq.
Recommended books and references (scientific journals, reports...)	Junqueira's Basic Histology: Text and Atlas . 2019. Mc Graw Hill Higher Education, 8ed , U.S.A. Essential Histology. 2001. Mc Graw Hill Higher Education, 8ed , U.S.A.
Electronic References, Websites	https://histologyguide.com/

Course Description Form

1. Course Name: Embryology

2. Course Code: EDBI24F204

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/09/2023

5. Available Attendance Forms: Attendance (live lecture) + Google - Classroom

6. Number of Credit Hours (Total) / Number of Units (Total) : 2 hours / week

2/6

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

Name: Dr. Rabeea Hazim Mohammed
Email: dr.rabeeahm@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Providing students with the basic concepts of embryology** **• Students should know the relationship between embryology and other branche** **• Understanding the history of embryology** **• Increase students' knowledge with laboratory skills, including the use microscopes and methods of fetal diagnosis**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussions, conducting practical experiments, daily reports and assignments, direct discussions with students, forming discussion groups among the students themselves

10. Course Structure

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

First	2	Knowledge And skill	Embryology- historica Background	Lecture Lecture	Daily Quiz, report and , homework
Second	2	Knowledge And skill	Special fields in Embryology	Lecture	Daily Quiz, report and ,
Third	2	Knowledge And skill	Reproductive orga Gametogenesis	Lecture	homework
Fourth	2	Knowledge And skill	Spermatogenesis Oogenesis	Lecture Lecture	Daily Quiz, report and , homework
Fifth	2	Knowledge And skill	Ovulation, Structure of Egg	Lecture	Daily Quiz, report and ,
Sixth	2	Knowledge And skill	Sexual cycle and fertilization	Lecture Lecture	homework Daily Quiz, report and ,
Seventh	2	Knowledge And skill	Fertilization in details	Lecture	homework
Eighth	2	Knowledge And skill	Fertilization in Details	Lecture Lecture	Daily Quiz, report and , homework
Ninth	2	Knowledge And skill	Cleavage, Morula and Blastula	Lecture	Daily Quiz, report and ,
Tenth	2	Knowledge And skill	Gastrulation and Germ layers	Lecture Lecture	homework Daily Quiz, report and ,
Eleventh	2	Knowledge And skill	Gastrulation and Germ layers	Lecture	homework
Twelfth	2	Knowledge And skill	Embryology of Amphioxus (early development)	Lecture Lecture	Daily Quiz, report and , homework
Thirteen	2	Knowledge And skill	Embryology of Amphioxus (organogenesis)	Lecture	Daily Quiz, report and ,
Fourteenth	2	Knowledge And skill		Lecture	homework
Fifteenth	2	Mid term		------	--------

Sixteenth	2	Knowledge And skill	Embryology of Frog (early stages)	Lecture	Daily Quiz, report and , homework
Seventeenth	2	Knowledge And skill	Frog, blastula and gastrulation	Lecture	
Eighteenth	2	Knowledge And skill	Frog- Organogenesis	Lecture	Daily Quiz, report and , homework
Nineteenth	2	Knowledge And skill	Frog, heart formation and Kidney	Lecture	Daily Quiz, report and , homework
Twentieth	2	Knowledge And skill	Chick embryonic development	Lecture	Daily Quiz, report and , homework
Twenty first	2	Knowledge And skill	Primitive streak Stage	Lecture Lecture	Daily Quiz, report and , homework
Twenty Second	2	Knowledge And skill	Changes between 16-18 incubation	Lecture	Daily Quiz, report and , homework
Twenty third	2	Knowledge And skill	Changes between 18-24 incubation	Lecture	Daily Quiz, report and , homework
Twenty fourth	2	Knowledge And skill	Changes between 24-38 incubation	Lecture	Daily Quiz, report and , homework
Twenty fifth	2	Knowledge And skill	Changes between 38-55 incubation	Lecture	Daily Quiz, report and , homework
Twenty sixth	2	Knowledge And skill	Changes between 3rd and 4th day of incubation	Lecture	Daily Quiz, report and , homework
Twenty seven	2	Knowledge And skill	Mammalian development	Lecture	Daily Quiz, report and , homework
Twenty eighth	2	Knowledge And skill	Mammalian development	Lecture	Daily Quiz, report and , homework
Twenty ninth	2	Knowledge And skill			
Thirty		Final exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Atlas of embryology
Main references (sources)	Foundation of Embryology / Brad M. Patten / Bruce M. Carlson Embryology, Kwakib Al-Mukhtar
Recommended books and references (scientific journals, reports...)	Embryology, Kwakib Al-Mukhtar
Electronic References, Websites	Internet

Course Description Form

1. Course Name: Embryology – practical

2. Course Code: EDBI24F204

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/09/2023

5. Available Attendance Forms: Attendance (live lecture) + Google - Classroom

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

6/6

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

Name: Dr. Rabeea Hazim Mohammed
Email: dr.rabeeahm@uomosul.edu.iq
2- Arwa Address Ahmed
3- Shireen Yaseen Qasim
3- Raghad Ahmed Abbas

8. Course Objectives

Course Objectives	• **Understanding the basic principles of embryology** • **Understanding the practical applications of embryology**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussions, conducting practical experiments, daily reports and assignments, direct discussions with students, forming discussion groups among the students themselves

10. Course Structure

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

First	6	Knowledge And skill	Recognition of embryology	Practical Lecture	Daily Quiz, report and , homework
Second	6	Knowledge And skill	Recognition of Reproductive system	Practical Lecture	Daily Quiz, report and , homework
Third	6	Knowledge And skill	Reproductive orga Gametogenesis	Practical Lecture	Daily Quiz, report and , homework
Fourth	6	Knowledge And skill	Spermatogenesis Oogenesis	Practical Lecture	Daily Quiz, report and , homework
Fifth	6	Knowledge And skill	Fertilization	Practical Lecture	Daily Quiz, report and , homework
Sixth	6	Knowledge And skill	Recognition of Cleavage, Morula and Blastula	Practical Lecture	Daily Quiz, report and , homework
Seventh	6	Knowledge And skill	Recognition of Gastrulation	Practical Lecture	Daily Quiz, report and , homework
Eighth	6	Knowledge And skill	Recognition of Amphioxus	Practical Lecture	Daily Quiz, report and , homework
Ninth	6	Knowledge And skill	Recognition of Embryology of Amphioxus (organogenesis)	Practical Lecture	Daily Quiz, report and , homework
Tenth	6	Knowledge And skill		Practical Lecture	Daily Quiz, report and , homework
Eleventh	6	Knowledge And skill	Recognition of Frog Embryology	Practical Lecture	Daily Quiz, report and , homework
Twelfth	6	Knowledge And skill	Frog, blastula and gastrulation	Practical Lecture	Daily Quiz, report and , homework
Thirteen	6				
Fourteenth	6	Knowledge And skill	Frog- Organogenesi	Practical Lecture	Daily Quiz, report and , homework
Fifteenth		Mid term	Recognition of	------	--------

Sixteenth	6	Knowledge And skill	Chick embryonic development	Practical Lecture	Daily Quiz, report and , homework
Seventeenth	6	Mid term			
Eighteenth	6	Knowledge And skill	Recognition of Primitive streak Stage	Practical Lecture	Daily Quiz, report and , homework
Nineteenth	6	Knowledge And skill	Recognition of 16 hours incubation	Practical Lecture	---------
Twentieth	6	Knowledge And skill	Recognition of 18 hours incubation	Practical Lecture	Daily Quiz, report and , homework
Twenty first	6	Knowledge And skill	Recognition of 22-24 hours	Practical Lecture	Daily Quiz, report and , homework
Twenty Second	6	Knowledge And skill	Recognition of 33 h incubation	Practical Lecture	Daily Quiz, report and , homework
Twenty third	6	Knowledge And skill	Recognition of 48 h incubation	Practical Lecture	Daily Quiz, report and , homework
Twenty fourth	6	Knowledge And skill	Recognition of 72 h incubation	Practical Lecture	Daily Quiz, report and , homework
Twenty fifth	6	Knowledge And skill	Recognition of 96 h incubation	Practical Lecture	Daily Quiz, report and , homework
Twenty sixth	6	Knowledge And skill	Recognition of Twins	Practical Lecture	Daily Quiz, report and , homework
Twenty seven	6	Knowledge And skill	Recognition of Congenital malformation	Practical Lecture	Daily Quiz, report and , homework
Twenty eighth	6	Knowledge And skill	Feedback	Practical Lecture	Daily Quiz, report and , homework
Twenty ninth	6	Knowledge And skill	Feedback	Practical Lecture	
Thirty		Final exam			

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Embryology, Kwakib Al-Mukhtar
Recommended books and references (scientific journals, reports...)	Embryology, Kwakib Al-Mukhtar
Electronic References, Websites	Internet

Course Description Form

1. Course Name: Plant taxonomy

2. Course Code: **EDBI24F202**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Assistant Prof. Dr. Aamer Mohsen Mahmmod ALmaathidy
Email: dr.aamer@uomosul.edu.iq.

8. Course Objectives

Course Objectives	• **Knowing the basic principles of plant taxonomy** • **Knowing the plant families and how to diagnose them**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Taxonomy ,its definition ,importance,diagnosis of plant,methods used in diagnosis methods	Taxonomy ,its definition ,importance,diagnosis of plant,methods used in diagnosis methods	Lecture	quizzes
Second	2	The relationship of taxonomy of other sciences	The relationship of taxonomy of other sciences	Lecture	quizzes
Third	2	History of plant taxonomy	History of plant taxonomy	Lecture	quizzes
Fourth	2	Foundation of classification the concept of species-classification ranks	Foundation of classificati the concept of species-classification ranks	Lecture	Quiz,
Fifth	2	Basis of classification:morphological,anatomical,and	Basis of classification:morphological,anatomical,and	Lecture	quiz

		cellular	cellular		
Sixth	2	Chemical foundations,numerical foundations,plant fossils	Chemical foundations,numerical foundations,plant fossils	Lecture	quiz
Seventh	2	Major and minor categories	Major and minor categories	Lecture	Quiz
Eighth	2	System of classification,artificial,natural,phylogenetic systems	System of classification,artificial,natural,phylogenetic systems	Lecture	Quiz
Nineth	2	Nomenclature,vernacular (common names),polynomial	Nomenclature,vernacular (common names),polynomial	Lecture	quiz
Tenth	2	Scientific nomenclature,generic name,specific	Scientific nomenclature,generic name,specific	Lecture	Quiz
Eleventh	2	Naming rules	Naming rules	Lecture	Quiz
Twelfth	2	Botanical names,prefixes,suffixes	Botanical names,prefixes,suffixes	Lecture	quiz
Thirteen	2	Specific epithets	Specific epithets	Lecture	quiz
Fourteenth	2	Evolutionary trends in seed plants	Evolutionary trends in seed plants	Lecture	Quiz
Fifteenth	1	Exam			
Sixteenth	2	Evidence for theories of evolution	Evidence for theories of evolution	lecture	Quiz
Seventeenth	2	Evolutionary trends and principles relating to flowers and angiosperms	Evolutionary trends and principles relating to flowers and angiosperms	lecture	Quizze
Eighteenth	2	Pollen grains,their origin,shapes,sizes,and distribution	Pollen grains,their origin,shapes,sizes,and distribution	Lecture	Quiz
Nineteenth	2	Cross pollination,self pollination,pollination methods	Cross pollination,self pollination,pollination methods	Lecture	Quizzes
Twentieth	2	Seed plants,their definition and characteristics	Seed plants,their definition and characteristics	Lecture	quiz
Twenty first	2	Gymnosperms-angiosperms	Gymnosperms-angiosperms	Lecture	Quiz
Twenty second	2	Identify the families of gymnosperms,pinaceae,cupressaceae	Identify the families of gymnosperms,pinaceae,cupressaceae	ecture	quiz
Twenty third	2	Identify the families of angiosperms,monocotyledons	Identify the families of angiosperms,monocotyledons	Lecture	Quiz

Twenty fourth	2	Gramineae, Amaryllidaceae	Gramineae, Amaryllidaceae	Lecture	homework
Twenty fifth	2	Cyperaceae,liliaceae	Cyperaceae,liliaceae	lecture	Quiz
Twenty sixth	2	Identify the families of angiosperms,dicotyledons	Identify the families of angiosperms,dicotyledons	lecture	quiz
Twenty seventh	2	Rutaceae,compositae	Rutaceae,compositae	Lecture	
Twenty eighth	2	Cruciferae,Ranunculaceae	Cruciferae,Ranunculaceae	lecture	Quiz
Twenty nineth	2	Solanaceae,papaveraceae	Solanaceae,papaveraceae	Lecture	Quiz
Thirtiet	1	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, ... etc

12. Learning and Teaching Resources

Classification of seed plants	Youssef Mansour ALkateb , 2000
Plant taxonomy	Ali Hussein almoussawi ,1987
Taxonomy of angiosperms B.P.Pandey 2009	B.P.Pandey 2009
https://mawdoo3.com	https://mawdoo3.com

Course Description Form

1. Course Name: Practical Plant taxonomy
2. Course Code: EDBI24F202
3. Semester / Year: 2023-2024
4. Description Preparation Date: 1/9/2023
5. Available Attendance Forms: Laboratory , Classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
2/2
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Prof. Dr. Aamer Mohsen Mahmmod ALmaathidy **Email: dr.aamer@uomosul.edu.iq, Dr.Muna Omar Mohammed Shehab muna.omar@uomosul.edu.iq. Dr.Hanan amier Abdulla Hananaabdulla@uomosul.edu.iq. Dr. Noor Nabeel yhya ALtalib Noor.nabeel@uomosul .edu.iq. zubaida mahmmod sallh Zubiada.altayi@uomosul.edu.iq.**
8. Course Objectives

Course Objectives	• **Knowing the basic principles plant taxonomy** • **Knowing the plant families a how to diagnose them**
9. Teaching and Learning Strategies	
Strategy	**Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Collction and preserving plant spcimen	Collction and preserving plan spcimen	Lecture	quizzes
Second	2	Vegetative parts,desecrption root	Vegetative parts,desecrptio root	Lecture	quizzes
Third	2	stem	Stem	Lecture	quizzes

Fourth	2	buds	buds	Lecture	Quiz,
Fifth	2	Leaves,leaf parts,shape,apex,base,margin,venation	Leaves,leaf parts,shape,apex,base,margin,venation	Lecture	quiz
Sixth	2	Stipules and visture	Stipules and visture	Lecture	quiz
Seventh	2	Modification of leaves	Modification of leaves	Lecture	Quiz
Eighth	2	phyllotaxy	phyllotaxy	Lecture	Quiz
Nineth	2	Flower,flower parts, calyx	Flower,flower parts,calyx	Lecture	quiz
Tenth	2	Corolla,shape,modification	Corolla,shape,modification	Lecture	Quiz
Eleventh	2	Aestivation,shape	Aestivation,shape	Lecture	Quiz
Twelfth	2	Bracts and stamens	Bracts and stamens	Lecture	quiz
Thirteen	2	Pistil shape	Pistil shape	Lecture	quiz
Fourteenth	2	placentation	placentation	Lecture	Quiz
Fifteenth	1	Exam			
Sixteenth	2	Position of ovary	Position of ovary	lecture	Quiz
Seventeenth	2	Nectaries glands	Nectaries glands	lecture	Quizzes
Eighteenth	2	inflorescences	inflorescences	Lecture	Quiz
Nineteenth	2	racemose	racemose	Lecture	Quizzes
Twentieth	2	cymose	cymose	Lecture	quiz
Twenty first	2	Fruits,types of fruits,simple fruits	Fruits,types of fruits,simple fruits	Lecture	Quiz
Twenty second	2	Aggregate fruits	Aggregate fruits	lecture	quiz
Twenty third	2	Seed,parts of seed	Seed,parts of seed	Lecture	Quiz
Twenty fourth	2	Practical applications	Problem solving	Problem solving	homework
Twenty fifth	2	Surface configuration	Surface configuration	lecture	Quiz
Twenty sixth	2	Floral formula	Floral formula	lecture	quiz
Twenty seventh	2	Floral diagram	Floral diagram	Lecture	Quiz
Twenty eighth	2	Training students on writing the floral formula and	Training students on writing the floral formula and drawing the floral diagram	lecture	Quiz

		drawing the floral diagram of plants of monocotyledons and dicotyledons families	of plants of monocotyledons and dicotyledons families		
Twenty nineth	2	Training students to use the key in classifying families of angiosperms and monocots,dicots	Training students to use the key in classifying families of angiosperms and monocots,dicots	Lecture	Quiz
Thirtieth	1	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, ... etc

12.Learning and Teaching Resources

Classification of seed plants	Youssef Mansour ALkateb , 2000
Plant taxonomy	Ali Hussein almoussawi ,1987
Taxonomy of angiosperms B.P.Pandey 2009	B.P.Pandey 2009
https://mawdoo3.com	https://mawdoo3.com

Course Description Form

1. Course Name: Biochemistry

2. Course Code: **EDBI24F205**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Presentation theory lecture , Classroom attendance

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

Total (60) / 4 Units

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

Name: Lecturer. Dr. Rana Talib Ibrahim
Email: altaee.rana1979@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Biochemistry And its branches and biomolecules like Carbohydrates, lipids, proteins, enzyme .....** • **Knowing of their vital role and their relationship To human health**

9. Teaching and Learning Strategies

Strategy	**Theoretical lecture, talk and discussions, problem solving, performing practical experiments, reports and homework**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2	4 =2×2	Knowing the importance of biochemistry, cell types and their component	The cell and its component	Lecture	Lecture, discussio With student
3+4	4=2×2	Knowing the properties of water and buffer solution	Water and buffer Solution	Lecture	Lecture, discussio With student, Quiz
5+6+7+8	8=4×2	Knowing types of Carbohydrates and its reactions	Carbohydra	Lecture	Lecture, discussio With student
9+10+ +11+12	8=4×2	Understanding lipids and its reactions	Lipids, classification a types	Lecture	Lecture, discussio With student

					Quiz
12+14+ 15+16	8=4×2	Amino acids and peptides	Amino Acid, classification, reaction, peptides	Lecture	Lecture, discussio With student
17+18+ 19+20	8=4×2	Proteins	Protein, solubility, Hydrolysis, Reactions	Lecture	Lecture, discussio With student Quiz
21+22 +23	6=3×2	Chromatography	Knowing the basic principle of Chromatography	Lecture	Lecture, discussio With student
24+25 26	6=3×2	Enzymes	Enzyme, Types, Enzyme nomenclature Factors affecting the rate of enzymatic reactions	Lecture	Lecture, discussio With student
27+28	4=2×2	Vitamins and coenzyme and its vital role and relationship to diseases	Vitamins and, coenzyme	Lecture	Lecture, discussio With student Quiz
29+30	4=2×2	Understanding the basic principles of nucleic acids	Nucleotides and nucleic acids	Lecture	Lecture, discussio With student
31	1	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)	**Introduction to biochemistry (2007). khawla Al-flaeyh**
Main references (sources)	**Lippincott`s biochemistry (2019) Richard Harvey & Denis Ferrier ., 5th.**
Recommended books and references (scientific journals, reports...)	**Sami El-Modifier (2002) principle of biochemistry**
Electronic References, Websites	**https://faculty.uobasrah.edu.iq**

Course Description Form

1. Course Name: Practical Biochemistry / Bachelor's

2. Course Code: **EDBI24F205**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Weekly - classroom attendance

6. Number of Credit Hours (Total) / Number of Units (Total) 90 hours / 3 Credit

60 hours/ 2 Credit

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

Name: Lecturer. Dr. Rana Talib Ibrahim / Email: altaee.rana1979@uomosul.edu.iq

, Assist.Prof. Dr. Mohammed Abd Elhady, lect. Israa Sahil Ahmed, lect. Kinda Masood Bilal, Assist.Lect. Aya Ihsan Rashan, Assist.Lect. Amal Moufak Salih

8. Course Objectives

Course Objectives	**1. Teaching students how to deal with the laboratory and chemical substances** **2. Teaching laboratory students how to write reports for practical experiment** **3. The student learns how to detect life compounds** **4. Estimating life cycles spectroscopically** **5. Distinguish between compounds and life molecules** **6. Enzymes and how to deal with them** **7. Estimation of enzymatic activity spectrophotometrically**

9. Teaching and Learning Strategies

Strategy	Following the attendance in the laboratory, where a short theoretical idea about the experiment is given, and then the practical part of the experiment is elaborated upon, where students are distributed into groups to conduct the experiment, draw results, and prepare laboratory reports including the name and date of the experiment, the theory of the experiment, the practical part, then the results and discussion.

1. Course structure

weeks	Hours	Required learning outcomes	Name of the unit/course or subject	Teaching method	evaluation method

1	2	With laboratory equipment and how to employ them and benefit from their capabilities in laboratory research, in addition to dealing with how to distinguish by colorimetric detection and discussing abnormal results with the teachers in the laboratory.	Spectrophotometric estimation	Lecture	Quizzes and monthly exams
2	2		Determination of vitamin C spectrophotometrically	Lecture	
3	2		Detection of sugars Monosaccharides Disaccharides Polysaccharides Follow up on starch decomposition	Lecture	
4	2			Lecture	
5,6	4			Lecture	
7,8	4		Fats Fat detection	Lecture	
9	2			Lecture	
10,11	4		Detection of proteins Detection of amino acids Precipitation of proteins Quantitative determination of proteins using the Biuret method	Lecture	
12	2			Lecture	
13	2			Lecture	
14,15	4			Lecture	
17و16	4		Enzymes Preparing a standard curve used to measure the activity of the invertase enzyme Factors affecting enzyme activity 1- Acid function 2- Temperature 3- Enzyme concentration 4- Concentration of the substrate	Lecture	
18,19	4			Lecture	
21و20	4			Lecture	
22	2			Lecture	
23	2			Lecture	
24	2		Exams, receiving and correcting reports, and preparing final grades	Lecture	
25	2			Lecture	

10.Course Evaluation

The grade is distributed out of 20 as follows: 4 grades for the mid-year exam / then 6 grades for the end-of-year exam / laboratory grade 10 grades, 5 of which are commitment, perseverance, and laboratory activity, 5 daily exams, weekly reports on a regular basis.

