

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



Academic Program and Course Description Guide

2024

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: AL-Muthanna

Faculty/Institute: College of Education for Pure Science

Scientific Department: Biology

Academic or Professional Program Name: B. Edu. in Biology

Final Certificate Name: B. Edu. in Biology

Academic System: Yearly

Description Preparation Date: 3/3/2024

File Completion Date: 4/3/2024

Signature:

Head of Department Name:

Assist.Prof.Dr. Hana Khadum

Date: 4 / 3 / 2024

Signature:

Scientific Associate Name:

Assist.Prof.Dr. Hajem Ati Daham

Date: 4 / 3 / 2024

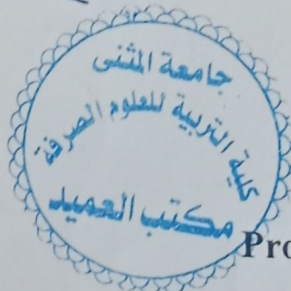
The file is checked by: Assist.Prof.Dr Yassir Dakheel Kremsh Al-Asadiy

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 11 / 3 / 2024

Signature:



Approval of the Dean

Prof. Dr. Jawad Kadhum Muraih

Date: 11 / 3 / 2024

1. Program Vision

The Department of Biology aspires to gain global recognition in the fields of scientific research and teaching by achieving academic quality, as well as local recognition in the field of supplying the labor market with highly qualified scientific personnel

2. Program Mission

Raising the efficiency of biological sciences in society Effectively supporting various scientific specializations with high-level graduates Contributing to the scientific renaissance and developing ways to build competencies Biologist has the highest level of teaching and training to contribute to raising the level Biological thought among trainees.

3. Program Objectives

1. Providing students with the knowledge and learning of modern principles and methods in the study of biology.
2. Introducing students to the importance of biology.
3. Graduating an elite group of students who have the ability to continue graduate studies to support higher education in the future.

4. Program Accreditation

Does the program have program accreditation? And from which agency?
Yes, the program has program accreditation from the National Council for Accreditation of Programs of Colleges of the Educational Group.

5. Other external influences

Is there a sponsor for the program?
Ministry of Higher Education and Scientific Research, Scientific Supervision and Scientific Evaluation Apparatus, Directorate of Quality Assurance and Academic Accreditation, Accreditation Department.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	26	15	10%	
College Requirements	40	22	20%	

Department Requirements	116	64	70%	
Summer Training	-	-		
Other				

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

7.Program Description				
First Year				
Course Name	Course Code	Credit Hours		Units
		Theoretical	Practical	
General Biology	Bio 100	2	2	6
Plant Anatomy	Bio 101	2	2	6
Cell Biology	Bio 102	2	2	6
General Chemistry	Bio 103	1	2	4
Geology	Bio 104	1	-	2
Educational Psychology	CREQ101	2	-	4
Fundamentals of Education	CREQ100	2	-	4
Arabic Language	UREQ101	1	-	2
English Language I	MUR101	1	-	2
Computer I	UREQ103	-	2	2
Democracy, Human Rights, and the Crimes of the Baath Party	UREQ102	1	-	2
Biosafety and Security	Bio 100	1	-	2
Total		16	10	42
Second Year				
Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Invertebrates	Bio 200	2	2	6
Plant Taxonomy	Bio 201	2	2	6
Histology	Bio 202	2	2	6
Embryology	Bio 203	2	2	6
Biochemistry	Bio 204	2	2	6
Computer I	UREQ 201	-	2	2
Developmental Psychology	CREQ 201	2	-	4
Educational administration and Secondary Education	CREQ 202	2	-	4
Biostatistics	Math 205	1	2	4
English Language II	MUR201	1	-	2
Total		16	12	46
Third year				
Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Ecology and Pollution	Bio 300	2	2	6

Entomology	