11.Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- A book of practical experiments in Arabic 2- Practical Bio and Clinical Chemistry 2019 In addition to some practical scientific publications
Recommended books and references (scient journals, reports...)	The most important requirements are the methodological book, lectures given in the laboratory, and conducting practical experiments
	While explaining or conducting the experiment, it is possible to link the results and practical procedures to daily life htpps://almerja.net.reading

Course Description Form

1. Course Name: Developmental psychology

2. Course Code: **EDBI24F208**

3. Semester / Year: 2023 - 2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: In-person - electronic class

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

   2 hours / 4 units

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

   Name: Asist. Ahmed Adeeb Qanbar Shehab
   Email: ahmed.adeeb@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Identify the basic concepts of developmental psychology.** • **Learn about the principles and laws of growth.** • **Identify the importance of adolescence childhood in human life.** • **Identify growth theories.**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussions, brainstormi problem solving, conducting practical experiments, reports and da assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	**2 hours**	**For the student to know the concepts of psychology, developmental psychology and its origins.**	**Introduction to psychology and developmental psychology.**	**Lecture and discussion**	**Quizzes**

Second	**2 hours**	**The student explains the laws and principles of growth and their importance.**	**Principles and laws of growth and the importance of growth.**	**Lecture and discussion**	**Quizzes**
Third	**2 hours**	**The student identifies the stages of human development.**	**Stages of human development (childhood).**	**Lecture and discussion**	**Quizzes**
Fourth	**2 hours**	**For the student to understand the importance and demands of adolescence in a person's life.**	**Adolescence: its definition, importance and stages.**	**Lecture and discussion**	**Quizzes**
Fifth	**2 hours**	**The student should know the stage of adulthood and the demands of growth in adulthood.**	**Adulthood and the stages and demands of growth in adulthood.**	**Lecture and discussion**	**Homework**
Sixth	**2 hours**	**The student should understand the role of influencing growth.**	**Factors affecting growth: First: genetic factors.**	**Lecture and discussion**	**Quizzes and Homework**
Seventh	**2 hours**	**The student should understand the influential role of environmental factors on growth.**	**Factors affecting growth: Second: Environmental factors.**	**Lecture and discussion And solve problems**	**Homework**
Eighth	**2 hours**	**The student should understand the role of the influencer of the glands on growth.**	**Factors affecting growth: Third: Glands.**	**Lecture and discussion**	**Quizzes**
Ninth	**2 hours**	**The student should understand the role of information collection methods in collecting information.**	**Means of collecting information (observation - interview - questionnaire - CV).**	**Lecture and brainstor ming**	**Quizzes**
Tenth	**2 hours**	**The student should distinguish between research methods in developmental psychology.**	**Research methods in developmental psychology (longitudinal - transverse - correlation - experimental).**	**Lecture and discussion**	**Quizzes and Homework**
Eleventh	**2 hours**	**The student should know the social and emotional development of the child.**	**Social-emotional development in childhood.**	**Lecture and discussion**	**Quizzes and Homework**
Twelve	**2 hours**	**The student should determine the child's mental and linguistic development.**	**Mental and linguistic development in the child.**	**Lecture, discussion and problem solving**	**Homework**

Thirteenth	**2 hours**	**The student should understand how the child's moral development develops.**	**Congenital development in the child.**	**Lecture**	**Quizzes and Homework**
Fourteenth	**2 hours**	**The student should understand the role of psychological development in the child and adolescent.**	**Psychological development in the student and adolescent.**	**Lecture, discussion, problem solving**	**Homework**
Fifteenth	**An hour and a half**		**Semester exam**		
Sixteenth	**2 hours**	**The student should understand the role of social institutions in the socialization of the child.**	**The role of social institutions in the socialization of the child (family - school).**	**Lecture and discussion**	**Quizzes and Homework**
Seventeenth	**2 hours**	**The student should understand the role of social institutions in the socialization of the child.**	**The role of social institutions in the socialization of the child (peers - media).**	**Lecture and discussion**	**Quizzes**
Eighteenth	**2 hours**	**The student should explain the role of social institutions in adolescence.**	**Adolescence, family and school.**	**Lecture and discussion**	**Quizzes and Homework.**
Nineteenth	**2 hours**	**The student should explain the role of social institutions in adolescence.**	**Adolescence, peers and the media.**	**Lecture and discussion**	**Quizzes**
Twentieth	**2 hours**	**The student should understand the importance of work in the life of the adolescent.**	**Adolescent and profession.**	**Lecture and discussion**	**Homework**
Twenty-first	**2 hours**	**The student should understand the importance of adolescent compatibility for work.**	**Teen compatibility for work.**	**Lecture and discussion**	**Quizzes**
Twenty-second	**2 hours**	**The student should distinguish between the attitudes and tendencies of adolescents.**	**Trends and tendencies in adolescents.**	**Lecture, discussion, problem solving**	**Homework**
Twenty-third	**2 hours**	**The student should identify the sources of acquisition of trends and tendencies.**	**Sources of acquisition of tendencies and trends.**	**Lecture, discussion**	**Quizzes**
Twenty-fourth	**2 hours**	**The student should clarify the factors affecting the attitudes and tendencies of**	**Factors affecting the attitudes and tendencies of adolescents.**	**Lecture, discussion, problem solving**	**Homework**

		adolescents.			
Twenty-fifth	**2 hours**	**The student should understand the reasons for academic delay in adolescents.**	**Academic delay in the adolescent.**	**Lecture, discussion**	**Quizzes**
Twenty-sixth	**2 hours**	**The student should understand the causes of aggressive behavior in the adolescent.**	**Aggressive behavior in a teenager.**	**Lecture, discussion, problem solving.**	**Homework**
Twenty-seventh	**2 hours**	**The student should understand the causes of adolescent delinquency.**	**Adolescent delinquency**	**Lecture, discussion**	**Quizzes**
Twenty-eighth	**2 hours**	**The student should understand how to congenital development in adolescents.**	**Congenital - cognitive - mental development**	**Lecture, discussion**	**Quizzes**
Twenty-ninth	**2 hours**	**The student should demonstrate the psychosocial development of the adolescent.**	**Psychosocial development**	**Lecture, discussion**	**Quizzes**
Thirtieth	**2 hours**		**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)	- Childhood and Adolescence Psychology, Al-Alu Jamal Hussein (1983) Al-Asimah - University Baghdad. - Evolutionary Psychology, Arifj, Sami (1993) Jord - Amman - Dar Majdalawi.
Main references (sources)	Evolutionary Psychology References.
Recommended books and references (scientific journals, reports...)	- Introduction to Developmental Psychology, Alwan, Fadia (2003) Cairo - Arab Book House Library. - The psychology of growth - Annabi, Han Abdel Hamid (2003). - Developmental Psychology - From Childho to Old Age - Parasite, Zainuddin Compliar (2004).
Electronic References, Websites	

Course Description Form

- Course Name:

Secondary education and educational administration

- Course Code:

EDB124F207

- Semester / Year:

The first and second semesters of the 2023-2024 academic year

- Description Preparation Date:

I/9/2023

- Available Attendance Forms:

In-person and electronic

- Number of Credit Hours (Total) / Number of Units (Total)

60/4

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

Name: Zeyad Bader Hamad
Email: dr.zeyadhamad78@uomosul.edu.iq

- Course Objectives

Course Objectives	**• The main goal of secondary education is to prepare learners to continue their educational attainment in any of the tertiary educatior fields, whether higher, vocational, or specialized education, or to work in The first levels in public or private jobs... • Developing educational values among students as future teachers. • Enabling young people who have completed primary school and entered secondary education to continue developing their personalit in all their physical, intellectual, moral and spiritual aspects by discovering their abilities, inclinations and guidance. • Developing their knowledge of the stage of forming a healthy personality, and the stage of self-building, in adolescence. • Students learn about the role of each member of the educational institution in the secondary education stage. • Students learn about ancient and modern management and supervision methods.**

- Teaching and Learning Strategies

Strategy	• Managing lectures in a way that shows the importance of time. • Group activities for which 10% of the grade is allocated. • Individual and group assignments that require the use of the library and the Internet. • Increasing the spirit of positive competition. • Reciprocal teaching.

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge and skill	Definition of secondary education	Electronic integrated i the lecture	a test
2	2	Knowledge and skill	High school goals	Electronic integrated the lecture	a test
3	2	Knowledge and skill	Organizing education at secondary level	Electronic integrated the lecture	a test
4	2	Knowledge and skill	Educational innovations secondary education	Electronic integrated the lecture	a test
5	2	Knowledge and skill	Educational innovations in Iraq	Electronic integrated the lecture	a test

6	2	Knowledge and skill	Characteristics of a secondary teacher	Electronic integrated the lecture	a test
7	2	Knowledge and skill	Some experiences of countries around the world in secondary education (America, Britain, France)	Electronic integrated the lecture	a test
8	2	Knowledge and skill	Management concept and development	Electronic integrated the lecture	a test
9	2	Knowledge and skill	Elements of educational administration	Electronic integrated the lecture	a test
10	2	Knowledge and skill	Centralization decentralization in educational administration	Electronic integrated the lecture	a test
11	2	Knowledge and skill	Advantages and advantages of the central educational system	Electronic integrated the lecture	a test
12	2	Knowledge and skill	Disadvantages of the central educational system	Electronic integrated the lecture	a test
13	2	Knowledge and skill	Advantages and advantages of the decentralized educational system	Electronic integrated the lecture	a test
14	2	Knowledge and skill	Factors affecting educational administration terms of centralization decentralization	Electronic integrated the lecture	a test
15	2	Knowledge and skill	The concept of school administration	Electronic integrated the lecture	a test
16	2	Knowledge and skill	Study management styles	Electronic integrated the lecture	a test
17	2	Knowledge and skill	School principal's duties	Electronic integrated the lecture	a test
18	2	Knowledge and skill	Educational administration tasks (administration functions)	Electronic integrated the lecture	a test
19	2	Knowledge and skill	Skills that a school principal must have	Electronic integrated the lecture	a test
20	2	Knowledge and skill	School administration goals characteristics	Electronic integrated the lecture	a test
21	2	Knowledge and skill	The role of classroom management in educational process	Electronic integrated the lecture	a test
22	2	Knowledge and skill	Parent-teacher councils and their objectives	Electronic integrated the lecture	a test
23	2	Knowledge and skill	The concept of educational supervision and its importance	Electronic integrated the lecture	a test
24	2	Knowledge and skill	Objectives of educatic supervision	Electronic integrated the lecture	a test
25	2	Knowledge and skill	Educational supervision jobs	Electronic integrated the lecture	a test
26	2	Knowledge and skill	Foundations of educational supervision	Electronic integrated the lecture	a test
27	2	Knowledge and skill	Types of educational supervision (corrective supervision, authoritarian	Electronic integrated the lecture	a test

			supervision, democratic oversight)		
28	2	Knowledge and skill	The development of the conc of educational supervision	Electronic integrated the lecture	a test
29	2	Knowledge and skill	Features of modern educatic supervision	Electronic integrated the lecture	a test
30	2	Knowledge and skill	Methods of educatic supervision Specifications selecting an educatic supervisor	Electronic integrated the lecture	a test

- Course Evaluation

25% half the year
5% daily exams
5% activity (report or lecture)
5% semester exam
60% end-of-year exam

- 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: Bio statistics

2. Course Code: EDBI24F206

3. Semester / Year: 2023 - 2024

4. Description Preparation Date: 1/ 9 / 2023

5. Available Attendance Forms: Laboratory , Classroom

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

1/2

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

Name: Farah abd ul Ghane

Email: Farah–abd-ul-Ghane@uomosul.edu.iq

8. Course Objectives

Course Objectives	**The course aims to introduce the student to the basic concepts and statistical laws in statistics in a descriptive a analytical manner, and how to apply these laws to reality interpreting the results of studies and research in all fields life,in addition to how to solve problems related to these studies and research.....**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	3	Random variables	ascriptive statistics, inferential statistics	Lecture	quizzes
Second	3	Characteristics of the collection process	Definition of descriptive and quantitative variabl	Lecture	quizzes
Third	3	Chapter II	the sample	Lecture	quizzes
Fourth	3	Data presentation methods	Tabular display of data	experiment	Quiz, report , homework
Fifth	3	1. Frequency distribution	In the case of classified and	Problem solving	Homework

			unclassified data		
Sixth	3	2. Relative frequency distribution	Create a percentage frequency distribution table	experiment	Quiz, report , homework
Seventh	3	3 Clustered frequency distribution	Ascending and descending frequency distribution	Problem solving	Homework
Eighth	3	Data presentation methods	Geometric display of data	experiment	Quiz, report , homework
Nineth	3	1. Chart bars	Display single data	Problem solving	Homework
Tenth	3	2. Graphical circuit	Display quantitative data	experiment	Quiz, report homework
Eleventh	3	Histogram	Display bar graphs	experiment	Quiz, report homework
Twelfth	3	Chapter III	Arithmetic mean - mode - median	Problem solving	Homework
Thirteen	3	Measures of central tendency 1- Arithmetic mean	In the case of classified and unclassified data	Lecture	Quiz, and homework
Fourteenth	3	2- Mode	In the case of classified and unclassified data	Problem solving	Homework
Fifteenth	3	3- median	In the case of classified and unclassified data	lecture	Quiz, report , homework
Sixteenth	3	Exam			
Seventeenth	3	Measures of dispersion	The concept of dispersion and the purpose of calculating it	lecture	Quizzes
Eighteenth	3	Frist: types of absolule dispersion Measures 1-Rangs	In the case of classified and unclassified data	Problem solving	Quiz, and homework
Nineteenth	3	2-Average deviation	In the case of classified and unclassified data	Lecture	Quizzes
Twentieth	3	3- Variance and standard deviation	In the case of classified and unclassified data	Problem solving	homework
Twenty first	3	Second: Measures of relative deviation	Coefficient of Variance	Lecture	Quiz
Twenty second	3	Standard score	How to calculate the Standard score	Problem solving	homework
Twenty third	3	Hypothesis testing	Basics of statistica Hypothesis	Lecture	Quiz
Twenty fourth	3	Testing the mean of random sample in a	Statistical Hypothesis testing	Problem solving	homework

		natural population 1-test Z	with drawing		
Twenty fifth	3	2- test T	Statistical Hypothesis testing with drawing	lecture	Quiz
Twenty sixth	3	3- test X^2	Statistical Hypothesis testing with drawing	Problem solving	homework
Twenty seventh	3	4- test for homogeneity of two variances	Statistical Hypothesis testing with drawing	Lecture	Quiz
Twenty eighth	3	Learn about the basic concepts of probability	Basics of probability	lecture	Quiz
Twenty nineth	3	probabilistic	Probability space	Lecture	Quiz
Thirtieth	3	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 Statistics . Written by: Dr. Mahmoud Al-Mashhadani, Amir Hanna
Main references (sources)	Introduction to statistics. Written by Dr. Humbled Mahmoud Al-Rawi
Recommended books and references (scientific journals, reports...)	1-AIIan G.Bluman , Elementary Statistics-A Stepby Step Approach 2-PRM S. MANN , INTRODUCTORY STATICS 3-Stephen Kokoska , introductory Statistics
Electronic References, Websites	https://muqdadedu.uodiyala.edu.

Course Description Form

1. Course Name: Computer

2. Course Code: EDBI24F209

3. Semester / Year: 2024-2023

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: presence in the lecture hall and laboratories

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

3 hours / 3 units

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

Name: Ass. Lec. Naam Salem Fadhil
Email: naamsalem@uomosul.edu.iq

8. Course Objectives

Course Objectives	**• Students learn about the computer and its application programs** **• To qualify and train students on the Al-Ward program to write dissertations and research in the future** **• Students are able to arrange PowerPoint slides and present their research or reports in them in the future** **• Learn to create electronic tables through Excel**

9. Teaching and Learning Strategies

Strategy	a . Definition of the course 1. Defining the concept of computer and its application programs 2. The student's knowledge of the Windows operating system 3. The student's knowledge and application of Word, PowerPoint, a Excel programs B - Subject-specific skills 1. Providing students with how to use a computer. 2. Providing students with how to use the Windows operating syste 3. Providing students with how to use Word, PowerPoint, and Ex programs

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2-1	**4**	The student becomes familiar with the topics described in	Learn applied computer programs	attendance	Exam
6-3	**8**		Learn to operate Windows	attendance	Exam
10-7	**8**		Learn Word	attendance	Exam

16-11	**12**	the name of the unit	Learn Word	attendance	Exam
22-17	**12**		Learn Excel	attendance	Exam
24-23	**4**		Learn Excel	attendance	Exam
28-25	**8**		Learn Powerpoint	attendance	Exam
30-29	**4**		Learn Powerpoint	attendance	Exam

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	**دروس - في مبادئ الحاسب الآلي تاليف د. احمد البراوي 2013.** **تعلّم - مايكروسفت وورد أعداد الدكتور خالد فرهود 2014.**
Electronic References, Websites	

Course Description Form

1. Course Name: Crimes of Baath Regime

2. Course Code: **EDBI24F211**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture , Classroom

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

2 hrs/ 2 units

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

Name: Assist. Lec. Hussein Younis Abdulla
Email: husseinalazw@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **The curriculum aims that the student will be familiar with conce of crimes and human rights violations that occurred in Iraq** • **Presenting a balanced scientific comprehension for law basics in simple understandable way for most of subjects and syllables the are important for the student that are in undergraduate specialties in all colleges**

9. Teaching and Learning Strategies

Strategy	theoretical lecture , talk and discussions, reports and quizzes and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Weekly assessment of student /discussions	Chapter 1: Concept of crime and types	Lecture	Quizzes and homework
Second	2	Weekly assessment of student /discussions	Section 1: definition of crime	Lecture	Quizzes and homework
Third	2	Weekly assessment of student /discussions	Linguistic definition of crime	Lecture	Quizzes and homework

Fourth	2	Weekly assessment of student /discussions	Idiomatic definition of crime	Lecture	Quizzes and homework
Fifth	2	Weekly assessment of student /discussions	Divisions of crimes	Lecture	Quizzes and homework
Sixth	2	Weekly assessment of student /discussions	Crimes according to Iraq Supreme Criminal Tribunal 2005	Lecture	Quizzes and homework
Seventh	2	Weekly assessment of student /discussions	Section 2: International laws	Lecture	Quizzes and homework
Eighth	2	Weekly assessment of student /discussions	Types of international laws	Lecture	Quizzes and homework
Nineth	2	Weekly assessment of student /discussions	Decisions issued from Iraq Supreme Criminal Tribunal	Lecture	Quizzes and homework
Tenth	2	Weekly assessment of student /discussions	Crimes and issues seen by Iraq Supreme Criminal Tribunal	Lecture	Quizzes and homework
Eleventh	2	Weekly assessment of student /discussions	Chapter 2: Psychological and social crimes and their effect on Iraq	Lecture	Quizzes and homework
Twelfth	2	Weekly assessment of student /discussions	First: Psychological crimes	Lecture	Quizzes and homework
Thirteen	2	Weekly assessment of student /discussions	Mechanisms and methods of Psychological crimes	Lecture	Quizzes and homework
Fourteenth	2	Weekly assessment of student /discussions	Effects of Psychological crimes	Lecture	Quizzes and homework
Fifteenth	2	Weekly assessment of student /discussions	Second: social crimes	Lecture	Quizzes and homework
Sixteenth	2	Weekly assessment of student /discussions	Militarization of society	Lecture	Quizzes and homework
Seventeenth	2	Weekly assessment of student /discussions	Monopoly of religion	Lecture	Quizzes and homework
Eighteenth	2	Weekly assessment of student /discussions	Iraqi laws violations	Lecture	Quizzes and homework

Nineteenth	2	Weekly assessment of student /discussions	Pictures of human rights violations and regime	Lecture	Quizzes and homework
Twentieth	2	Weekly assessment of student /discussions	Military and political Executions decisions	Lecture	Quizzes and homework
Twenty first	2	Weekly assessment of student /discussions	Places of prisons, arresting and detentions	Lecture	Quizzes and homework
Twenty second	2	Weekly assessment of student /discussions	Chapter 3: Ecological crimes and effects on Iraq	Lecture	Quizzes and homework
Twenty third	2	Weekly assessment of student /discussions	War pollution , radiation and mine explosions	Lecture	Quizzes and homework
Twenty fourth	2	Weekly assessment of student /discussions	Burned land policy	Lecture	Quizzes and homework
Twenty fifth	2	Weekly assessment of student /discussions	Dredging orchards, trees and cultivars	Lecture	Quizzes and homework
Twenty sixth	2	Weekly assessment of student /discussions	Chapter 4: Mass craves crimes	Lecture	Quizzes and homework
Twenty seventh	2	Weekly assessment of student /discussions	Events of 1963 and relationships with mass craves	Lecture	Quizzes and homework
Twenty eighth	2	Weekly assessment of student /discussions	Events and wars in Iraq from 1979 to 2003 and relationships with mass craves	Lecture	Quizzes and homework
Twenty nineth	2	Weekly assessment of student /discussions	Mass craves sites due to events and coups from 1963-1979	Lecture	Quizzes and homework
Thirtieth	2	Weekly assessment student /discussions	Mass craves sites due to events and coups from 1980-2003	Lecture	Quizzes a homework
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)	Textbook (Baath regime crimes) by ministry committee 2023
Main references (sources)	Al-Shuhaddaa Foundation archives Poltical prisoners foundation archive
Recommended books and references (scientific journals, reports...)	Al-Fadhel M. Crimes on state security. 1978 Abdul Malak J. Criminal encyclopedia .1990
Electronic References, Websites	New references, Articles and books from Web

Course Description Form

1. Course Name: English language

2. Course Code: **EDBI24F210**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: email , Classroom

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

1/2

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

Name: Assistant Prof. Dr Bushra Dalli Hamad Shlla
Email: bdhs56@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of English language** • **Knowing the practical applications of English language**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	1	The history of English language	Understanding basic principles	Lecture	quizzes
Second	1	Professional academic Email	Understanding basi principles	Lecture	quizzes, homewo and using ema
Third	1	Definition of bacteria	Understandin basic princip	Lecture	quizzes, homewo and using ema
Fourth	1	*Streptococcus Pneumoniae*	Understanding basi principles	Lecture	quizzes, homework and using email
Fifth	1	Speaking	Understanding basic principles	Lecture	Homework
Sixth	1	Human muscles	Understanding basic principles	Lecture	quizzes, homework and using email

Seventh	1	Grammar	Understanding basic principles	Lecture	quizzes, homework and using email
Eighth	1	Prepositions	Understanding basic principles	Lecture	quizzes, homework and using email
Nineth	1	Listening	Understanding basic principles	Lecture	quizzes, homework and using email
Tenth	1	General writing	Understanding basic principles	Lecture	quizzes, homework a using email
Eleventh	1	Academic writing	Understanding b principles	Lecture	quizzes, homework a using email
Twelfth	1	paraphrase	Understanding basic principles	Lecture	quizzes, homework and using email
Thirteen	1	Writing essay	Understanding basic principles	ecture	quizzes, homework and using email
Fourteenth	1	General review of the course	Understanding basic principles	Lecture	General discussion
Fifteenth		mid exam			
Sixteenth	1	Writing article	Understanding basic principles	Lecture	quizzes, homework and using email
Seventeenth	1	IELTS	Understanding basic principles	Lecture	homework
Eighteenth	1	TOEFL	Understanding basic principles	Lecture	quizzes, homework and using email
Nineteenth	1	Introduction in to botany	Understanding basic principles	Lecture	Quiz
Twentieth	1	Plant classification	Understanding basic principles	Lecture	homework
Twenty first	1	Introduction in to viruses	Understanding basic principles	Lecture	Quiz
Twenty second	1	Coronaviruses	Understanding basic principles	Lecture	homework
Twenty third	1	English travel vocabulary	Understanding basic principles	Lecture	Quiz
Twenty fourth	1	Infection	Understanding basic principles	Lecture	homework

Twenty fifth	1	The role of bacteria in pathogenicity	Understanding basic principles	Lecture	Quiz
Twenty sixth	1	The vaccine	Understanding basic principles	Lecture	homework
Twenty seventh	1	Writing manuscript	Understanding basic principles	Lecture	Quiz
Twenty eighth	1	Writing abstract	Understanding basic principles	Lecture	Quiz
Twenty nineth	1	General review of the course	Understanding basic principles	Lecture	General discussion
Thirtieth		final exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Bruce, S. and B. Rafoth (2009). ESL Writers - A Guide for Writing Center Tutors, 2nd Edition. Heinemann Publishing.
Main references (sources)	Brown, D. (2014). "Language, Culture and Identity" in Principles of Language Learning and Teaching, (6th Ed). Pearson.
Recommended books and references (scientific journals, reports...)	Brown, D. (2014). "Language, Culture and Identity" in Principles of Language Learning and Teaching, (6th Ed). Pearson
Electronic References, Websites	https://talkpal.ai/?utm_term /

Course Description Form

1. Course Name: Theoretical comparative anatomy of chordates

2. Course Code: **EDBI24F303**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/4

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

Name: Prof. Dr. Ameer M. Taha Email: amhamdany@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Comparative Anatomy** • **Knowing the classification of Chordates and Vertebrates**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Learn about the basic concepts of comparative anatomy	Fundamentals of chordate and comparative anatomy	Lecture	quizzes
Second	2	Identify chordates	Protochordates	Lecture	quizzes
Third	2	Learn about the classification of vertebrates	Classification aquatic vertebrat	Lecture	quizzes
Fourth	2	Learn about the classification of vertebrates	Classification of Reptiles and birds	experiment	quizzes
Fifth	2	Learn about the classification of vertebrates	Classification of Mammals	Problem solving	quizzes

Sixth	2	Learn about the comparative anatomy of the skin	Skin in the fishes and amphibians	experiment	quizzes
Seventh	2	Learn about the comparative anatomy of the skin	Skin in the Reptiles and birds	Problem solving	quizzes
Eighth	2	Learn about the comparative anatomy of the skin	Skin in the Mammals	experiment	quizzes
Nineth	2	Learn about the comparative anatomy of the skeletal system	Skull in vertebrates	Problem solving	quizzes
Tenth	2	Learn about the comparative anatomy of the skeletal system	vertebral column in vertebrates	experiment	quizzes
Eleventh	2	Learn about comparative anat of the skeletal syst	The upper limbs vertebrates	experiment	quizzes
Twelfth	2	Learn about the comparative anatomy of the skeletal system	Lower limbs in vertebrates	Problem solving	quizzes
Thirteen	2	Learn about the comparative anatomy of the muscular system	Muscular system in fish and amphipods	Lecture	quizzes
Fourteenth	2	Learn about the comparative anatomy of the muscular system	The muscular system in amniotes	Problem solving	quizzes
Fifteenth	2	Learn ab the compara anatomy the digestive system	Comparativ anatomy of t mouth in vertebrate	lecture	quizzes
Sixteenth	2	Learn about the comparative anatomy of the digestive system	Comparative anatomy of the esophagus and stomach vertebrates	lecture	quizzes
Seventeenth	2	Learn about the comparative anatomy of the digestive system	Comparative anatomy of the intestine in vertebrates	lecture	quizzes
Eighteenth	2	Learn about the comparative anatomy of the digestive system	Comparative anatomy of the digestion glands vertebrates	Problem solving	quizzes
Nineteenth	2	Learn about the comparative anatomy of the	Comparative anatomy of the	Lecture	quizzes

		respiratory system	gills vertebrates		
Twentieth	2	Learn about the comparative anatomy of the respiratory system	Comparative anatomy of the lung in amphibians and reptiles	Problem solving	quizzes
Twenty first	2	Learn about the comparative anatomy of the respiratory system	Comparative anatomy of the lung in birds and mammals	Lecture	quizzes
Twenty second	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the heart in vertebrates	Problem solving	Quizzes and Discussions with students
Twenty thir	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the arteries in vertebrates	Lecture	Quizzes and Discussions with students
Twenty fourth	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the venues in vertebrates	Problem solving	Quizzes and Discussions with students
Twenty fifth	2	Learn about the comparative anatomy of the urinary system	Comparative anatomy of the urinary system in lower vertebrates	lecture	Quizzes and Discussions with students
Twenty sixth	2	Learn about the comparative anatomy of the urinary system	Comparative anatomy of the urinary system in upper vertebrates	Problem solving	Quizzes and Discussions with students
Twenty seventh	2	Learn about the comparative anatomy of the congenital system	Comparative anatomy of the congenital system in lower vertebrates	Lecture	Quizzes and Discussions with students
Twenty eighth	2	Learn about the comparative anatomy of the congenital system	Comparative anatomy of the congenital system in upper vertebrates	lecture	Quizzes and Discussions with students
Twenty nineth	2	Learn about the comparative anatomy of the nervous system	Comparative anatomy of the nervous system in lower vertebrates	Lecture	Quizzes and Discussions with students
Thirtieth	2	Learn about the comparative anatomy of the nervous system	Comparative anatomy of nervous syst in up vertebrates	Lecture	Quizzes a Discussions w 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 any)	Comparative anatomy of vertebrates . 1985. Salah Al-Deen Al- Noory .Ibn alathir Publication house
Main references (sources)	Vertebrates, Comparative Anatomy, Function, Evolution . 2016. Mc Graw Hill Higher Education, 8ed , U.S.A.
Recommended books and references (scientific journals, reports...)	Comparative anatomy of vertebrates .2012. Mona Farid Abd Al- Rahman, Alexandria Library.
Electronic References, Websites	www.britannica.com/science/comparative-anatomy

Course Description Form

1. Course Name: Practical comparative anatomy of chordates

2. Course Code: **EDBI24F303**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/4

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

Name: Prof. Dr. Ameer M. Taha Email: amhamdany@uomosul.edu.iq
Dr. Mohammed Y. Ahmed dr.mohammedyahmed@uomosul.edu.iq
Dr.Sanabel Al-Thanoon sanbel.althanoon@uomosul.edu.iq
Dr. Sheema H. Mohammed
Mr. Bashar R. Karem Bashar.karem@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Comparative Anatomy** • **Knowing the classification of Chordates and Vertebrates**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Learn about the basic concepts of comparative anatomy	Fundamentals of chordate and comparative anatomy	Lecture	Quizzes, dissection mode slideshows
Second	2	Identify chordates	Protochordates	Lecture	Quizzes, dissection mode slideshows
Third	2	Learn about the classification of vertebrates	Classification aquatic vertebrat	Lecture	Quizzes, dissection mode slideshows

Fourth	2	Learn about the classification of vertebrates	Classification of Reptiles and birds	experiment	Quizzes, dissection models, slideshows
Fifth	2	Learn about the classification of vertebrates	Classification of Mammals	Problem solving	Quizzes, dissection models, slideshows
Sixth	2	Learn about the comparative anatomy of the skin	Skin in the fishes and amphibians	experiment	Quizzes, dissection models, slideshows
Seventh	2	Learn about the comparative anatomy of the skin	Skin in the Reptiles and birds	Problem solving	Quizzes, dissection models, slideshows
Eighth	2	Learn about the comparative anatomy of the skin	Skin in the Mammals	experiment	Quizzes, dissection models, slideshows
Nineth	2	Learn about the comparative anatomy of the skeletal system	Skull in vertebrates	Problem solving	Quizzes, dissection models, slideshows
Tenth	2	Learn about the comparative anatomy of the skeletal system	vertebral column in vertebrates	experiment	Quizzes, dissection mod slideshows
Eleventh	2	Learn about comparative anat of the skeletal syst	The upper limbs vertebrates	experiment	Quizzes, dissection mod slideshows
Twelfth	2	Learn about the comparative anatomy of the skeletal system	Lower limbs in vertebrates	Problem solving	Quizzes, dissection models, slideshows
Thirteen	2	Learn about the comparative anatomy of the muscular system	Muscular system in fish and amphipods	Lecture	Quizzes, dissection models, slideshows
Fourteenth	2	Learn about the comparative anatomy of the muscular system	The muscular system in amniotes	Problem solving	Quizzes, dissection models, slideshows
Fifteenth	2	Learn ab the compara anatomy the digestive system	Comparativ anatomy of t mouth in vertebrate	lecture	Quizzes, dissect models, slidesho
Sixteenth	2	Learn about the comparative anatomy of the digestive system	Comparative anatomy of the esophagus and stomach vertebrates	lecture	Quizzes, dissection models, slideshows
Seventeenth	2	Learn about the comparative anatomy of the digestive system	Comparative anatomy of the intestine in vertebrates	lecture	Quizzes, dissection mode slideshows
Eighteenth	2	Learn about the comparative	Comparative	Problem	Quizzes, dissection

		anatomy of the digestive system	anatomy of the digestion glands vertebrates	solving	models, slideshows
Nineteenth	2	Learn about the comparative anatomy of the respiratory system	Comparative anatomy of the gills vertebrates	Lecture	Quizzes, dissection models, slideshows
Twentieth	2	Learn about the comparative anatomy of the respiratory system	Comparative anatomy of the lung in amphibians and reptiles	Problem solving	Quizzes, dissection models, slideshows
Twenty first	2	Learn about the comparative anatomy of the respiratory system	Comparative anatomy of the lung in birds and mammals	Lecture	Quizzes, dissection models, slideshows
Twenty second	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the heart in vertebrates	Problem solving	Quizzes, dissection models, slideshows
Twenty thir	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the arteries in vertebrates	Lecture	Quizzes, dissection models, slideshows
Twenty fourth	2	Learn about the comparative anatomy of the Circulatory system	Comparative anatomy of the venues in vertebrates	Problem solving	Quizzes, dissection models, slideshows
Twenty fifth	2	Learn about the comparative anatomy of the urinary system	Comparative anatomy of the urinary system in lower vertebrates	lecture	Quizzes, dissection models, slideshows
Twenty sixth	2	Learn about the comparative anatomy of the urinary system	Comparative anatomy of the urinary system in upper vertebrates	Problem solving	Quizzes, dissection models, slideshows
Twenty seventh	2	Learn about the comparative anatomy of the congenital system	Comparative anatomy of the congenital system in lower vertebrates	Lecture	Quizzes, dissection models, slideshows
Twenty eighth	2	Learn about the comparative anatomy of the congenital system	Comparative anatomy of the congenital system in upper vertebrates	lecture	Quizzes, dissection models, slideshows
Twenty nineth	2	Learn about the comparative anatomy of the nervous system	Comparative anatomy of the nervous system in lower vertebrates	Lecture	Quizzes, dissection models, slideshows

Thirtieth	2	Learn about the comparative anatomy of the nervous system	Comparative anatomy of nervous syst in up vertebrates	Lecture	Quizzes, dissect models, slidesho

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 any)	Comparative anatomy of vertebrates . 1985. Salah Al-Deen Al- Noory .Ibn alathir Publication house
Main references (sources)	Vertebrates, Comparative Anatomy, Function, Evolution . 2016. Mc Graw Hill Higher Education, 8ed , U.S.A.
Recommended books and references (scientific journals, reports...)	Comparative anatomy of vertebrates .2012. Mona Farid Abd Al- Rahman, Alexandria Library.
Electronic References, Websites	www.britannica.com/science/comparative-anatomy

Course Description Form

1. Course Name: Phycology

2. Course Code: EDBI24F302

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: class / Classroom

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

4/6

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

Name: Mohammed Saeed Faisal. Email: dr.mohmad881@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of algae** • **Knowing algal classification**

9. Teaching and Learning Strategies

Strategy	Lecture, Conversation and discussions , practical experiments ,reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Basic concepts	Introduction to phycology	lecture	Quiz
2	2	Basic concepts	The importance of algae	lecture	Quiz
3	2	Basic concepts	Location of algae in the plant kingdom	lecture	Quiz
4	2	Basic concepts	Basics of algal classification	lecture	Quiz
5	2	Classification and characters	Cyanophyta division	lecture	Quiz
6	2	Classification and characters	Examples of cyanophyta division	lecture	Quiz

7	2	Classification and characters	Chlorophyta division	lecture	Quiz
8	2	Classification and characters	Examples of chlorophyta division	lecture	Quiz
9	2	Classification and characters	Charophyta division	lecture	Quiz
10	2	Classification and characters	Examples of Charophyta division	lecture	Quiz
11	2	Classification and characters	Chrysophyta division	lecture	Quiz
12	2	Classification and characters	Examples of Chrysophyta division	lecture	Quiz
13	2	Classification and characters	Euglenophyta division	lecture	Quiz
14	2	Classification and characters	Xanthophyta division	lecture	Quiz
15	2	Classification and characters	Pyrophyta division	lecture	Quiz
16	2	Classification and characters	Phaeophyta division	lecture	Quiz
17	2	Classification and characters	phaeophyta (Isogenerate)	lecture	Quiz
18	2	Classification and characters	Phaeophyta (Heterogeneratae)	lecture	Quiz
19	2	Classification and characters	Phaeophyta (Cycosporae)	lecture	Quiz
20	2	Classification and characters	Rhodophyta Division	lecture	Quiz
21	2	Classification and characters	Examples of Rhodophyta Division	lecture	Quiz
22	2	Classification and characters	Introduction to archaegonatae	lecture	Quiz
23	2	Classification and characters	Archegonate divisions	lecture	Quiz
24	2	Major differences	Comparison between archegonate and algae	lecture	Quiz
25	2	Major differences	Comparison between archegonate and flowering plants	lecture	Quiz
26	2	Bryophyta (Hepaticae)	Bryophyta (Hepaticae)	lecture	Quiz
27	2	General characters	Bryophyta (Anthocerotae)	lecture	Quiz
28	2	General characters	Bryophyta (Musci)	lecture	Quiz
29	2	General characters	Features of pteridophyta	lecture	Quiz
30	2	Classification	Pteridophyta classification	lecture	Quiz

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)	Introduction of algae Bald and Wynne. 1985
Main references (sources)	Phycology Alsaady H. and Suliman N. A. 2006
Recommended books and references (scientific journals, reports...)	Practical agae Manual , Dr. Mohammed Basheer Ismael , Dr. Yousef Jabbar Isamael, Mira Usama Al-Katib
Electronic References, Websites	https://www.algaebase.org/

Course Description Form

1. Course Name: Practical Algae and Archegoniates

2. Course Code: **EDBI24F302**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

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8. Course Objectives

Course Objectives	**Knowing the basic principles of algae Archegoniates.** **Learn about the division, varieties and types of algae Archegoniates**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Understanding basic principles	Introduction to phycology	Lecture	quizzes

Second	2	Understanding basic principles	Definition of algae a their fields	Lecture	quizzes
Third	2	Understanding basic principles	Algae spec and th importance	experiment	quizzes
Fourth	2	Understanding basic principles	Algae classificatio bases	experiment	Quiz, report , homework
Fifth	2	Practical application of law	Algae Classification Site and Scientific nomenclature	Problem solving	Homework
Sixth	2	Understanding basic principles	Using a microscope to inspect temporary water slides	experiment	Quiz, report , homework
Seventh	2	Practical application of law	Algae diagnosis	Problem solving	Homework
Eighth	2	Understanding basic principles	Division of Blue Green Algae *Chroococcales*	experiment	Quiz, report , homework
Nineth	2	Recognize a microorganism	Division Blue Green Algae *Oscillatoriales*	Problem solving	Homework
Tenth	2	Recognize a microorganism	Division of Green Algae	experiment	Quiz, report homework
Eleventh	2	Recognize microorganism	Order of Volvocale	experiment	Quiz, report homework
Twelfth	2	Recognize a microorganism	Order of Ulotrichales	experiment	Homework
Thirteen	2	Recognize a microorganism	Order of Chlorococcales	experiment	Quiz, and homework
Fourteenth	2	Practical applications	Screening of films on the previous three orders	Problem solving	Homework
Fifteenth	2	Recognize a microorganism	Order of Chladophorales	experiment	Homework
Sixteenth	2	Recognize a microorganism	Order of Zygnematales	experiment	Quiz, report , homework
Seventeenth	2	Recognize a microorganism	Order of Charales	experiment	Quizzes
Eighteenth	2	Practical applications	Screening of films on the previous three orders	Problem solving	homework
Nineteenth	2	Understanding basic principles	Euglenophyceae	experiment	homework
Twentieth	2	Understanding basic principles	Pyrrophycophyta	experiment	homework
Twenty first	2	Understanding basic principles	Chrysophyceae	experiment	homework
Twenty	2	Understanding basic	Xanthophyta	experiment	homework

second		principles			
Twenty third	2	Practical applications	Screening of films about the previous three algae sections	Problem solving	homework
Twenty four	2	Understanding basic principles	Bacillariophyceae	experiment	Quiz
Twenty fifth	2	Understanding basic principles And Recognize a microorganism	Phaeophyceae Isogenerater Heterogenerater Cyclosporae	experiment	Quiz
Twenty sixth	2	Understanding basic principles And Recognize a microorganism	Rhodophyta	experiment	homework
Twenty seventh	2	Understanding basic principles And Recognize a microorganism	Archegoniate Bryophyte/ *Riccia Marcantia*	experiment	Quiz
Twenty eighth	2	Understanding basic principles And Recognize a microorganism	Archegoniate Bryophyte/ *Anthoceros Funaria*	experiment	Quiz
Twenty nineth	2	Understanding basic principles And Recognize a microorganism	Archegoniate Pteridophyta/ Adiantum Equisetum Lycopodium	experiment	Quiz
Thirtieth	1	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- Classification of Floral Plants – Yousef alkatib- the Writer -1990-Systematic 2- Practical algae and archigoniates - d. Mohammed Bashir Ismail (d. Youssef Jabbar Ismail/m. Mra Asma Al-Kaibi - 2006-Section Methodology
Main references (sources)	Algae and Arquicula 1991. Ibrahim Khader Moulud, Nidal Idriss Suleiman and Ibrahim Tawfiq al-Basalem/Ibn al-Ether Printing & Publishing dar/Mosul University
Recommended books and references	Botany-Algae/Vashishta et al.2012

(scientific journals, reports...)	Microalgae-Biotechnologyand Microbiology/E. W. Becker2008
Electronic References, Websites	

1. Course Name: Mycology

2. Course Code: **EDBI24F305**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name Prof. Dr. Shimal Yonis Abdulhadi
Email: shimalyounis2018@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of fungi** • **Knowing the classification of fungi**

9. Teaching and Learning Strategies

Strategy	theoretical lecture , talk and discussions, problem solving , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Knowledge and skill	Introduction of fungi	Lecture, Black board, presentationsie	Oral quistions
Second	2	Knowledge and skill	General characteristics of fungi	Lecture,	Quizzes Oral quistions,
Third	2	Knowledge and skill	Different ways life in fungi	Posters, presentations	quizzes
Fourth	2	Understanding reproduction of fungi	Reproduction in fungi	Lecture,	Quiz, report , homework
Fifth	2	Knowledge and skill	The importance of fungi and their ecological relationships	Black board, presentationsie	Quiz, oral questions
Sixth	2	Understanding the basic of	(1 Kingdom: Protista Division: Myxomycota	Lecture,	Quiz, oral questions

		classification	Class: Myxomycetes		
Seventh	2	Knowledge and skill	Phylum: Plasmodiophoromycetes	Lecture, presentations	Quiz, oral questions
Eighth	2	Knowledge and skill	2) Kingdum: Straminopilia	Lecture, presentations	Quiz, oral questions
Nineth	2	Knowledge and skill	Order: Saprolegniales	Lecture, presentations	Quiz, oral questions
Tenth	2	Knowledge and skill	1_ Family: Pythiaceae G: Pythium و Phytophthora	Lecture,	Quiz, oral questior
Eleventh	2	Knowledge a skill	2-Family: Peronosporaceae Plasopara viticola و -3Family: Albuginaceae G: Albugo candida	Lecture,	Quiz, oral questio
Twelfth	2	Knowledge and skill	3)Kingdom: Fungi Phylum: Chytridiomycota G: Synchytrium endobioticum	Posters, presentations	Quiz, oral questions
Thirteen	2	Knowledge and skill	Phylum: Zygomycota Class: Zygomycetes 1-Order: Mucorales 1-Family: Mucoraceae	ecture, presentatio	Quiz, oral questions
Fourteenth	2	Knowledge and skill	2_ family: Endogonaceae G: Endogon و Glomus 3_Family: Pilobolaceae G: Pilobolus	Lecture, presentations	Quiz, oral questions
Fifteenth	1	Knowle and skil	2)Order: Entomophthorales G: Entomophthora musc	Lecture, presentati	Quiz, o questions
Sixteenth	2	Knowledge and skill	Phylum: Ascomycota	Lecture, presentations	Quiz, oral questions
Seventeenth	2	Knowledge and skill	1-Subphylum: Saccharomycotina Class: Saccharomycetes	Lecture,	Quiz, oral questio
Eighteenth	2	Knowledge and skill	**2-Subphylum: Taphrinomycotina** **1-Class: Schizosaccharomycetes** **Order: Schizosaccharales** **G: Schizosaccharomyces**	**Lecture,**	**Quiz, oral questions**
Nineteenth	2	Knowledge and skill	**2-Class: Taphrinomycetes**	**Posters, presentations**	Quiz, oral questions
Twentieth	2	Knowledge and skill	**Subphylum: Pezizomycotina** **Class: Leotiomycetes** **Order: Erysiphales**	**Lecture, presentations**	Quiz, oral questions
Twenty first	2	Knowledge and skill	2_Order: Helotiales Family: Sclerotiniaceae G: Sclerotina fructicola	Posters, presentations	Quiz, oral questions
Twenty second	2	Knowledge and skill	Class: Eurotiomycetes Order: Eurotiales	Lecture,	Quiz, oral questions
Twenty thir	2	Knowledge and skill	Class: Sordariomycetes 1-Order: Hypocreales G: Claviceps purpurea 2-Order: Sordariales	Posters, presentations	Quiz, oral questions

			Class: Dothidiomycetes Order: Pleosporales G: Venturia inqualis		
Twenty fourth	2	Knowledge and skill	Class: Pezizomycetes Order: Pezizales	Lecture, presentations,	Quiz, oral questions
Twenty fifth	2	Knowledge and skill	Phylum: Basidiomycota Class: Teliomycetes Order: Uredinales G:Puccinia graminis	Lecture, presentations	Quiz, oral questions
Twenty sixth	2	Knowledge and skill	Order: Ustilaginales -1family: Ustilaginaceae e.g: Ustilago nuda -2family: Tilletiaceae e.g: Tilletia caries	Lecture, presentations	Quiz, oral questions
Twenty seventh	2	Knowledge and skill	Class: Hymenomycetes Order: Agaricales Order: Polyporales Polyporus و Hydnum	Lecture, Posters, presentations	Quiz, oral questions
Twenty eighth	2	Knowledge and skill	Phylum: Deuteromycota Class: Coelomycetes Order: Spheropsidales e.g: Septoria	Lecture,	Quiz, oral questions
Twenty nineth	2	Knowledge and skill	Mycorhiza	Lecture, Posters, presentations	Quiz, oral questions
Thirtieth	1	Knowled and skill	lichens	Lecture,	Quiz, o questions

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.... etc

12.Learning and Teaching Resources

Required textbooks (curricular books, any)	The Fungi. Edited by Dr. Talib O.Al-Khesraji –First print-2012.
Main references (sources)	Introduction to Fungi / Webster and Weber, 3ed ed., 2007 ,Cambridge University Press
Recommended books and references (scientific journals, reports...)	Introductory mycology . 3d ed. 1979.
Electronic References, Websites	https://www.davidmoore.org.uk

Course Description Form

1. Course Name: Practical Mycology

2. Course Code: **EDBI24F305**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Lecturer Dr. Rafea Qasim Mohammed
Email: dr.rafeaqm@uomosul.edu.iq
Name: Lecturer: Mohammed Zaghlool Saeed
Email: mohammed72@uomosul.edu.iq
Name: Lecturer. Dr. Zena Wajeeh Aljaer
Email: dr.zena.algader@uomosul.edu.iq
Name: Lecturer. Dr. Noor Aamer Mohammed Ali
Email: noorameeralaubidi@uomosul.edu.iq
Name: Assistant Lecturer: Maha Falah Ramzy
Email: maha.falah@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Preparing fungal cultures. • Identification of the methods of isolating and preserving pure cultures. • Identification of the characteristics of typical types of fungi. • Studying the slides, pictures, and typical samples from different fungal sections**.**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
First	2	Students' comprehension of sterilization topic	Sterilization, equipments and materials used in mycology laboratory	Lecture	homework
Second	2	Students' comprehension of cultures and their	Culture, their types and methods of preparing	Lecture	Quiz , homework

		preparing method			
Third	2	Students' comprehension of isolation methods	Isolating fungi from different sources	Lecture	Quiz , homework
Fourth	2	Students' comprehension about the method of examination and the types of fungal cultures	Study and examination of different species of fungi in fungal cultures that were isolated in the previous laboratory	Lecture	Quiz , homework
Fifth	2	The student learns about the preservation methods	Preservation methods of fungi	Lecture	Quiz , homework
Sixth	2	Students' comprehension of structure, function, and classification	Phylum : Myxomycota	Lecture, pictures, slides	Quiz , homework
Seventh	2	Students' comprehension of structure, function, and classification	Phylum : Plasmodiophoromycota	Lecture, pictures, slides	Quiz , homework
Eighth	2	Students' comprehension of structure, function, and classification	Class : Oomycetes Order : Saprolegniales	Lecture, pictures, slides	Quiz , homework
Nineth	2	Students' comprehension of structure, function, and classification	Class : Oomycetes Family : Pythiaceae	Lecture, pictures, slides	Quiz , homework
Tenth	2	Students' comprehension of structure, function, and classification	Class : Oomycetes Family: Peronosporaceae	Lecture, pictures, slides	Quiz , homework
Eleventh	2	Students' comprehension structure, function, classification	Class : Oomycetes Family: Albuginaceae	Lecture, pictures, slides	Quiz , homework
Twelfth	2	Students' comprehension of structure, function, and classification	Phylum: Chytridiomycota	Lecture, pictures, slides	Quiz , homework
Thirteenth	2	Students' comprehension of structure, function, and classification	Class : Zygomycetes Order: Mucorales	Lecture, pictures, slides	Quiz , homework
Fourteenth	2	Students' comprehension of structure, function,	Class : Zygomycetes Order: Entomophthorales	Lecture, pictures, slides	homework

		and classification			
Fifteenth	1	Exam			
Sixteenth	2	Students' comprehension of structure, function, and classification	Phylum: Ascomycota Subphylum : Saccharomycotina	Lecture, pictures, slides	Homework
Seventeenth	2	Students' comprehension of structure, function, and classification	Subphylum: Pezizomycotina Class:Leotiomycetes 1. Order : Erysiphales	Lecture, pictures, slides	Quiz , homework
Eighteenth	2	Students' comprehension of structure, function, and classification	Subphylum: Pezizomycotina Class:Leotiomycetes 2. Order : Helotiales 3. Order Rhytismatales	Lecture, pictures, slides	Quiz , homework
Nineteenth	2	Students' comprehension of structure, function, and classification	Class : Eurotiomycetes	Lecture, pictures, slides	Quiz , homework
Twentieth	2	Students' comprehension of structure, function, and classification	Class: Sordariomycetes	Lecture, pictures, slides	Quiz , homework
Twenty first	2	Students' comprehension of structure, function, and classification	Class: Dothidiomycetes	Lecture, pictures, slides	Quiz , homework
Twenty second	2	Students' comprehension of structure, function, and classification	Class:Pezizomycetes	Lecture, pictures, slides	Quiz , homework
Twenty third	2	Students' comprehension of structure, function, and classification	Phylum **:** Basidiomycota 1- Class: Teliomycetes 1. Order:Uredinales	Lecture, pictures, slides	Quiz , homework
Twenty fourth	2	Students' comprehension of structure, function, and classification	2. Order: Ustilaginales	Lecture, pictures, slides	Quiz , homework
Twenty fifth	2	Students' comprehension of structure, function, and classification	2-Class: Hymenomycetes	Lecture, pictures, slides	Quiz , homework
Twenty sixth	2	Students' comprehension of structure, function, and classification	Phylum: Deuteromycota 1- Form – class: Coelomycetes	Lecture, pictures, slides	Quiz , homework
Twenty seventh	2	Students' comprehension of	2- Form – class: Hyphomycetes	Lecture, pictures, slides	Quiz , homework

		structure, function, and classification			
Twenty eighth	2	Students' comprehension of structure, function, and classification	Mycorrhiza	Lecture, pictures, slides	Quiz , homework
Twenty nineth	2	Students' comprehension of structure, function, and classification	Lichen	Lecture, pictures,slides	homework
Thirtieth	1	Exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Introduction to Fungi / Webster and Weber, 3ed ed., 2007 ,Cambridge University Press.
Recommended books and references (scientific journals, reports...)	Benson's Microbiological Applications Laboratory Manual in General Microbiology, Alfred E. Brown, 8th ed., 2001, McGraw−Hill Companies.
Electronic References, Websites	https://www.davidmoore.org.uk

Course Description Form

1. Course Name: theoretical Entomology

2. Course Code: **EDBI24F309**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

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Email: dr.ibrahimkhaleel@uomosul.edu.iq

8. Course Objectives

Course Objectives	● **Knowing the basic principles of Entomology** ● **Knowing the practical applications of Entomology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Knowing the position of insecta class from animalia kingdom and the importance of insects	position of insecta class from animalia kingdom, the importance of insects	Lecture	quizzes
Second	2	Knowing the external structure of insects	Body wall, Head, Thorax and Abdomen	Lecture	quizzes
Third	2	Knowing the internal structure of insects	Internal structure of insects	Lecture	quizzes

Fourth	2	Understanding the functions of digestive, respiratory and nervous systems	Digestive, Respiratory and Nervous systems	Lecture	Quiz, report , homework
Fifth	2	Understanding the functions of sense organs	Sense organs	Lecture	Homework
Sixth	2	Understanding the functions of muscular and circulatory systems	Muscular and Circulatory systems	Lecture	Quiz, report , homework
Seventh	2	Understanding the functions of excretory organs	Excretory organs	Lecture	Homework
Eighth	2	Understanding the oogenesis and spermatogenesis	Reproductive system	Lecture	Quiz, report , homework
Nineth	2	Understanding the mouling in insects	Reproduction, Growth and Development	Lecture	Homework
Tenth	2	Understanding the basic principles of Insect communities evolution	Insect communities and their evolution	Lecture	Quiz, report homework
Eleventh	2	Understanding the basic principles of taxonomic keys	Classification of insects	Lecture	Quiz, report homework
Twelfth	2	Understanding the position of insecta class from animalia kingdom and general characteristics of insecta class	Classification of insects	lecture	Homework
Thirteen	2	Understanding the general characteristics of apterygota subclass	Subclass of Apterygota	lecture	Quiz
Fourteenth	2	Understanding the general characteristics of orders: thysanura and collemola	Orders: Thysanura and Collemola	Lecture	Quiz
Fifteenth	1	Exam			
Sixteenth	2	Understanding the general characteristics of orders: protura and diplura	Orders: Protura and Diplura	Lecture	Quiz

Seventeenth	2	Understanding the general characteristics of pterygota subclass	Subclass of Pterygota	lecture	Quiz, and homework
Eighteenth	2	Understanding the general characteristics of exopterygota division	Division of Exopterygota	Lecture	Quiz
Nineteenth	2	Identifying the exopterygota division	Orders of Exopterygota Division	Lecture	homework
Twentieth	2	Understanding the general characteristics of endopterygota division	Division of Endopterygota	Lecture	Quiz
Twenty first	2	identifying the endopterygota division	Orders of Endopterygota Division	Lecture	homework
Twenty second	2	Understanding the general characteristics of orders: ephemeroptera, odonata and plecoptera	Orders: Ephemeroptera, Odonata and plecoptera	Lecture	Quiz
Twenty third	2	Understanding the general characteristics of orders: orthoptera, phasmida and dermaptera	Orders: Orthoptera, Phasmida and Dermaptera	Lecture	homework
Twenty fourth	2	Understanding the general characteristics of orders: embioptera, dictyoptera and isoptera	Orders: Embioptera, Dictyoptera and Isoptera	lecture	Quiz
Twenty fifth	2	Understanding the general characteristics of orders: siphunculata, hemiptera and thysanoptera	Orders: Siphunculata, Hemiptera and Thysanoptera	lecture	homework

Twenty sixth	2	Understanding the general characteristics of orders: neuroptera and mecoptera	Orders: Neuroptera and Mecoptera	lecture	Quiz
Twenty seventh	2	Understanding the general characteristics of orders: lepidoptera and tricoptera	Orders: Lepidoptera and Tricoptera	lecture	Quiz
Twenty eighth	2	Understanding the general characteristics of orders: diptera and siphonaptera	Orders: Diptera and Siphonaptera	lecture	Quiz
Twenty nineth	2	Understanding the general characteristics of orders: hymenoptera, coleoptera and stoepsiptera	Orders: Hymenoptera, Coleoptera and Stoepsiptera	Lecture	Quiz
Thirtieth	1	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

Main references (sources)	Gillott, C. (2005). Entomology. Springer Science & Business Media.
Recommended books and references (scientific journals, reports...)	Romoser, W. S. (1981). The science of entomology (No. Ed. 2). Macmillan Publishing Co. Inc..
Electronic References, Websites	https://entomology.edu.au/learn

Course Description Form

Course Name: Practical Entomology .1
Course Code: **EDBI24F309** .2
Semester / Year: 2023-2024 .3
Description Preparation Date: 1/9/2023 .4
Available Attendance Forms: Laboratory , Classroom .5
Number of Credit Hours (Total) / Number of Units (Total) .6
2/2
Course administrator's name (mention all, if more than one name) .7
Name: Assistant Prof. Dr. Ibrahim khaleel Ibrahim Email: dr.ibrahimkhaleel@uomosul.edu.iq Name: Assistant Prof. Dr. Safaa Mohammed Mahmood Email: mohamedsafaa213@uomosul.edu.iq Name: Lecturer Dr. Shaymaa Mohammed Hisham Email: sshaymamhisham@uomosul.edu.iq Name: Lecturer Dr. Semaa Ahmed Baker Email: semaaabakir123@uomosul.edu.iq Name: Assistant Lecturer. Ahmed Nabeel Saeed Email: ahmed.nabeel@uomosul.edu.iq
Course Objectives .8

Course Objectives	**Knowing the basic principles of Entomology** ● **Knowing the practical applications of Entomology** ●

Teaching and Learning Strategies .9

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

Course Structure .10

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Choosing the appropriate methods and tools of insects collecting	Methods of insects collecting	Lecture	quizzes

Second	2	Knowing the materials used to kill of insects	Insects killing	Lecture	quizzes
Third	2	Knowing the methods and tools used to preserve of insects	Insects preservation	Lecture	quizzes
Fourth	2	Understanding the external structure and characteristics of insects	External characteristics of insects	experiment	Quiz, report , homework
Fifth	2	Practical application for Knowing the positions, structure and appendages of insect head	Positions, structure and appendages of insect head	Lecture	Homework
Sixth	2	Understanding the mechanism of insect mouthparts moving and structure of insect mouthparts	Insect mouthparts and insect mouthpart modifications	experiment	Quiz, report , homework
Seventh	2	Practical application for identifying the antenna parts and its modifications	Insect antennae and types of insect antennae	Lecture	Homework
Eighth	2	Understanding the components of thoracic segments	The thorax	experiment	Quiz, report , homework
Nineth	2	Practical application for identifying the parts and types of insect legs	Appendages of insect thorax, insect legs and insect legs modifications	Lecture	Homework
Tenth	2	Understanding the structure, modification and coupling of wing	types of insect wings and insect wing coupling	experimentiz,	report , homework
Eleventh	2	Understanding the components abdominal regions and identifying the abdominal appendages of insects	The abdomen and abdominal appendages of insects	experimentiz,	report , homework
Twelfth	2	Practical application for identifying a types of insect metamorphosis	Insect metamorphosis	Lecture	Homework

Thirteen	2	Understanding a types and shapes of immature stages	Immature stages	Lecture	Quiz, and homework
Fourteenth	2	Practical applications for identifying a types of eggs, larvae and pupae of insects	Eggs, larvae and pupae of insects	Lecture	Homework
Fifteenth	1	Exam			
Sixteenth	2	Understanding the position of insecta class from animalia kingdom and general characteristics of insecta class	Classification of insects	lecture	Quiz, report , homework
Seventeenth	2	Understanding the general characteristics of apterygota subclass	Subclass of Apterygota	lecture	Quiz
Eighteenth	2	Understanding the general characteristics of pterygota subclass	Subclass of Pterygota	lecture	Quiz, and homework
Nineteenth	2	Understanding the general characteristics of exopterygota division	Division of Exopterygota	Lecture	Quiz
Twentieth	2	Identifying the exopterygota division	Orders of Exopterygota Division	Lecture	homework
Twenty first	2	Understanding the general characteristics of endopterygota division	Division of Endopterygota	Lecture	Quiz
Twenty second	2	Practical application for identifying the endopterygota division	Orders of Endopterygota Division	Lecture	homework
Twenty third	2	Understanding the general characteristics of orders: ephemeroptera, odonata and plecoptera	Orders: Ephemeroptera, Odonata and plecoptera	Lecture	Quiz

Twenty fourth	2	Practical applications for identifying the orders: orthoptera, phasmida and dermaptera	Orders: Orthoptera, Phasmida and Dermaptera	Lecture	homework
Twenty fifth	2	Understanding the general characteristics of orders: embioptera, dictyoptera and isoptera	Orders: Embioptera, Dictyoptera and Isoptera	lecture	Quiz
Twenty sixth	2	Practical applications for identifying the orders: siphunculata, hemiptera and thysanoptera	Orders: Siphunculata, Hemiptera and Thysanoptera	lecture	homework
Twenty seventh	2	Understanding the general characteristics of orders: neuroptera and mecoptera	Orders: Neuroptera and Mecoptera	lecture	Quiz
Twenty eighth	2	Practical applications for identifying the orders: lepidoptera, tricoptera and diptera	Orders: Lepidoptera, Tricoptera and Diptera	lecture	Quiz
Twenty nineth	2	Understanding the general characteristics of orders: siphonaptera, hymenoptera, coleoptera and stoepsiptera	Orders: Siphonaptera, Hymenoptera, Coleoptera and Stoepsiptera	Lecture	Quiz
Thirtieth	1	Exam			

Course Evaluation.11	
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	
Learning and Teaching Resources .12	
Main references (sources)	Gillott, C. (2005). Entomology. Springer Science & Business Media.
Recommended books and references (scientific journals, reports...)	Romoser, W. S. (1981). The science of entomology (No. Ed. 2). Macmillan Publishing Co. Inc..

Electronic References, Websites	https://entomology.edu.au/learn

Course Description Form

1. Course Name: Genetics

2. Course Code: **EDBI24F304**

3. Semester / Year: 2024-2023

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Class /Classroom

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

   2/6

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

   Name: Assist . Prof . Raad Hassani Sultan
   Email: dr.raadsultan@uomosul.edu.iq

8. Course Objectives

Course Objectives	**Identifying the basic principles of Genetics.** **Identifying the basic theories of genetics**

9. Teaching and Learning Strategies

Strategy	Lectures, discussions , reports, homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Identifying the basic concepts of genetics	Principles of genetics	Lecture	Quiz and student discussions
Second	2	Identifying of Mendelian genetics	First Mendelian low	Lecture	Quiz and student interaction
Third	2	Understanding similarity among alleles or not	Back cross and test cross	Lecture	Quiz and student interaction
Fourth	2	Understanding free distribution	Second Mendelian low	Lecture	Quizz and Homework

		law			
Fifth	2	Understanding the deviations from first Mendel law	Incomplete and complete dominance	Lecture	Homework and student interaction
Sixth	2	Understanding cellular basis of hereditary	Gene concept	Lecture	Quizzes and homework
Seventh	2	Understanding chromosomal theory	Penetrance and expressivity	Lecture	Homework
Eighth	2	Understanding quantitative genetics	Gene determination	Lecture	Quizzes and homework
Nineth	2	Understanding the gene action	Hereditary	Lecture	Homework
Tenth	2	Understanding sex determination	Six determination in chromosome	Lecture	Quizzes and homework
Eleventh	2	Understanding sex determination in bacteria	Sex determination in bacteria	Lecture	Quizzes and homework
Twelfth	2	Understanding sex-linked inheritance	Genetic hemophilia disease	Lecture	Homework
Thirteen	2	Understanding linkage and cross over	Complete and incomplete linkage	Lecture	Quizzes and homework
Fourteenth	2	Understanding co-incidence and interference	Chromosomal maps	Lecture	Homework
Fifteenth	2	Understanding the genetic material outside the nucleus	Cytoplasmic inheritance	Lecture	Quizzes
Sixteenth	2	Understanding the extrachromosomal DNA in prokaryotes	Plasmids in bacteria	Lecture	Quizzes and homework
Seventeenth	2	Understanding cytoplasmic inheritance in eukaryotes	Effect of the mother in snails	Lecture	Quizzes and homework
Eighteenth	2	Understanding population genetics	Harry-Weinberg low	Lecture	Quizzes and homework
Nineteenth	2	Understanding gene frequency	Gene frequency calculation	Lecture	Quizzes
Twentieth	2	Understanding gene structure	Genes and inheritance	Lecture	Quizzes and homework
Twenty first	2	Understanding genetic material	Genetic transformation and transduction	Lecture	Quiz and student discussions
Twenty second	2	Understanding DNA replication	Replication of DNA	Lecture	Homework and student

					discussion
Twenty third	2	Understanding RNA replication	Ribonucleic acids	Lecture	Homework and student
Twenty fourth	2	Understanding types of RNA	Types of ribonucleic acid	Lecture	Homework and questions
Twenty fifth	2	Understanding mechanism of RNA transcription	Transcription	Lecture	Quizzes and student interaction
Twenty sixth	2	Understanding the mechanism of translation	Translation	Lecture	Homework and student discussion
Twenty seventh	2	Understanding mechanism of DNA replication in Eukaryotes	Replication of chromosomes in eukaryotes	Lecture	Quizzes and student interaction
Twenty eighth	2	Identification of types of gene mutation	Genetic mutations	Lecture	Quizzes and student interaction
Twenty nineth	2	Identifying the autosomal and sex chromosomes changes	Klenfilters'and Downs' syndrome	Lecture	Quizzes and student interaction
Thirtieth	2	Identifying of the steps in genetic engineering	Genetic engineering and gene cloning	Lecture	Discussionand student interaction

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)	علم الوراثة 1989 تاليف سعد جابر تاج الدين وعبد النبي هادي العيسى، دار ابن الاثير للطباعة والنشر
Main references (sources)	Tamarin, R.H. 1996. Principles of Genetics, 5th ed. Wmc Brown publishers. USA.
Recommended books and references (scientific journals, reports...)	Snustad D.P. and Simmons, M.J.2000. Principles of Genetics, 6th edition,. John Wiely and Sons
Electronic References, Websites	https://learn.genetics.utah.edu/

Course Description Form

1. Course Name: Practical Genetics

2. Course Code: **EDBI24F304**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Assistant Prof. Dr. Raad Hassani Sultan
Email: dr.raadsultan@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Genetics** • **Knowing the practical applications of Genetics**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Choosing an appropriate organism for study	Suitable organisms for genetic studies	Lecture	quizzes
Second	2	Knowing the organism	Fruit fly	Lecture	quizzes
Third	2	Knowing the organism	Corn	Lecture	quizzes
Fourth	2	Understanding basic principles	Mendel 1st law	experiment	Quiz, report , homework
Fifth	2	Practical application of law	Problem solving	Problem solving	Homework

Sixth	2	Understanding basic principles	Mendel 2nd law	experiment	Quiz, report , homework
Seventh	2	Practical application of law	Problem solving	Problem solving	Homework
Eighth	2	Understanding basic principles	Test cross	experiment	Quiz, report , homework
Nineth	2	Practical application of law	Problem solving	Problem solving	Homework
Tenth	2	Understanding the basic principles of gene interaction	Complementary genes	experiment	Quiz, report homework
Eleventh	2	Understanding the ba principles of ge interaction	Complementary genes	experiment	Quiz, report homework
Twelfth	2	Practical applications	Problem solving	Problem solving	Homework
Thirteen	2	Understanding basic principles and applications	Quantitative genetics	Lecture	Quiz, and homework
Fourteenth	2	Practical applications	Problem solving	Problem solving	Homework
Fifteenth	1	Exam			
Sixteenth	2	Understanding the basic principles	Sex determination in organisms	lecture	Quiz, report , homework
Seventeenth	2	Understanding the basic principles and crosses	Sex-linked inheritance	lecture	Quizzes
Eighteenth	2	Understanding problem solving and crosses	Problem solving	Problem solving	Quiz, and homework
Nineteenth	2	Understanding pedigree analysis in genetic diseases	Pedigree analysis	Lecture	Quizzes
Twentieth	2	Pedigree analysis	Problem solving	Problem solving	homework
Twenty first	2	Understanding modifications of 1^{st} and 2^{nd} Mendel law	Co-dominance and multiple alleles	Lecture	Quiz
Twenty second	2	Practical applications	Problem solving	Problem solving	homework
Twenty third	2	Understanding linkage and cross-over	Linkage and cross-over	Lecture	Quiz
Twenty fourth	2	Practical applications	Problem solving	Problem solving	homework
Twenty fifth	2	Understanding population genetics	population genetics	lecture	Quiz

Twenty sixth	2	Practical applications	Problem solving	Problem solving	homework
Twenty seventh	2	Understanding the principles of horizontal gene transfer	Conjugation	Lecture	Quiz
Twenty eighth	2	Practical application of Molecular genetics	DNA sequencing	lecture	Quiz
Twenty nineth	2	Understanding cytoplasmic inheritance	cytoplasmic inheritance	Lecture	Quiz
Thirtieth	1	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)	Genetics. 1989. Saad J. Taj-Aldeen and Abdu lnaaby H. Al-Essa .Ibn alathir Publication house
Main references (sources)	Tamarin, R.H. 1996. Principles of Genetics, 5th ed. Wmc Brown publishers. USA.
Recommended books and references (scientific journals, reports...)	Snustad D.P. and Simmons, M.J.2000. Principles of Genetics, 6th edition,. John Wiely and Sons
Electronic References, Websites	https://learn.genetics.utah.edu/

Course Description Form

1. Course Name: Ecology and Environmental

2. Course Code: **EDBI24F301**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Class , Classroom

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

Prof. Dr. Abdul-Aziz Younis Al-Saffawi alsffawia65@gmail.com
Prof. Dr. Hussein Saber Mohammed Ali dr.husseinbio76@uomosul.edu.iq

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

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Ecology** • **Knowing the practical applications of Ecology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Knowledge and skill	Basics of ecology	Lecture	quizzes
Second	2	Knowledge and skill	Environment compone	Lecture	quizzes
Third	2	Knowledge and skill	Biotic Components	Lecture	quizzes
Fourth	2	Knowledge and skill	Abiotic Components	experiment	Quiz, report , homework
Fifth	2	Knowledge and skill	Producers	Problem solving	Homework
Sixth	2	Knowledge and skill	consumers	experiment	Quiz, report , homework
Seventh	2	Knowledge and skill	Decomposer	Problem solving	Homework

Eighth	2	Knowledge and skill	Food Chin	experiment	Quiz, report , homework
Nineth	2	Knowledge and skill	Web Chin	Problem solving	Homework
Tenth	2	Knowledge and skill	Energy pyramid	experimen	Quiz, report , homework
Eleventh	2	Knowledge and skill	Factors affecting livir organisms	experimen	Quiz, report , homework
Twelfth	2	Knowledge and skill	Ecological succession	Problem solving	Homework
Thirteen	2	Knowledge and skill	Productivity	Lecture	Quiz, and homework
Fourteenth	2	Knowledge and skill	Biogeochemical Cycles	Problem solving	Homework
Fifteenth	1	Knowledge and s	Earth Biomes		
Sixteenth	2	Knowledge and skill	Community environment	lecture	Quiz, report , homework
Seventeenth	2	Knowledge and skill	Energy flow in the environment	lecture	Quizzes
Eighteenth	2	Knowledge and skill	Natural hazards	Problem solving	Quiz, and homework
Nineteenth	2	Knowledge and skill	Environmental pollution	Lecture	Quizzes
Twentieth	2	Knowledge and skill	Soil pollution	Problem solving	homework
Twenty first	2	Knowledge and skill	Water pollution	Lecture	Quiz
Twenty second	2	Knowledge and skill	Air pollution	Problem solving	homework
Twenty third	2	Knowledge and skill	Depletion of natural resources	Lecture	Quiz
Twenty fourth	2	Knowledge and skill	Factors affecting living organisms	Problem solving	homework
Twenty fifth	2	Knowledge and skill	Ecological succession	lecture	Quiz
Twenty sixth	2	Knowledge and skill	Population group	Problem solving	homework
Twenty seventh	2	Knowledge and skill	Oil pollution	Lecture	Quiz
Twenty eighth	2	Knowledge and skill	Productivity	lecture	Quiz
Twenty nineth	2	Knowledge and skill	Density and frequency	Lecture	Quiz
Thirtieth	1	Exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	

Main references (sources)	Environmental Pollution, Ayed Radi Khanfar, 2009, Dar Al-Yazourdi for Publishing and Printing. Environmental Pollution, Muthanna Abdel-Razzaq Al-Omar, 2010, Dar Wael for Publishing and Distribution. Introduction to Environmental Science, Ali Salem Al-Shawara, 2012, Dar Al-Masirah for Printing Publishing and Distribution.
Recommended books and references (scientific journals, reports...)	Freshwater Biology, Hamid Salman Khamis and Muhammad Hamid Ayoub, 1989, National Library for Printing and Publishing.
Electronic References, Websites	

Course Description Form

1. Course Name: Environment and practical pollution

2. Course Code: **EDB124F301**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

4/4

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

Name: Reem Adnan abd-Alrazaq
Azhar Yuonis Rida
Waffaa Esam abd-Alqader
Suzan Othman Omer

8. Course Objectives

Course Objectives	**• Learn the basic details of practical ecology and pollution** **• Identify misconduct and pollution**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lecture, dialogue and discussions, conducting practical experiments, reports and daily assignments

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Knowledge and skill	An introductory introduction to the environment and pollution	Lecture	quizzes
Second	2	Knowledge and skill	Environmental devices part One	Lecture	quizzes
Third	2	Knowledge and skill	Environmental devices part tow	Lecture	quizzes

Fourth	2	Knowledge and skill	Acid function	experience	Quiz, report , homework
Fifth	2	Knowledge and skill	The Soil	experience	Homework
Sixth	2	Knowledge and skill	Soil moisture content	experiment	Quiz, report , homework
Seventh	2	Knowledge and skill	Field capacity	experiment	Homework
Eighth	2	Knowledge and skill	Determination of calcium and magnesium in soil and water	experiment	Quiz, report , homework
Nineth	2	Knowledge and skill	Determination of chloride in water	Experiment	Homework
Tenth	2	Knowledge and skill	Total hardnees	Experiment	Quiz, report homework
Eleventh	2	Knowledge and skill	Total Alkalinity	Experiment	Quiz, report homework
Twelfth	2	Practical applications	Estimation of dissolved oxygen in water	experiment	Homework
Thirteen	2	Knowledge and skill	Productivity	Lecture	Quiz, and homework
Fourteenth	2	Knowledge and skill	Evidence of bacterial contamination in water part One	Experiment	Homework
Fifteenth	1	Exam			
Sixteenth	2	Knowledge and skill	Evidence of bacterial contamination in water part tow	experiment	Quiz, report , homework
Seventeenth	2	Knowledge and skill	Density and frequency	Lecture	Quizzes
Eighteenth	2	Knowledge and skill	Population groups part One	Lecture	Quiz, and homework
Nineteenth	2	Knowledge and skill	Population groups part tow	Lecture	Quizzes
Twentieth	2	Knowledge and skill	Oil pollution	Lecture	homework
Twenty first	2	Knowledge and skill	Air pollution	Lecture	Quiz
Twenty second	2	Knowledge and skill	Water pollution	Lecture	homework

Twenty third	2	Knowledge and skill	Food chains	Lecture	Quiz
Twenty fourth	2	Knowledge and skill	Food webs	Lecture	homework
Twenty fifth	2	Knowledge and skill	Bioaccumulation of heavy metals	Lecture	Quiz
Twenty sixth	2	Knowledge and skill	Fertilizer contamination	Lecture	homework
Twenty seventh	2	Knowledge and skill	Pesticide contamination	Lecture	Quiz
Twenty eighth	2	Knowledge and skill	The water cycle in nature	Lecture	Quiz
Twenty nineth	2	Knowledge and skill	Rain pollution Sour	Lecture	Quiz
Thirtieth	1	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)	The methodological book in Arabic, Practical Environmental Engineering, 1990, Environmental Science, Hussein Al-Saadi 2017 Stand Method for Examination of water and ● waste water, 1998
Main references (sources)	Soil and water pollution and treatment, 2016 Dr. Hala Marwan Sheikhani, Dr. Muhammad Samir Al-Hafez, Dr. Iyad Saray Al-Din Freshwater Biology / Written by: Peter S. Maitland Translated by: Dr. Hamid Salman Khamis and Mr. Muhammad Hamid Ayoub
Recommended books and references (scientific journals, reports...)	Environment and development magazine https://www.env-news.com/in-depth/reports
Electronic References, Websites	https:/ www.unep.org/ar

Course Description Form

Course Name: Method of Teaching & Curriculum

1.

2. Course Code: EDB124F306

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Classroom

6. Number of Credit Hours (Total) / Number of Units (Total) : 2

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

Name: Assistant Prof. Dr. Maarib Mohmaad Ahmad
Email: dr.maarib.ahmad@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Knowing the concept of Science, teaching, Learning, method of teaching. planing of teaching. • Knowing what meaning of the Curriculum. • Knowing the model of method & Strategie • Knowing the practical & applications of Method from application in class.

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving, Cooperative education, Brainstorming, Programmed education, The meaning of

	planning and its types, , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Knowledge, Understanding, applications	Concept of Science & what skilles Science	Lecture and discussions	Shareing in class& interaction with students
Second	2	Knowledge, Understanding, applications	the Curriculum .	Lecture and discussions	Shareing in class& interaction with students
Third	4	Knowledge, Understanding, applications	Types of curricula	Lecture Cooperative learning	Shareing in class& interaction with students
Fourth	2	Knowledge, Understanding, applications	Elements of the educational process	Cooperative learning	Shareing in class& interaction with students

Fifth	4	Knowledge, Understanding, applications	Educational Objectives	Problem solving, Brains-torming	Homework, Shareing in class& interaction
Sixth	2	Knowledge, Understanding, applications	Applications of group student	Experiment in class	report , homework
Seventh	2	Knowledge, Understanding, applications	basic principles of teaching	Lecture and discussions	Homework
Eighth	2	Knowledge, Understanding, applications	Characteristics of good teaching	Lecture and discussions	report , homework, Cooperative learning
Nineth	2	Knowledge, Understanding, applications	the Principles of Lecture	Lecture and discussions	Homework, Cooperative Learning among student
Tenth	2	Understanding the basic principles of Discussions method.	Discussions method.	Experiment Cooperative Learning among studer	report Homework,
Eleventh	2	Knowledge, Understanding, applications	Programmed learing	experiment	report , homework
Twelfth	2	Knowledge, Understanding, applications	Problem solving	Problem solving & Cooperative group	Homework
Thirteen	4	Knowledge, Understanding, applications	Model of Cooperative learning	Lecture, Cooperative group	Quiz, and homework

Fourteenth	4	Knowledge, Understanding, applications	Playing &project method	Playing group& discussions	report , Homework,
Fifteenth	1	Exam			
Sixteenth	2	Understanding the basic principles	Laboratory method	Lecture& discussions	, report , homework, Cooperative Learning among studen
Seventeenth	4	Knowledge, Understanding, applications	What meaning of planning and its types,	lecture	Quizzes
Eighteenth	4	Knowledge, Understanding, applications	Example of planning	Cooperative Learning among studen	Quiz, & report homework
	1	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

تدريس العلوم في مراحل التعليم العام	الخليلي، خليل يوسف واخرون(1996) تدريس العلوم في مراحل التعليم العام، دار القلم للنشر، الامارات العربية
Main references (sources)	اساليب التدريس الجامعي، عايش زيتون، استراتيجيات وطرائق في تدريس العلوم، نماذج في تدريس العلوم وفق النظرية البنائية
Recommended books and references (scientific journals, reports...)	From internet
Electronic References, Websites	https://learn. Strategies, edu/

Course Description Form

1. Course Name: Counseling & Mental Health

2. Course Code: EDBI24F307

3. Semester / Year: 2023 – 2024

4. Description Preparation Date: 1 / 9 / 2023

5. Available Attendance Forms: In-person - electronic class

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

2 hours / 4 units

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

Name: Asist. Ahmed Adeeb Qanbar Shehab
Email: ahmed.adeeb@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Identify the basic concepts of the counseling process. • Learn about psychological counseling theories. • Identify the importance of mental health.

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussions, brainstorming, problem solvi conducting practical experiments, reports and daily assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2 hours	The student should understand the concepts of counseling and its origin.	The concept of guidance, its origin and development.	Lecture and discussion	Quizzes
Second	2 hours	The student should clarify the justifications for counseling and its objectives.	Justifications for counseling and its objectives in the educational process.	Lecture and discussion	Quizzes
Third	2 hours	To understand the relationship between counseling in other sciences and areas of counseling.	The relationship between counseling and other sciences, areas of counseling.	Lecture and discussion	Quizzes

Fourth	2 hours	To differentiate between the methods of counseling in the educational process.	Counseling methods (individual – collective).	Lecture and discussion	Quizzes
Fifth	2 hours	To distinguish between the foundations of psychological counseling.	The foundations of psychological counseling (philosophical - social).	Lecture and discussion	Homework
Sixth	2 hours	To distinguish between the foundations of psychological counseling.	The foundations of psychological counseling (moral - religious - psychological).	Lecture and discussion	Quizzes and Homework
Seventh	2 hours	The student should understand the most important problems addressed by psychological and educational counseling.	Problems addressed by educational and psychological counseling.	Lecture and discussion And solve problems	Homework
Eighth	2 hours	To understand the relationship. meaning of mental health and its.	The meaning of mental health, its relationship and importance.	Lecture and discussion	Quizzes
Ninth	2 hours	To know personal integration, mental health goals.	Mental health goals, personal integration.	Lecture and brainstormin g	Quizzes
Tenth	2 hours	The student should distinguish between normal personality and abnormal personality.	Normal and non-Normal personality.	Lecture and discussion	Quizzes and Homework
Eleventh	2 hours	The student should know personal crises.	Personal crises.	Lecture and discussion	Quizzes and Homework
Twelve	2 hours	The student should summarize the reasons for the frustration.	Frustration, its types and causes.	Lecture, discussion and problem solving	Homework
Thirteenth	2 hours	The student should explain the most important mental disorders.	Mental disorders .	Lecture	Quizzes and Homework
Fourteenth	2 hours	The student should know the concept of compatibility.	Compatibility, its types and characteristics.	Lecture, discussion, problem solving	Homework
Fifteenth	An hour and a half		Semester Exam		
Sixteenth	2 hours	The student should know the concept of adaptation, its types and	Adaptation, its types and characteristics .	Lecture and discussion	Quizzes and Homework

		characteristics.			
Seventeenth	2 hours	The student should explain the role of psychoanalytic theory in psychological counseling.	Psychoanalytic Theory in psychological counseling.	Lecture and discussion	Quizzes
Eighteenth	2 hours	The student should explain the role of behavioral theory in psychological counseling.	Behavioral Theory	Problem Solving	Quizzes and Homework.
Nineteenth	2 hours	The student should explain the role of existential theory in psychological counseling.	Existential theory .	Lecture and discussion	Quizzes
Twentieth	2 hours	The student should explain the role of the theory of humanity in psychological counseling.	The theory of humanism .	Problem Solving	Homework
Twenty-first	2 hours	The student collects the most important information necessary for guidance.	Information necessary for guidance and the importance of information.	Lecture and discussion	Quizzes
Twenty-second	2 hours	The student should understand the role of the cumulative record, CV and narrative record.	Cumulative record, curriculum vitae and anecdotal record.	Lecture, discussion, problem solving	Homework
Twenty-third	2 hours	The student should understand the concept of the role of observation and interview.	Observation and interview.	Lecture, discussion	Quizzes
Twenty-fourth	2 hours	The student should understand the role of guidance and counseling in the school.	Guidance and counseling at school.	Lecture, discussion, problem solving	Homework
Twenty-fifth	2 hours	The student should understand the role of parent-teacher councils in counseling.	The role of parent-teacher councils in counseling.	Lecture, discussion	Quizzes
Twenty-sixth	2 hours	The student should understand defense mechanics and their types.	Defensive mechanisms and their types.	Lecture, discussion, problem solving.	Homework
Twenty-seventh	2 hours	The student should explain the types of defense mechanisms.	Types of defense Mechanisms	Lecture, discussion	Quizzes
Twenty-eighth	2 hours	The student should explain the causes of the pathological, defensive	Pathological, defensive and herpetic symptoms.	Lecture, discussion	Quizzes

		and escaped symptoms.			
Twenty-ninth	2 hours	The student knows the concept of depression and its types.	Depression and its types.	Lecture, discussion	Quizzes
Thirtieth	2 hours		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 a	- Psychological Counseling and Educational Guidance, Must Mahmoud Al-Imam, et al., (1991) at the University of Baghda Principles of Psychological Counseling for Counselors Psychologists, - Mohammed Ahmed Mashaqbeh (2008) Amman, Dar Al-Man for Publishing and Distribution. - Psychological Guidance and Counseling, Hamed Abdel Sal Zahran (2005), Cairo, World of Books.
Main references (sources)	The reference in mental health, Adeeb Muhammad Al-Khalidi (20 Baghdad Erbil Office.
Recommended books and references (scientific journals, reports...)	DSM-5 Statistical Diagnostic Guide to Psychiatry and Resea from the American Psychological Counseling Association.
Electronic References, Websites	The website of the World Health Organization and the sites scientific journals.

Course Description Form

- Course Name:

Basis of scientific Research

- Course Code:

EDB123F308

- Semester / Year:

The first and second semesters of the 2023-2024 academic year

- Description Preparation Date:

1 /9/2023

- Available Attendance Forms:

In-person and electronic

- Number of Credit Hours (Total) / Number of Units (Total)

60/4

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

Name: Zeyad Bader Hamad
Email: dr.zeyadhamad78@uomosul.edu.iq

- Course Objectives

Course Objectives	**• • For the student to become familiar with scientific research methods.** **• For the student to become familiar with research sources and references, libraries and their history, and means of presenting scienti research.** **• The student must have the characteristics of a researcher.** **• That the student acquires the skill of research techniques.** **• The student will acquire the skill of research using the computer and the information network.** **• The student must be proud of his civilization and heritage in the field of scientific research.** **To be objective and scientifically honest when becoming a researcher.**

- Teaching and Learning Strategies

Strategy	• Managing lectures in a way that shows the importance of time. • Group activities for which 10% of the grade is allocated. • Individual and group assignments that require the use of the library and the Internet. • Increasing the spirit of positive competition. • Reciprocal teaching.

- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge and skill	Basic concepts in scientific research, including: methods of accessing knowledge, assumptions scientific research, objectives of scientific research.	Electronic integrated i the lecture	a test
2	2	Knowledge and skill	Specifications of good research, problems of scientific method in educational research,	Electronic integrated the lecture	a test

			ethical principles in scientific research.		
3	2	Knowledge and skill	Scientific research steps: choosing the research problem, reviewing literature related to the study, formulating research hypotheses.	Electronic integrated the lecture	a test
4	2	Knowledge and skill	Designing the research plan, collecting data, presenting and analyzing data, and writing the report.	Electronic integrated the lecture	a test
5	2	Knowledge and skill	Research plan design: Eleme of the research plan include: Search title. Introduction. - Research problem.	Electronic integrated the lecture	a test
6	2	Knowledge and skill	Research hypotheses. Research variables. Importance. Research objectives. - Previous studies.	Electronic integrated the lecture	a test
7	2	Knowledge and skill	Research methodology procedures	Electronic integrated the lecture	a test
8	2	Knowledge and skill	Reference list: How to write references: books, scientific theses, and research published scientific journals (periodicals), conferences, websites (in Arabic and English and providing examples for them)	Electronic integrated the lecture	a test
9	2	Knowledge and skill	Research Methods A- Historical research: The basic characteristics of historical research. Primary sources secondary sources.	Electronic integrated the lecture	a test
10	2	Knowledge and skill	Strengths and shortcomings in historical research. Steps of historical research	Electronic integrated the lecture	a test
11	2	Knowledge and skill	Descriptive research: Types of descriptive research. Survey research: Types of survey research: educational survey, social survey, cultural survey, and public opinion survey.	Electronic integrated the lecture	a test
12	2	Knowledge and skill	Content analysis, business analysis, case study, comparative graduate studies.	Electronic integrated the lecture	a test
13	2	Knowledge and skill	B- Experimental research: The concept of experimental research and	Electronic integrated the lecture	a test

			its characteristics. - Variables in experimental research. - Validity in experimental research.		
14	2	Knowledge and skill	Experimental designs: quasi-experimental designs, true experimental designs, factorial experimental designs, and one-individual designs.	Electronic integrated the lecture	a test
15	2	Knowledge and skill	C- Qualitative research: - Characteristics of qualitative research, difference between qualitative research quantitative research.	Electronic integrated the lecture	a test
16	2	Knowledge and skill	- Collecting information in qualitative research. Steps for implementing qualitative research	Electronic integrated the lecture	a test
17	2	Knowledge and skill	Samples in scientific research: - Population and sample. - Types of samples: probability samples and non-probability samples.	Electronic integrated the lecture	a test
18	2	Knowledge and skill	- Steps for selecting the sample. - Estimating the sample size. General errors in sample selection	Electronic integrated the lecture	a test
19	2	Knowledge and skill	7- Tools and means of collecting data: - Observation. - Interview.	Electronic integrated the lecture	a test
20	2	Knowledge and skill	Questionnaire	Electronic integrated the lecture	a test
21	2	Knowledge and skill	8- Tools and means of collecting data: tests and standards - Research variables. - Measurement and its types. - Levels of measurement. - Tests and their classifications.	Electronic integrated the lecture	a test
22	2	Knowledge and skill	Characteristics of standardized tests: objectivity, application conditions, standards, validity (types of validity), and reliability (methods of extracting reliability)	Electronic integrated the lecture	a test
23	2	Knowledge and skill	10. Writing the research report: It includes the	Electronic integrated the lecture	a test

			following steps: - Writing the research problem: It includes: introduction to the research, defining the problem and its questions, the purpose of the research (justifications for the research), the importance of the research, the research hypotheses and questions, and procedural definitions of the most important terms. - Review of the study's literature: theoretical framework previous studies		
24	2	Knowledge and skill	- Research procedures: These include the research methodology and design, the sample, research materials, tools and procedures, experimental control of the research, and data analysis. - Research results: statistical analysis, reading and interpreting the results. - Summary of the research. - List of references. - Appendices Introductory and concluding pages	Electronic integrated the lecture	a test
25	2	Knowledge and skill	11. Basic considerations in writing a research report: - Display information and da - Research language and style: precise wording, use of appropriate sentences and structures, selection of words and phrases that serve the purpose, grammar and morphology, and punctuatio - Use of signs: punctuation, commas, parenthe abbreviations.	Electronic integrated the lecture	a test
26	2	Knowledge and skill	- Writing main and sub-headings. - The physical and technical form of the research. - Search volume and number of pages. - Paper that is uniform in form and type. - Clear printing and elegant writing. - Footnotes and margins, cover and binding.	Electronic integrated the lecture	a test

27	2	Knowledge and skill	12. Applications from the student's guide to writing research papers (preface, body, references) Introduction: title page, abstract, dedication page, thanks page, list	Electronic integrated the lecture	a test
28	2	Knowledge and skill	Contents, list of figures, drawings and tables, list of appendices. Text: Research chapters. Appendices: Arranging organizing the appendices.	Electronic integrated the lecture	a test
29	2	Knowledge and skill	13. Uses of statistics in psychological educational research: Descriptive statistics, inferential statistics, using statistical significance in research, hypotheses, choosing statistical test.	Electronic integrated the lecture	a test
30	2	Knowledge and skill	Significance level, sample s use of statistics in analyzing results, presentation of results in tables.	Electronic integrated the lecture	a test

- Course Evaluation

25% half the year
5% daily exams
5% activity (report or lecture)
5% semester exam
60% end-of-year exam

- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Obligatory to collect and prepare the subj teacher
Main references (sources)	A book of lectures on scientific research methodology Dr.. Iyad Youssef
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: English language – third class

2. Course Code: EDBI24F310

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/09/2023

5. Available Attendance Forms: Attendance (live lecture) + Google - Classroom

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

1/ 2

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

Name: Dr. Rabeea Hazim Mohammed
Email: dr.rabeeahm@uomosul.edu.iq

8. Course Objectives

Course Objectives	**Providing students with basic concepts of the English language** **• Familiarizing students with English language rules •** **Helping students for understanding ways to formulate speech in English** **• increase skill for speaking skills** **• Listening, reading, and speaking •** **Developing students' skills in written communication in English** **• Enhancing students' academic writing skills in English**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical lectures, dialogue and discussions, conducting practical experiments, daily reports and assignments, direct discussions with students, forming discussion groups among the students themselves

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Knowledge And skill	Grammar Parts of speech	Lecture	Daily Quiz, homework and assignme
Second	2	Knowledge And skill	Reading	Lecture	

Third	2	Knowledge And skill	Academic writing Grammar	Lecture Lecture	Daily Quiz, report and , homework
Fourth	2	Knowledge And skill	Nouns and Pronouns	Lecture Lecture	Daily Quiz, report and , homework
Fifth	2	Knowledge And skill	Speaking	Lecture	Daily Quiz, report and ,
Sixth	2	Knowledge And skill	Sending an email	Lecture	homework
Seventh	2	Knowledge And skill	Talking to each other	Lecture Lecture	Daily Quiz, report and , homework
Eighth	2	Knowledge And skill	Academic writing	Lecture Lecture	Daily Quiz, report and , homework
Ninth	2	Knowledge And skill	Reading	Lecture	Daily Quiz, report and ,
Tenth	2	Knowledge And skill	Speaking	Lecture	homework
Eleventh	2	Knowledge And skill	Grammar, prepositions	Lecture Lecture	Daily Quiz, report and , homework
Twelfth	2	Knowledge And skill	Grammar Countable and Un.	Lecture	Daily Quiz, report and ,
Thirteen	2	Knowledge	Regular and	Lecture	homework
Fourteenth	2	And skill	irregular verbs	Lecture	Daily Quiz, report and ,
Fifteenth	2	Knowledge And skill	Tenses	Lecture	homework
Fifteenth		Mid term	Mid-term	------	--------
Sixteenth	2	Knowledge And skill	Tenses	Lecture	Daily Quiz, report and , homework
Seventeenth		Knowledge			

Eighteenth	2	And skill	Tenses	Lecture	
Nineteenth	2	Knowledge And skill	Passive and Active	Lecture	---------
Twentieth	2	Knowledge And skill	Speaking Listening		Daily Quiz, report and , homework
Twenty first	2	Knowledge And skill	Speaking	Lecture	Daily Quiz, report and , homework
Twenty Second	2	Knowledge And skill	Grammar – numbers	Lecture	Daily Quiz, report and , homework
Twenty third	2	Knowledge And skill	Reading	Lecture	Daily Quiz, report and , homework
Twenty fourth	2	Knowledge And skill	How to deal with Daily situation	Lecture	
Twenty fifth	2	Knowledge And skill	Listening	Lecture	Daily Quiz, report and , homework
Twenty sixth	2	Knowledge And skill	Informal words	Lecture	Daily Quiz, report and , homework
Twenty seven	2	Knowledge And skill	Scientific words	Lecture	Daily Quiz, report and , homework
Twenty eighth	2	Knowledge And skill	English in biology (1)	Lecture	Daily Quiz, report and , homework
Twenty ninth	2	Knowledge And skill	English in biology (2)	Lecture	Daily Quiz, report and , homework
Thirty		Final exam			

11.Course Evaluation
Distributing the score out of 100 according to the tasks assigned to the student such as daily

preparation, daily oral, monthly, or written exams, reports .... etc	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	Cutting EDGE – intermediate Sara Cunningham Peter Moor
Recommended books and references (scientific journals, reports...)	Dictionary - biology
Electronic References, Websites	Internet

Course Description Form

1. Course Name: Plant physiology

2. Course Code: EDBI24F403

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: class / Classroom

2/2

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

2/2

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

Name: Mohammed Saeed Faisal. Email: dr.mohmad881@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of plant Physiology**

9. Teaching and Learning Strategies

Strategy	Lecture, Conversation and discussions , practical experiments ,reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Understanding structure and function	Introduction	lecture	Quiz and oral tests
2	2	Understanding structure and function	Water relations of plants	lecture	Quiz and oral tests
3	2	Understanding structure and function	Diffusion and osmosis	lecture	Quiz and oral tests
4	2	Understanding structure and	Water and osmotic	lecture	Quiz and oral tests

		function	potential		
5	2	Understanding structure and function	Stomata and transpiration 1	lecture	Quiz and oral tests
6	2	Understanding structure and function	Stomata and transpiration 2	lecture	Quiz and oral tests
7	2	Understanding structure and function	Photosynthesis 1	lecture	Quiz and oral tests
8	2	Understanding structure and function	Photosynthesis 2	lecture	Quiz and oral tests
9	2	Understanding structure and function	Light and dark reactions 1	lecture	Quiz and oral tests
10	2	Understanding structure and function	Light and dark reactions 2	lecture	Quiz and oral tests
11	2	Understanding structure and function	Photorespiration 1	lecture	Quiz and oral tests
12	2	Understanding structure and function	Photorespiration 2	lecture	Quiz and oral tests
13	2	Understanding structure and function	Kerbs cycle	lecture	Quiz and ora tests
14	2	Understanding structure and function	Transport by phloem	lecture	Quiz and ora tests
15	2		exam		
16	2		exam		
17	2	Understanding structure and function	Growth regulator and hormones Auxins	lecture	Quiz and oral tests
18	2	Understanding structure and function	Gibberellins and cytokinins	lecture	Quiz and oral tests

19	2	Understanding structure and function	Abscisic acid and ethylene	lecture	Quiz and oral tests
20	2	Understanding structure and function	phytochrome	lecture	Quiz and oral tests
21	2	Understanding structure and function	Plant movements	lecture	Quiz and oral tests
22	2	Understanding structure and function	Germination and seed dormancy	lecture	Quiz and oral tests
23	1		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)	Plant physiology, Faisal abdul-qader
Main references (sources)	Plant physiology , Dr. abdulazem kadim
Recommended books and references (scientific journals, reports...)	Plant physiology by Solisbury and Ross
Electronic References, Websites	https://study.com/academy/lesson/what-is-plant-physiology-definition-experiments.html

Course Description Form

1. Course Name: plant physiology

2. Course Code: **EDBI24F403**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

Prof. Dr. Hussein Saber Mohammed Ali dr.husseinbio76@uomosul.edu.iq
Asst.prof.Dr. Mira Ausama Ahmed mirausama@ uomosul.edu.iq
Asst.prof,. Farah Sobhy Salih Farah-sobhy@uomosul.edu.iq
Dr. DrRasha Fawzi Abdulrazaq Rasha.fawzi2016@ uomosul.edu.iq
Dr. Hanan Ameer Abdullah Hananaabdulla@ uomosul.edu.iq
Dr. Raghad Mohammed Abdulla raghad.mohammed@ uomosul.edu.iq

2/2

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

8. Course Objectives

Course Objectives	• **Knowing the basic principles of plant physiology** • **Knowing the practical applications of plant physiology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Knowledge and skill	General instructions	Lecture	quizzes
Second	2	Knowledge and skill	Definition of plant physiology	Lecture	quizzes
Third	2	Knowledge and skill	Devices used in experiments	Lecture	quizzes
Fourth	2	Knowledge and skill	Solutions	experiment	Quiz, report , homework
Fifth	2	Knowledge and skill	Methodsof expressing solutions	Problem solving	Homework
Sixth	2	Knowledge and skill	Properties of solutions	experiment	Quiz, report , homework

Seventh	2	Knowledge and skill	Types of solutions	Problem solving	Homework
Eighth	2	Knowledge and skill	Colloidal solutions	experiment	Quiz, report , homework
Nineth	2	Knowledge and skill	Characteristics of colloidal solutions	Problem solving	Homework
Tenth	2	Knowledge and skill	Cell installation	experimen	Quiz, report , homework
Eleventh	2	Knowledge and skill	Diffusion	experimen	Quiz, report , homework
Twelfth	2	Knowledge and skill	osmosis	Problem solving	Homework
Thirteen	2	Knowledge and skill	Transpiration	Lecture	Quiz, and homework
Fourteenth	2	Knowledge and skill	Imbibition	Problem solving	Homework
Fifteenth	1	Knowledge and s	plasmolysi		
Sixteenth	2	Knowledge and skill	Estimating the water content of plant organs	lecture	Quiz, report , homework
Seventeenth	2	Knowledge and skill	Transpiration	lecture	Quizzes
Eighteenth	2	Knowledge and skill	Transport of water and mineral salts in plants	Problem solving	Quiz, and homework
Nineteenth	2	Knowledge and skill	Transport of nutrients in plants	Lecture	Quizzes
Twentieth	2	Knowledge and skill	Mineral nutrition	Problem solving	homework
Twenty first	2	Knowledge and skill	Sand farms	Lecture	Quiz
Twenty second	2	Knowledge and skill	Hydroponic farms	Problem solving	homework
Twenty third	2	Knowledge and skill	Photosynthetic pigments	Lecture	Quiz
Twenty fourth	2	Knowledge and skill	chlorophyll	Problem solving	homework
Twenty fifth	2	Knowledge and skill	Carotene	lecture	Quiz
Twenty sixth	2	Knowledge and skill	Xanthophyll	Problem solving	homework
Twenty seventh	2	Knowledge and skill	Anthocyanins	Lecture	Quiz
Twenty eighth	2	Knowledge and skill	the wood	lecture	Quiz
Twenty nineth	2	Knowledge and skill	Cortex	Lecture	Quiz
Thirtieth	1	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)	Plant physiology by Dr. Faiza Mahmoud Ali
Main references (sources)	Basics of plant physiology by Dr. Bassam Taha Yassinhouse
Recommended books and references (scientific journals, reports...)	Plant physiology ,Development and Metabolism. Satish C.Bhala and Manju A. Lal . 2023.
Electronic References, Websites	

Course Description Form

1. Course Name: Theoretical Parasitology

2. Course Code: **EDBI24F402**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture, Classroom

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

2/2

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

Prof. Dr. Asmaa Abdulaziz Ali
dr.asmaa_abdulaziz@uomosul.edu.iq
Assis. Prof. Ibrahim Faris Ali
ibrahimfali@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Introducing all Phyla of parasites in details.** • **Studying the different parasites concerning: Morphology, symptoms, pathogenesis, life cycle, treatment, and prevention**

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, talk and discussions, Quiz.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Choosing appropriate organisms for study	Introduction of parasites	Lecture	quiz
Second	2	Rhizopoda	*Entamoeba histolytic* *E. coli*	Lecture	Quiz
Third	2	Flagellates	Intestinal and atrial flagellates	Lecture	Quiz
Fourth	2	Flagellates	Tissue and blood	Lecture	Quiz

			flagellates		
Fifth	2	Ciliates	*Balantidium coli*	Lecture	Quiz
Sixth	2	Sporozoa	Intestinal sporozoa	Lecture	Quiz
Seventh	2	Sporozoa	Blood and tissue Sporozoa	Lecture	Quiz
Eighth	2	Introduction of Helminthes	Types of Helminthes	Lecture	Quiz
Nineth	2	Trematodes	Intestinal Trematodes	Lecture	Quiz
Tenth	2	Trematodes	Hepatic Trematodes	Lecture	Quiz
Eleventh	2	Trematodes	Pulmonary Trematod	Lecture	Quiz
Twelfth	2	Trematodes	Blood Trematodes	Lecture	Quiz
Thirteen	2	Introduction of Cestodes	Types of Cestodes	Lecture	Quiz
Fourteenth	2	Cestodes	Types of Cestodes	Lecture	Quiz
Fifteenth	1	Exam			
Sixteenth	2	Pseudophyllidea	*Diphyllobothrium latum*	Lecture	Quiz
Seventeenth	2	Cyclophyllidea	Cyclophyllidea (Acetabula)	Lecture	Quiz
Eighteenth	2	Cyclophyllidea (Taeniidae)	*Taenia saginata & T. solium*	Lecture	Quiz
Nineteenth	2	Cyclophyllidea (Taeniidae)	*Echinococcus granulosus & E. multilocularis*	Lecture	Quiz
Twentieth	2	Cyclophyllidea (Hymenolepididae)	*Hymenolepis nana & H. diminuta*	Lecture	Quiz
Twenty first	2	Cyclophyllidea (Dilepidiidae)	*Dipylidium caninum*	Lecture	Quiz
Twenty second	2	Introduction of Nematodes	Types of Nematodes	Lecture	Quiz
Twenty thir	2	Intestinal Nematodes	Types of intestinal Trematodes	Lecture	Quiz
Twenty fourth	2	Intestinal Nematodes	*Ascaris lumbricoides & Enterobius vermicularis*	Lecture	Quiz
Twenty fifth	2	Intestinal Nematodes	*Trichuris trichura & Trichinella spiralis*	Lecture	Quiz
Twenty sixth	2	Nematodes (Ancylostmatidae)	*Ancylostoma duodenale & Necator americanus*	Lecture	Quiz
Twenty seventh	2	Nematodes (Strongylidae)	*Strongyloides stercoralis*	Lecture	Quiz

Twenty eighth	2	Tissue & Blood Nematodes	*Wuchereria bancrofti & Loa loa*	Lecture	Quiz
Twenty ninth	2	Tissue Nematodes	*Dracunculus medinensis & Onchocerca volvulus*	Lecture	Quiz
Thirtieth	1	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)	Medical Parasitology a text book Rohela Mahmud, Yvonne Ai Lian Lim, Amirah Amir, Springer 2017.
Main references (sources)	Medical Parasitology, by Mridul Malakar, Jitendra Sharma, LAP LAMBERT Academic Publishing (June 4, 2019).
Recommended books and references (scientific journals, reports...)	Essentials of Medical parasitology, by Apurba S. sastry & Sandhya Bhat, Jaypee Brothers Medical Publishers Pvt. Ltd.; 2nd ed. edition (October 31, 2018). Experimental Parasitology (Journal)
Electronic References, Websites	https://ww.microbiologybook.org/book/parasit-sta.htm

Course Description Form

1. Course Name: Practical Parasitology

2. Course Code: **EDBI24F402**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

noor2005@uomosul.edu.iq Assis.Prof. Hanan Sdeeq Sadoon
omaimaaadil@uomosul.edu.iq Dr. Omaima Adil Najm
suhyy1974@uomosul.edu.iq Dr. Suhayla Yakoub Yousif
zeena.dhubyan@uomosul.edu.iq Zeena Dhubyan Mohammed Zeki
rullaalniemi@uomosul.edu.iq Rulla Alniemi

8. Course Objectives

Course Objectives	• **Introducing all Phyla of parasites in details.** • **Microscopic examination and diagnosis of parasites.**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture, talk and discussions, problem solving, reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Choosing appropriate organisms for study	Introduction of parasites	Lecture	quiz
Second	2	Rhizopoda	*Entamoeba histolytic* *E. coli*	Lecture &Diagnosis	Quiz
Third	2	Flagellates	Intestinal and atrial flagellates	Lecture and diagnosis	Quiz
Fourth	2	Flagellates	Tissue and blood flagellates	Lecture and diagnosis	Quiz

Fifth	2	Ciliates	*Balantidium coli*	Lecture and diagnosis	Quiz
Sixth	2	Sporozoa	Intestinal sporozoa	Lecture and diagnosis	Quiz
Seventh	2	Sporozoa	Blood and tissue Sporozoa	Lecture and diagnosis	Quiz
Eighth	2	Introduction of Helminthes	Types of Helminthes	Lecture	Quiz
Nineth	2	Trematodes	Intestinal Trematodes	Lecture and diagnosis	Quiz
Tenth	2	Trematodes	Hepatic Trematodes	Lecture and diagnosis	Quiz
Eleventh	2	Trematodes	Pulmonary Trematod	Lecture and diagnosis t	Quiz
Twelfth	2	Trematodes	Blood Trematodes	Lecture and diagnosis	Quiz
Thirteen	2	Introduction of Cestodes	Types of Cestodes	Lecture	Quiz
Fourteenth	2	Cestodes	Types of Cestodes	Lecture and diagnosis	Quiz
Fifteenth	1	Exam			
Sixteenth	2	Pseudophyllidea	*Diphyllobothrium latum*	Lecture and diagnosis	Quiz
Seventeenth	2	Cyclophyllidea	Cyclophyllidea (Acetabula)	Lecture and diagnosis	Quiz
Eighteenth	2	Cyclophyllidea (Taeniidae)	*Taenia saginata & T. solium*	Lecture and diagnosis	Quiz
Nineteenth	2	Cyclophyllidea (Taeniidae)	*Echinococcus granulosus & E. multilocularis*	Lecture and diagnosis	Quiz
Twentieth	2	Cyclophyllidea (Hymenolepididae)	*Hymenolepis nana & H. diminuta*	Lecture and diagnosis	Quiz
Twenty first	2	Cyclophyllidea (Dilepidiidae)	*Dipylidium caninum*	Lecture and diagnosis	Quiz
Twenty second	2	Introduction of Nematodes	Types of Nematodes	Lecture	Quiz
Twenty thir	2	Intestinal Nematodes	Types of intestinal Trematodes	Lecture	Quiz
Twenty fourth	2	Intestinal Nematodes	*Ascaris lumbricoides & Enterobius vermicularis*	Lecture and diagnosis	Quiz
Twenty fifth	2	Intestinal Nematodes	*Trichuris trichura & Trichinella spiralis*	Lecture and diagnosis	Quiz
Twenty sixth	2	Nematodes (Ancylostmatidae)	*Ancylostoma duodenale & Necator americanus*	Lecture and diagnosis	Quiz
Twenty seventh	2	Nematodes (Strongylidae)	*Strongyloides stercoralis*	Lecture and diagnosis	Quiz

Twenty eighth	2	Tissue & Blood Nematodes	*Wuchereria bancrofti & Loa loa*	Lecture and diagnosis	Quiz
Twenty ninth	2	Tissue Nematodes	*Dracunculus medinensis & Onchocerca volvulus*	Lecture and diagnosis	Quiz
Thirtieth	1	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)	Medical Parasitology a text book Rohela Mahmud, Yvonne Ai Lian Lim, Amirah Amir, Springer 2017.
Main references (sources)	Medical Parasitology, by Mridul Malakar, Jitendra Sharma, LAP LAMBERT Academic Publishing (June 4, 2019).
Recommended books and references (scientific journals, reports...)	Essentials of Medical parasitology, by Apurba S. sastry & Sandhya Bhat, Jaypee Brothers Medical Publishers Pvt. Ltd.; 2nd ed. edition (October 31, 2018). Experimental Parasitology (Journal)
Electronic References, Websites	https://ww.microbiologybook.org/book/parasit-sta.htm

Course Description Form

1. Course Name: Animal Physiology

2. Course Code: **EDBI24F403**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Assistant Prof. Dr. Banan Rakan Dubdoob
Assistant Prof. Dr. Amal Abdulilah Alkshab

Email: dr.banandabdoub@uomosul.edu.iq
amal.biology@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Animal Physiolog** • **Knowing the practical applications of Animal physiology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , discussions and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Giving an introductory introduction to the functions of organs	Introduction to physiology and its general principles	Lecture	quizzes
Second	2	Identify the components of the nervous system and its functions	Physiology of the nervous system - the organization of electrical signals	Lecture	Quizzes

			and activity		
Third	2	Identify the components of the nervous system, its functions, and neurotransmitters	Physiology of the nervous system/action potential and nerv properties - the precise structure o synapses - neurotransmitters	Lecture	Quizzes
Fourth	2	Identify the components of the muscular system, its functions, and the precise structures of the muscles	Physiology of the muscular system/ty of muscles - fine structures of muscl cells - chemical properties of muscl	experiment	, homework
Fifth	2	Identifying how heat is produced in the muscle - oxygen deficiency - fatigue	Physiology of the muscular system/sources of energy in the muscle, the relationship between stimulus and response - heat production in the muscle - oxygen deficit - fatigue	**Problem solving**	**Homework**
Sixth	2	Identifying the components of the circulatory system and the heart - the pacemaker - electrical accidents in the heart - transmission of the excitation wave	Circulatory system/heart - pacemaker - electrical accidents in the heart - transmission of excitation wave	**experiment**	**homework**
Seventh	2	Identifying blood pressure and factors affecting it - nervous control - blood groups - Rh factor - lymphatic system - lymph nodes and their functions.	Circulatory physiology/blood pressure and factors affecting it - nervous control - blood groups - Rh factor - lymphatic system - lymph nodes and their functions	**Problem solving**	**Homework**
Eighth	2	Identify the components of the digestive system and digestive enzymes	Physiology of the digestive system/digestive system - accessory glands	**experiment**	**homework**

			- digestion in the stomach - digestive enzymes in the stomach		
Nineth	2	Identifying intestinal digestion - the pancreas and its secretions - absorption - excretion	Physiology of the digestive system/intestinal digestion - the pancreas and its secretions - absorption - excretion	**Problem solving**	**Homework**
Tenth	2	Learn how to regulate body fluids	The kidneys and the excretory system / regulation of body fluids - kidney functions - regulation of urine volume	**experiment**	**Quiz**
Eleventh	2	Identify the endocr glands in humans	Endocrine glands hormones - regulat the formation secretion of hormo - the pituitary glan its hormones - thyroid gland - hormones	**experiment**	**, homework**
Twelfth	2	Identifying the parathyroid gland - its hormones, the pineal gland - the thymus gland	Endocrine glands / parathyroid gland - its hormones, pineal gland - thymus gland	**Problem solving**	**Homework**
Thirteen	2	Learn about the endocrine/adrenal glands – sex glands and sex hormones	Endocrine glands/adrenal glands – sex glands and sex hormones	**Lecture**	**Quiz, and homework**
Fourteenth	2	Identify the physiology of the reproductive system	Physiology of the reproductive system/male and female reproductive systems - stages of egg and sperm formation - effect of hormones - fertilization and pregnancy	**Problem solving**	**Homework**

Fifteenth	2	Learn about physiology of breathin	Respirator system		
Sixteenth	1	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)	Animal Physiology / Written by: Dr. Youssef Muhammad Arab Dr. Sabah Nasser Al-Alwaji Dr. Farouk Naji Karmana Dr.. Marwan Abdel Rahim Yas
Main references (sources)	Physiology book written by Linda S. Costanzo2020 Commonwealth University, Tokyo. Functional anatomy and physiology, written by: Dr. Shetiwi Al-Abdullah. Jordan
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: animal physiology\practical

2. Course Code: **EDBI24F405**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory, Classroom

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

4/4

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

Name: Tamara Waleed Jihad Email: tamara.jihad@uomosul.edu.iq
Dr. Huda sabir khalaf
Rulaa saedallah najm
Maya Ibrahim
Zeina dhabian

8. Course Objectives

Course Objectives	• Knowing the basic principles of animal physiology • Knowing the practical applications of animal physiology

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lectures, talks and discussions, problem-solving, performing practical experiments, reports, and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	How to use a Kymograph	Learn about and use device keys	Lecture	quizzes
Second	2	Preparation of laboratory frogs	Anatomy of the muscle and nerv of the frog	Lecture	Reports preparation
Third	2	Simple muscle twitch (S.M.T)	Contraction curve analysis ar learn about its three phases	Lecture	Quizzes and reports

Fourth	2	Stair-case phenomenon	The relationship between the strength of the stimulus and the magnitude of Response	Practical experience	Reports preparation
Fifth	2	Tetanus Phenomenon	Identify both complete and deficient muscle tetany,	Problem-solving	Reports preparation
Sixth	2	Adding two consecutive stimuli below the minimum	Muscle response is a weak contraction	Practical experience	Reports preparation
Seventh	2	Adding two consecutive stimuli below the maximum	The effect of repeated stimulation on muscle contraction	Practical experience	Reports preparation
Eighth	2	Measurement of the total time of blood clotting	Determine the time required for blood clotting.	Practical experience	Quizzes and reports
Nineth	2	Measuring the bleeding time	Knowledge of platelet efficiency in terms of quantity and function	Practical experience	Quizzes and reports
Tenth	2	Determination of hemoglobin in the blood	Finds the rate of hemoglobin in the blood	Practical experience	Reports preparation
Eleventh	2	The erythrocyte sedimentation rate	ESR	Practical experience	Quizzes and reports
Twelfth	2	find the rate of erythrocyte congestion	PCV	Practical experience	Quizzes and reports
Thirteen	2	Types of blood group	Find and identify blood groups	Practical experience	Reports preparation
Fourteenth	2	blood pressure	Finding the rate of blood pressure in humans	Practical experience	quizzes
Fifteenth	1		Exam		
Sixteenth	1		Exam		

Seventeenth	2	Diabetes mellitus	Knowledge of sugar percentage in the blood	Practical experience	quizzes
Eighteenth	2	Effect of fatigue on (S.M.T)	Muscle exhaustion and lack of response to stimulus	Practical experience	Reports preparation
Nineteenth	application				
Twentieth	application				
Twenty first	application				
Twenty second	application				
Twenty third	application				
Twenty fourth	application				
Twenty-fifth	2	Red blood cell count	Find the total number of RBC	Practical experience	Reports preparation
Twenty sixth	2	White blood cell count	Find the total number of WBC	Practical experience	Quizzes and reports
Twenty seventh	2	Blood haemolysis	Determination of osmotic resistance to red blood cells	Practical experience	Reports preparation
Twenty eighth	2	Differential leucocyte count	Preparing bloody movies to find out the WBC account	Practical experience	Quizzes and reports
Twenty nineth	1		Final practical exam		
Thirtieth	1		Final practical 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)	Andrew ,B.L.(1972).Experimental physiologyEdinburgh Churchill Livingstone
Main references (sources)	Guyton and hall text book of Medical Physiology.2020.14th ed.canada.
Recommended books and references (scientific journals, reports...)	Guyton A.C. and Hall j.E.(2007).Textbook of medical physiology. U.S.A
Electronic References, Websites	https://Journals. Physiology.org

Course Description Form

1. Course Name: Theortical Microbiology

2. Course Code: EDBI24F401

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: class / Classroom

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

4/ 6

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

Name: Assist Prof. Jassim Fathi Ali, Email: jassim.fatehi@uohamdaniya.edu.iq
Assist . Dr. Mohammed Abdulla Mahmood

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Microbiology** • **Studying bacterial cell contents in addition to nomenclature principles and pathogenic and nonpathogenic bacterial classification** • **Studying vital activities of bacteria , their physiology and method of culture**

9. Teaching and Learning Strategies

Strategy	Lecture, Conversation and discussions , practical experiments ,reports and homework, practical experiments , problem solving

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to microbiology and its development	Introduction about microbiology, lab. Tools and microscope	lecture	Quizzes
2	2	Identifying basics of scientific naming	Bacterial scientific naming, basics of nomenclature	lecture	Quizzes
3	2	Types of bacterial cells and cell contents	Cell structure of bacteria and cell contents	lecture	Quizzes

4	2	Studying spores and classification on location	Spores and bacterial nutrition	lecture	Quizzes
5	2	Knowing bacterial growth and division	bacterial growth and division	lecture	Quizzes
6	2	Studying growth curve of bacteria and factors affecting bacterial growth	growth curve of bacteria and factors affecting bacterial growth	lecture	Quizzes
7	2	Knowing methods used in measuring growth of bacteria in lab.	methods used in measuring growth of bacteria in lab.	lecture	Quizzes
8	2	Knowing typing of growth media	typing of growth media	lecture	Quizzes
9	2	Studying energy and carbon sources used by bacteria and basis of classification	Bacterial types according to energy and carbon sources	lecture	Quizzes
10	2	Studying methods of culturing bacteria and type of resulting colonies	Culturing microbes and methods of growth measurement	lecture	Quizzes
11	2	Knowing lab. Methods of bacterial classification	Lab. Methods in bacterial classification	lecture	Quizzes
12	2	Knowing the physiological processes inside bacterial cells	Microbial physiology	lecture	Quizzes
13	2	Understanding Kerbs cycle and energy production and storage in chemical compounds	Studying Krebs cycle and energy compounds resulting from oxidation processes	lecture	Quizzes
14	2	Classification of bacteria according to oxygen consumption	Studying bacterial types aerobic and anaerobic	lecture	Quizzes
15	1		exam		

16		Studying genetic material in bacteria	Genetic material bacteria	lecture	Homework and reports
17		Studying genetic material in bacteria	Genetic material in bacteria	lecture	Quizzes
18			Application in schools	lecture	Quizzes
19			Application in school		
20			Application in school		
21			Application in school		
22			Application in schools		
23			Application in schools		
24	2	Studying how to control microbes	Controlling microbes and antibiotic resistance	lecture	Homework
25	2	Microorganisms in soil and water	Microbes in soil and water	lecture	Homework
26	2	Bacterial types present in food	Bacteria in food and preservation methods	lecture	Homework
27	2	Knowing how to perform biochemical tests	biochemical tests	lecture	Homework
28	2	Studding Viruses types and structure	Viruses types and structure	lecture	Homework
29	2	Identifying Relationship between microorganisms and human	Relationship between microorganisms and human	lecture	Quizzes
30	1		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)	Aljobory M.M.1990. Medical microbiology. Dar al-kutub publishing house, Iraq Al-Shuhaib M.B.S. , Al-saady A. H. Zedan H.K. 2013. Principles of Molecular genetics, Coolege of Science, University of Babylon
Main references (sources)	Wiely, J.M.; Sherwood L.M. and Woolverton, J.

	2013. Prescott s Microbiology , 9th ed. MgGraw Hill international
Recommended books and references (scientific journals, reports...)	Cappucino J. and Sherman, N. 2010. Microbiology : A laboratory manual, 9th ed. Pearson Education lmt.
Electronic References, Websites	https://ahpsr.who.int/publications/i/item lobal-action-plan-on-antimicrobial-resistan

Course Description Form

1. Course Name: Practical Microbiology

2. Course Code: EDBI24F401

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Dr. Dhuha Jasem Mohammed
Email: dhu.jasem@uomosul.edu.iq
Dr. Rana Khalid
Dr. Nawar Tallal
Dr. Mohammed Abd -Elaa

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Microbiology** • **Knowing the practical applications of Microbiology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	
first	2	Knowlegde and Ability	Microscope	Practical experiment	quizzes
Second	2	Knowlegde and Ability	Sterilization	Practical experiment	quizzes
Third	2	Knowlegde and Ability	Phisic. Ster.	Practical experiment	quizzes
Fourth	2	Knowlegde and Ability	Chemical Ster.	Practical experiment	Quiz, report , homework
Fifth	2	Knowlegde	Micanical Ster.	Practical experiment	Homework

		and Ability			
Sixth	2	Knowlegde and Ability	Bacterial Media	Practical experiment	Quiz, report , homework
Seventh	2	Knowlegde and Ability	Bacterial shape	Practical experiment	Homework
Eighth	2	Knowlegde and Ability	Culture of Bacteria	Practical experiment	Quiz, report , homework
Nineth	2	Knowlegde and Ability	Type of culture	Practical experiment	Homework
Tenth	2	Knowlegde and Ability	Growth Shape	Practical experiment	Quiz, repor homework
Eleventh	2	Knowlegde a Ability	Bacterial stain	Practical experiment	Quiz, repor homework
Twelfth	2	Knowlegde and Ability	Simple stain	Practical experiment	Homework
Thirteen	2	Knowlegde and Ability	Gram stain	Practical experiment	Quiz, and homework
Fourteenth	2	Knowlegde and Ability	Spore stain	Practical experiment	Homework
Fifteenth	1	Knowleg and Abil	Capsule sta	Practical experiment	
Sixteenth	2	Knowlegde and Ability	Diplococcus pneumonia	Practical experiment	Quiz, report , homework
Seventeenth	2	Knowlegde and Ability	T.B stain	Practical experiment	Quizzes
Eighteenth	2	Knowlegde and Ability	Hnging drope	Practical experiment	Quiz, and homework
Nineteenth	2	Knowlegde and Ability	Antibiotic	Practical experiment	Quizzes
Twentieth	2	Knowlegde and Ability	Sensitivity test	Practical experiment	homework
Twenty first	2	Knowlegde and Ability	Biochemical test	Practical experiment	Quiz
Twenty second	2	Knowlegde and Ability	Water Microbiology	Practical experiment	homework
Twenty thir	2	Knowlegde and Ability	Water pollution test	Practical experiment	Quiz
Twenty fourth	2	Knowlegde and Ability	Soil Microbiology	Practical experiment	homework
Twenty fifth	2	Knowlegde and Ability	Bacillus anthrax	Practical experiment	Quiz
Twenty sixth	2	Knowlegde and Ability	Actinomycetes	Practical experiment	homework
Twenty seventh	2	Knowlegde and Ability	Milk Microbiology	Lecture	Quiz

Twenty eighth	2	Practical application of Molecular genetics	Aplications	lecture	Quiz
Twenty nineth	2	Understanding cytoplasmic inheritance	Scientific film	Lecture	Quiz
Thirtieth	1	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 any)	Malzama of Microbiology Dr. Abd-Alrazak khider Dr. Khider Dr. Dhuha Jasem Mohammed
Main references (sources)	**Benson (2008) , Microbiology Applications , Laboratory Manual in General Microbiology .**
Recommended books and references (scientific journals, reports...)	**الجبوري ، محيميد مد الله ، (1995) ، علم البكتريا الطبية ، وزارة التعليم العالي والبحث العلمي ، جامعة الموصل .**
Electronic References, Websites	https://www.cambridge.org/us/universitypress/reference/

Course Description Form

1. Course Name: Immunology

2. Course Code: **EDBI24F407**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lectures , Classroom

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

3/5

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

Name: Assistant Prof. Dr. Hasan Faisal Hussein Kahya
Email: dr.hasankahya@uomosul.edu.iq
Name: Assistant Prof. Dr Bushra Dalli Hamad Shlla
Email: bdhs56@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Providing students with the basic concepts of immunology • Introducing the students to the body'simmune system and its basic elements • Providing the students with laboratory skills on how conduct serological and immunological tests to diagnose diseases • Introducing the students to some immune diseases and their impact on the body health

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Knowledge and skills	Introduction to immunology and history of immnuology	Lecture	Quizzes
Second	2	Knowledge and skills	Types of immunity, innate immunity	Lecture	Quizzes
Third	2	Knowledge and skills	Cellular and non-cellular components of innate immunity	Lecture	Quizzes
Fourth	2	Knowledge and skills	Immune receptors and phagocytosis	Lecture	Quizzes
Fifth	2	Knowledge and skills	Immune organs and lymph tissues	Lecture	Quizzes
Sixth	2	Knowledge and skills	Antigens: types of antigens	Lecture	Quizzes

Seventh	2	Knowledge and skills	Antibodies: types, characterization of antibodies	Lecture	Quizzes
Eighth	2	Knowledge and skills	Complement system: pathways of complement system	Lecture	Quizzes
Nineth	2	Knowledge and skills	Immune modulation and immune response	Lecture	Quizzes
Tenth	2	Knowledge and skills	Acquired immunity: types and components	Lecture	Quizzes
Eleventh	2	Knowledge and skills	Cellular components of acquired immunoty	Lecture	Quizzes
Twelfth	2	Knowledge and skills	Humoral immunity	Lecture	Quizzes
Thirteen	2	Knowledge and skills	Cell mediated immunity	Lecture	Quizzes
Fourteenth	2	Knowledge and skills	Antigen processing and presentation	Lecture	Quizzes
Fifteenth	1	Knowledge and skills	Major histocompatibility complex	Lecture	Quizzes
Sixteenth	2	Knowledge and skills	Immune rejection of transplanted orqans	Lecture	Quizzes
Seventeenth	2	Knowledge and skills	Hypersensitivity reactions	Lecture	Quizzes
Eighteenth	2	Knowledge and skills	Immune tolerance and autoimmune diseases	Lecture	Quizzes
Nineteenth	2	Knowledge and skills	Inflammation: types and causes	Lecture	Quizzes
Twentieth	2	Knowledge and skills	Immune response against microbial infections	Lecture	Quizzes
Twenty first	2	Knowledge and skills	Immunization: types and impacts	Lecture	Quizzes
Twenty second	2	Knowledge and skills	Clinical immunology: definition and types	Lecture	Quizzes
Twenty third	2	Knowledge and skills	Immune response against bacterial infections	Lecture	Quizzes
Twenty fourth	2	Knowledge and skills	Immune response against viral infections	Lecture	Quizzes
Twenty fifth	2	General review			

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)	اساسيات علم المناعة 2021 تأليف احمد علي حسين\ مؤسسة دار الصادق الثقافية
Main references (sources)	Basic Immunology, Function and Disorders of the Immune System/ Abul, K. Abbas; Andrew H. Lightman; Shiv Pillai
Recommended books and references (scientific journals, reports...)	Immunology, A short Course 2015, 7th edition Richard Coico, Geoffrey Sunshine
Electronic References, Websites	https://onlinelearning.hms.harvard.edu/hmx/courses/immunology/

Course Description Form

1. Course Name: Practical immunity

2. Course Code: EDBI24F407

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

2/2

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

Name: Dr. Dhuha Jasem Mohammed
Email: dhu.jasem@uomosul.edu.iq
Dr. Rana Khalid
MSc. Alla Taha
MSc. Zahra Hazem

8. Course Objectives

Course Objectives	• **Knowing the basic principles of immunity** • **Knowing the practical applications of immunity**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , performing practical experiments , reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	2	Agglutination Test	Serological reactions	Practical experiment	quizzes
Second	2	Agglutination Test	Types of antigens	Practical experiment	quizzes
Third	2	Agglutination Test	Latex agglutinatior	Practical experiment	quizzes
Fourth	2	Agglutination Test	Typhoied diag.	Practical experiment	Quiz, report , homework
Fifth	2	Agglutination Test	Serological diag.	Practical experiment	Homework

Sixth	2	Agglutination Test	Widal test	Practical experiment	Quiz, report , homework
Seventh	2	Agglutination Test	Brucella fever	Practical experiment	Homework
Eighth	2	Agglutination Test	Serological Brucella diag.	Practical experiment	Quiz, report , homework
Nineth	2	Agglutination Test	blood	Practical experiment	Homework
Tenth	2	Agglutination Test	WBC COUNT	Practical experiment	Quiz, report homework
Eleventh	2	EXAM		Practical experiment	Quiz, report homework
Twelfth	2	Agglutination Test	Problem solving	Problem solving	Homework
Thirteen	2	Agglutination Test	Blood Group	Lecture	Quiz, and homework
Fourteenth	2	Agglutination Test	RH factor	Practical experiment	Homework
Fifteenth	1	Exam			
Sixteenth	2	Agglutination Test	ABO	Practical experiment	Quiz, report , homework
Seventeenth	2	Agglutination Test	RF Test	Practical experiment	Quizzes
Eighteenth	2	Agglutination Test	Problem solving	Practical experiment	Quiz, and homework
Nineteenth	2	Agglutination Test	Rumatoid fever	Practical experiment	Quizzes
Twentieth	2	Agglutination Test	ESR test	Practical experiment	homework
Twenty first	2	Agglutination Test	ASOT	Lecture	Quiz
Twenty second	2	Agglutination Test	Allergy	Lecture	Lecture
Twenty third	2	Agglutination Test	Coombes test	Lecture	Quiz
Twenty fourth	2	Agglutination Test	complement	Lecture	homework
Twenty fifth	2	Agglutination Test	ELISA test	lecture	Quiz
Twenty sixth	2	Agglutination Test	autoimmunodiseas	Lecture	homework
Twenty seventh	2	Agglutination Test transfer	Scientific film	Lecture	Quiz
Twenty eighth	2		EXAM		Quiz
Twenty nineth	2		applications		Quiz
Thirtieth	1	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)	Malzma practical immunity by Dr. Dhuha Jasem Mohammed Dr.Rana Khalid
Main references (sources)	Kumar, A. 2013, Text Book of Immunology 1st edition, published by TERI New Delhi India. Punt, J. ; Stranford ,S. A. and Jones , P. P. 2019 , Kuby Immunology 8th edition , printed in the USA.
Recommended books and references (scientific journals, reports...)	, https://www.ncbi.nlm.nih.gov/books/NBK26830
Electronic References, Websites	, https://www.ncbi.nlm.nih.gov/books/NBK26830

Course Description Form

1. Course Name: Measurement and evaluation

2. Course Code:- EDB123F406---

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Lecture, class discussion, electronic classes , Classroom

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

2/2

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

Name: Prof. Dr Wafaa Mahmood
Email: dr.wafamahmood@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Identify the principles of measurement and evaluation** • **The student learns to take various tests in biology** • **The student builds a table of specifications** • **The student must meet the conditions for a good test** • **To achieve transactions of ease and difficulty**

9. Teaching and Learning Strategies

Strategy	Lecture, class discussion, electronic classes, talk and discussions, problem solving , , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Learn about the basic concepts of measurement and evaluation	Basic concepts	Lecture	reports and homework
Second	2	Identify the functions of achievement tests	Chapter II	Lecture	quizzes
Third	2	The relationship between measurement and testing and evaluation	Types educational evaluation	Lecture	Oral question

Fourth	2	Types of achievement tests	Oral exams	Lecture	Quiz, report , homework
Fifth	2	Written tests	Written tests	Lecture	Homework
Sixth	2	Performance tests	Note card	Lecture	Quiz, report , homework
Seventh	2	Doing types of tests	Practical application to types of tests	Lecture	Homework
Eighth	2	Educational objectives	Making cognitive goals	Lecture	Quiz, report , homework
Nineth	2	Specification table	Make a table of specifications	Lecture	Homework
Tenth	2	How to formulate question paragraphs	Make questions	Lecture	Quiz, report homework
Eleventh	2	A test based on the subje	A test on the subject	Lecture	Quiz, report homework
Twelfth	2	Conditions for a good	test Conditions for a good test	Lecture and discussion	Homework
Thirteen	2	Honesty and its types	Honesty and its types	Lecture, daily exams and homework	daily exams and homework
Fourteenth	2	Reliability and its types	Reliability and its types	Lecture	Homework
Fifteenth	2	Objectivity ar comprehensiven	Objectivity a comprehensive ss	Lecture Daily	exams
Sixteenth	2	Psychometric properties	Psychometric properties	lecture	, daily exams and homework
Seventeenth	2	Ease and difficulty Extracting	the difficulty factor using equations	Lecture	Solving problems
Eighteenth	2	Discrimination coefficient,	extraction of discrimination coefficient,	lecture,	Quiz problem solving,,
Nineteenth	2	Daily dose of the material	Daily dose of the material	Lecture	Quizzes
Twentieth	2	Setting tests with correct conditions,	applied training	lecture,	student discussion and interaction with the scientific material

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 textbo	

(curricular books, any)	
Main referen (sources)	Al-Dulaimi, Ihsan Aliwi and Adnan Mahmoud Al-Mahdawi: Measurement and evaluation in Educational Process, 2005, Iraq
Recommended books and references (scientific journals, reports...)	Measurement and evaluation in the teaching process, 2006, Allam, Salah El-Din Educational Measurement and Evaluation, 2019, Asaad Hussein Atwan, and Abu Shaaban
Electronic Referenc Websites	https:// Qorrectassess.com /

Course Description Form

1. Course Name: English

2. Course Code: **EDBI24F408**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Laboratory , Classroom

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

1

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

Name: Omar Abdul Azeez Alhamid
Email: o.alzuhairi3@uomosul.edu.iq

8. Course Objectives

Course Objectives	Learn the basic principles of the English language

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, talk and discussions, problem-solving, performing face-to-face conversations, reports and homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	1	Considerate Parts of Speech	1. Grammar Basics: Understanding Parts of Speech	Lecture	quizzes
Second	1	Building Vocabulary	2. Building Vocabulary: Strategies for Effective Learning	Lecture	quizzes
Third	1	Forming Clear and Coherent Sentences	3. Sentence Structure: Forming Clear and Coherent Sentences	Lecture	quizzes

Fourth	1	learning Past, Present, and Future	4. Verb Tenses: Mastering Past, Present, and Future	Lecture	Quiz, report , homework
Fifth	1	5. Pronunciation Practice: Perfecting English Sounds	Perfecting English Sounds	Lecture	Homework
Sixth	1	6. Reading Comprehension: Strategies for Understanding Texts	Writing Skills	Lecture	Quiz, report , homework
Seventh	1	7. Writing Skills: Crafting Engaging Essays and Reports	Crafting Engaging Essays and Reports	Lecture	Homework
Eighth	1	8. Listening Comprehension: Enhancing Understanding of Spoken English	Understanding of Spoken English	Lecture	Quiz, report, homework
Nineth	1	9. Speaking Fluency: Improving Communication Skills	Improving Communication Skills	Lecture	Homework
Tenth	1	10. Punctuation Rules: Using Commas, Periods, and More Correctly	Using Commas, Periods, and More Correctly	Lecture	Quiz, report homework
Eleventh	1	11. Adjectives a Adverbs: Describ with Precision	Describing w Precision	Lecture	Quiz, report homework
Twelfth	1	12. Reading Comprehension: Prepositions and Conjunctions: Connecting Ideas in English	Prepositions and Conjunctions: Connecting Ideas in English	Lecture	Homework
Thirteen	1	13. Subject-Verb Agreement: Ensuring Proper Grammar in Sentences	Certifying Proper Grammar in Sentences	Lecture	Quiz, and homework
Fourteenth	1	14. Articles and Determiners: Understanding Usage in English	Articles and Determiners: Thoughtful Procedure in English	Lecture	Homework
Fifteenth	1	Exam	Communicat Hypothetical Situation	Lectu	
Sixteenth	1	15. Conditional Sentences: Expressing Hypothetical	Perfecting English Sounds	Lecture	Quiz, report , homework

		Situation			
Seventeenth	2	Listening Comprehension: Enhancing Understanding of Spoken English	Writing Skills	Lecture	Quizzes
Eighteenth	2	Listening Comprehension: Enhancing Understanding of Spoken English	Enhancing Understanding of Spoken English	Lecture	Quiz, and homework
Thirtieth	1	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)	English grammar in use Headway intermediate
Main references (sources)	1 "Practical English Usage" by Michael Swan 2. "Grammar in Use" by Martin Hewings 3. "English Grammar for Dummies" by Lesley J. Ward and Geraldine Woods 4. "Intermediate Language Practice" by Michael Vince 5. "English Grammar in Context" by Michael McCarthy and Felicity O'Dell
Recommended books and references (scientific journals, reports...)	1. "Grammar in Context" by Sandra N. Elbaum 2. "Advanced Grammar in Use" by Martin Hewings 3. "English Vocabulary in Use" by Michael McCarthy and Felicity O'Dell 4. "New Headway Intermediate" by Liz Soars and John Soars 5. "Practical English Usage" by Michael Swan
Electronic References, Websites	

Course Description Form

1. Course Name: : Biotechnology

2. Course Code: : **EDBI24F404**

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: In presence, Classroom

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

2/2

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

Name: Mira Ausama Ahmed Nawar Talal Hamed
Email: mirausama@uomosul.edu.iq nawar9779@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Knowing the basic principles of Biotechnology** • **Knowing the practical applications of Biotechnology**

9. Teaching and Learning Strategies

Strategy	Practical and theoretical lecture , talk and discussions, problem solving , reports and homework

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
first	2	Knowledge and Ability	**Introduction to algae**	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Second	2	Knowledge and Ability	Classification of algae	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Third	2	Knowledge and Ability	General urine analysis	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Fourth	2	Knowledge and Ability	Urinary tract infection	Whiteboard, presentation and video	Daily exam, questions and discussions

				lectures	
Fifth	2	Knowledge and Ability	Phycoremediation	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Sixth	2	Knowledge and Ability	Algal Biofuel	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Seventh	2	Knowledge and Ability	Urine culture	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Eighth	2	Knowledge and Ability	Antibiotics from Algae	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Nineth	2	Knowledge and Ability	Algal Biofertilization	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Tenth	2	Knowledge and Ability	*H.pylori* stomach bacteria	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Eleventh	2	Knowledge and Ability	Diabetic foot infection	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twelfth	2	Knowledge and Ability	Blood analysis	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Thirteen	2	Knowledge and Ability	Uses of algae and bioactive compounds with its applications	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Fourteenth	2	Knowledge and Ability	Algal Growth affecting factors	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Fifteenth	2	Knowledge and Ability	General stool analysis	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Sixteenth	2	Knowledge and Ability	Stool culture	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Seventeenth	2	Knowledge and Ability	Phenols in algae	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Eighteenth	2	Knowledge and Ability		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Nineteenth	2	Application in schools		Whiteboard, presentation and video	Daily exam, questions and discussions

				lectures	
Twentieth	2	Applica Application in schools tion in schools		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty first	2	Application in schools		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty second	2	Application in schools		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty third	2	Application in schools		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty fourth	2	Application in schools		Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty fifth	2	Knowledge and Ability	Algal alkaloids	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty sixth	2	Knowledge and Ability	Methods of Algal bioactive compounds identification	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty seventh	2	Knowledge and Ability	Spinal fluid analysis	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty eighth	2	Knowledge and Ability	ASO = Anti Streptolysin O titre analysis	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Twenty nineth	2	Knowledge and Ability	Nanotechnology and Algae	Whiteboard, presentation and video lectures	Daily exam, questions and discussions
Thirtieth	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)	
Main references (sources)	• Botany-Algae/Vashishta et al.2012 • Microalgae-Biotechnologyand Microbiology/E. W. Becker2008 • Algal Biotechnology and Environment/Dinabandhu Sahoo and B. D, Kaushik/2012

	Biodiesel/A.Barker-2010 • BIORESOURCES AND BIOPROCESS IN • BIOTECHNOLOGY FOR A SUSTAINABLE FUTURE/ Torre et al. ,2024 Cyanobacterial Biotechnology in the • 21st Century/Neilan et al.,2023 • The summit book in pathological analyses Written by Dr. Ramadan Muhammad Salman • Pathological Analysis Book (Ashour Kamel Al Nuaimi) Comprehensive medical analysis (Ahmed Kamel Abdel Hafeez
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Prof. Dr. Mira Osama Ahmed/ Biotechnology

M.D. Nawar Talal Hamed/ Microbiology

Course Description Form

1. Course Name: Natural products / optional

2. Course Code: EDBI24F404

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Classroom, Electronic class

6. Number of Credit Hours (Total) / Number of Units (Total): 2hours/2 units

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

Name: Prof. Dr. Muthanna Jassim Muhammad ,Dr. Muhammad Arafat Muhammad
Email: dr.muthanna.j.m@uomosul.edu.iq

8. Course Objectives

Course Objectives	Gain insight into the fundamental principle of natural products expand understanding regarding medicina plants and their inherent constituents Explore the diverse applications of medici plants across various domains.

9. Teaching and Learning Strategies

Strategy	Theoretical lecture, dialogue and discussions, proble solving, reports and daily homework

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Identify medicinal plants	Medicinal plants	Lecture	Quiz,report homework
Second	2	Understanding methods reproduction of medic plants	Methods of multiply medicinal plants	Lecture	Quiz,report homework
Third	2	Learn about the ecology medicinal plants	Adaptation of medic plants to the de environment	Lecture	Quiz,report homework
Fourth	2	Identify the varieties families of medicinal pla	Classification of medic plants	Lecture	Quiz,report homework
Fifth	2	Learn how to harvest	Harvesting medicinal pl	Lecture	Quiz,report homework

Sixth	2	Identify dry requirements	Drying medicinal plants	Lecture	Quiz,report homework
Seventh	2	Understand the sto process	Store medicinal plants	Lecture	Quiz,report homework
Eighth	2	Identify the types proteins	Proteins	Lecture	Quiz,report homework
Nineth	2	Identify the types of lipi	Lipids	Lecture	Quiz,report homework
Tenth	2	Identify the types carbohydrates	Carbohydrates	Lecture	Quiz,report homework
Eleventh	2	Identify the types phenols	Phenols	Lecture	Quiz,report homework
Twelfth	2	Identify medicinal plants	Alkaloids	Lecture	Quiz,report homework
Thirteen	2	Identify the types alkaloids	Terpenes	Lecture	Quiz,report homework
Fourteenth	2	Identify the types terpenes	Glycosides	Lecture	Quiz,report homework
Fifteenth	2	Identify the types glycosides	Volatile oils	Lecture	Quiz,report homework

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)	There are no systematic books, b there are some external books, such the book on natural products
Main references (sources)	Dewick, P. M. (2002). *Medicinal natural produ a biosynthetic approach*. John Wiley & Sons
Recommended books and references (scientific journals, reports...)	Newman, D. J., & Cragg, G. M. (2020).Natu products as sources of new drugs over nearly four decades from 01/1981 09/2019. *Journal of natural products*, *83*(770-803.
Electronic References, Websites	Cragg, G. M., & Newman, D. J. (2013). Natu products: a continuing source of novel dı leads. *Biochimica et Biophysica Acta (BB General Subjects*, *1830*(6), 3670-3695.

Course Description Form

1. Course Name: varology

2. Course Code: FDB124F404

3. Semester / Year: 2023/2024

4. Description Preparation Date:1/9/2023

5. Available Attendance Forms: classroom

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

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

Name: Prof.dr.jamella h. rasheed
Email: dr. jamella. h.rasheed@uomosul.edu.iq

8. Course Objectives

Course Objectives	• **Course Objectives knowing The basic of varology**

9. Teaching and Learning Strategies

Strategy	talk and discussions, problem ,experiments , reports and homework

10. Course Structure

Week	**Hours**				
first	2	General Introduction			
Second	2	Nomenclature of Viruses			
Third	2	Vival infection and morkuncut & viruses			
Fourth	2	Virus taxonomy			
Fifth	2	Virus taxonomy			
Sixth	2	Types & morphology of viruses			
Seventh	2	Protectronics Stratigies of virus			
Eighth	2	Chemical Structure of Viruses			
Nineth	2	Viral infection and movement of viruses			
Tenth	2	Incidence of Vival infection and multiplication			

Eleventh	2	Plant production free-from Viruse
Twelfth	2	study Viral culture and propagation In Laboratory
Thirteen	2	Covid virus
Fourteenth	2	New studies, Importance of viruses
Fifteenth	2	Saris Virus Epiola virue Small box Virus

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: Cytogenetics

2. Course Code: EDB124F404

3. Semester / Year: 2023-2024

4. Description Preparation Date: 01/09/2023

5. Available Attendance Forms: Presence (face to face education), Class room

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

Two hours / two units

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

Name: Dr. Ghgazwan Qassim Hassan
Email: dr.ghazwan@uomosul.edu.iq
Name: Dr. Mohammed Abdulilah Mohammed
Email: dr.mohammedsh@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Learn about the basic principles of cytogenetics. • Learn about the genetic material and its constituent molecules. • Study of molecular genetics and the most important modern applications used.

9. Teaching and Learning Strategies

Strategy	Theoretical lectures, talk and discussions, problem solving, conducting practical experiments, reports and daily assignments.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Learn about the general concept of cellular genetics	cytogenetics	lecture	Quiz

2	2	Learn about the general concept of cytogenetics	Cytological basis (cellular) for Mendelian heredity	lecture	Quiz
3	2	Study of nuclear division in eukaryotic and prokaryotic cells	Nuclear division Karyokinesis and cytoplasmic division Cytokinesis	lecture	Quiz
4	2	Study types of nuclear division	Mitosis division and Meiosis division	lecture	Quiz
5	2	Structure of nuclear matter	The genetic materials (DNA and RNA)	lecture	Homework
6	2	Study of the structural units of genetic material	Chemical structure of the genetic material	lecture	Homework
7	2	Understand the meaning of the gene	Gene, its structure, the difference between prokaryotic and eukaryotic genes	lecture	Homework
8	2	Learn about genetic fingerprinting technology	How to detect a person's genetic identity using DNA fingerprinting	lecture	Preparing reports on modern techniques in genetic detection
9	2	Knowing mutations and their types	Mutations	lecture	Quiz
10	2	Study of genetic codes	Non-coding sequences outside and inside the gene	lecture	Homework
11	2	Understanding the process of transmission of genetic material	Study of the genetic material inside the cell and how it is transmitted	lecture	Preparing reports and homework
12	2	Study of plasmids and the location of virulence factors	Study of the transmission of genetic material and pathogenicity via plasmids in bacterial cells	lecture	Quiz & Homework
13	2	Learn about modern techniques in genetics	Modern techniques us in molecular diagnosis	lecture	Homework
14	2	Understanding the methods of isolation of a genetic material	Study of the mechanism of isolating nuclea material and th solutions used	lecture	Quiz, Preparing reports and homework
15	2	Understand the process of isolating genetic material	Watching a video on how to isolate genetic material, and then perform the	lecture	Quiz, homework assignment s on

			isolation process as homework.		isolating genetic material using materials available at home
16	2	Learn modern methods for isolating genetic material	Modern methods of isolating genetic material and studying gel electrophoresis technology	lecture	Prepare a report on this technology and the most important errors in the download process
17	2	Modern technology for amplifying and detecting the genes	PCR technology	lecture	Homework
18	2	Types of PCR	Study the types of PCR	lecture	Homework
19	2	Learn the optimal conditions for the PCR reaction	Understanding PCR reactions and optimal reaction conditions	lecture	Homework
20	2	Learn how to detect the diseases	Using modern technologies to detect diseases	lecture	Homework
21	2	Learn how to detect the SARS virus	Using PCR to detect people infected with coronavirus	lecture	Quiz
22	2	Detection of genetic diseases	Understanding the impact of genetic diseases, how to diagnose them, and preventing the presence of affected children	lecture	Homework

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)	الشهيب، محمد باقر صاحب، السعدي، علي حمود وزيدان، حيدر كامل (2013). مبادئ الوراثة الجزيئية، كلية العلوم، جامعة بابل
Main references (sources)	Gupta P.K. (2005). Cell and Molecular Biology 3ed edition.
Recommended books and references (scientific journals, reports...)	Snustad D.P. and Simmons, M.J.2000. Principles of Genetics, 6th edition,. John Wiely and Sons

	أحمد، خالد دحام، الشكرجي، محمد عبدالاله، نجم، بلقيس يحيى (2013) دورة تدريبية في تقنيات الوراثة الجزيئية، قسم علوم الحياة، جامعة الموصل
Electronic References, Websites	

Course Description Form

1. Course Name: Medical Mycology /Elective

2. Course Code: EDBI24F404

3. Semester / Year: 2023-2024

4. Description Preparation Date: 1/9/2023

5. Available Attendance Forms: Classroom , Google classroom

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

2 H. /4 Units

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

Name: Lecturer Dr. Rafea Qasim Mohammed
Email: dr.rafeaqm@uomosul.edu.iq

8. Course Objectives

Course Objectives	• Acquire the student with the basic concepts in medical mycology. • identify the student most important types of mycotoxins. • identify the student most important types of pathogenic fungi and diseases that infect humans.

9. Teaching and Learning Strategies

Strategy	Theoretical lecture , talk and discussions, reports and homework.

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
First	2	Student comprehension of the lecture topic	General Introduction, Medical Mycology	Lecture (PPT)	Talk and Discussions
Second	2	Student comprehension of the lecture topic	Biology of medical fungi	Lecture (PPT)	Talk and Discussions, Quiz
Third	2	Student comprehension of the lecture topic	Biology of medical fungi	Lecture (PPT)	Talk and Discussions, Quiz
Fourth	2	Student comprehension of the lecture topic	Pathogenesis of fungi1	Lecture (PPT)	Talk and Discussions, Quiz

Fifth	2	Student comprehension of the lecture topic	Pathogenesis of fungi 2	Lecture (PPT)	Talk and Discussions, Quiz
Sixth	2	Student comprehension of the lecture topic	Diagnosis of fungal infections1	Lecture (PPT)	Talk and Discussions, Quiz
Seventh	2	Student comprehension of the lecture topic	Diagnosis of fungal infections 2	Lecture (PPT)	Talk and Discussions, Quiz
Eighth	2	Student comprehension of the lecture topic	Mycotoxins	Lecture (PPT)	Talk and Discussions, Quiz
Nineth	2	Student comprehension of the lecture topic	Classification of mycotoxins	Lecture (PPT)	Talk and Discussions, Quiz
Tenth	2	Student comprehension of the lecture topic	The most important types of mycotoxins	Lecture (PPT)	Talk and Discussions, Quiz
Eleventh	2	Student comprehension of lecture topic	Methods for inactivating mycotoxins	Lecture (PPT)	Talk and Discussions, Quiz
Twelfth	2	Student comprehension of the lecture topic	Toxic mushrooms	Lecture (PPT)	Talk and Discussions, Quiz
Thirteenth	2	Student comprehension of the lecture topic	The most important toxins produced by mushroom	Lecture (PPT)	Talk and Discussions, Quiz
Fourteenth	2	Student comprehension of the lecture topic	Fungal infections Pityriasis versicolor disease	Lecture (PPT)	Talk and Discussions
Fifteenth	1.5	Exam			
Sixteenth	2	Student comprehension of the lecture topic	Black piedra disease	Lecture (PPT)	Talk and Discussions
Seventeenth	2	Student comprehension of the lecture topic	Fungal otitis	Lecture (PPT)	Talk and Discussions
Eighteenth		Field practice in schools			
Nineteenth		Field practice in schools			
Twentieth		Field practice in schools			
Twenty first		Field practice in schools			
Twenty second		Field practice in schools			
Twenty third		Field practice in schools			

Twenty fourth	2	Student comprehension of the lecture topic	Tinea capitis	Lecture (PPT)	Talk and Discussions, Quiz
Twenty fifth	2	Student comprehension of the lecture topic	Athlete's foot disease	Lecture (PPT)	Talk and Discussions, Quiz
Twenty sixth	2	Student comprehension of the lecture topic	subcutaneous infections	Lecture (PPT)	Talk and Discussions, Quiz
Twenty seventh	2	Student comprehension of the lecture topic	Systemic infections	Lecture (PPT)	Talk and Discussions, Quiz
Twenty eighth	2	Student comprehension of the lecture topic	Opportunistic infections	Lecture (PPT)	Talk and Discussions, Quiz
Twenty nineth	2	Student comprehension of the lecture topic	Antifungals	Lecture (PPT)	Talk and Discussions
Thirtieth	3	Exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	The Most Important Medical Fungi and Their Diseases (methods of isolation, diagnosis and treatment). Karima Amin Al-Khafaji and Zidan Khalif Al-Mamouri (2013), Al-Basaer House and Library, Beirut.
Recommended books and references (scientific journals, reports...)	Dismukes, W. E., Pappas, P. G., and Sobel, J. D. (2003). Clinical mycology. Oxford University Press, New York.
Electronic References, Websites	https://www.davidmoore.org.uk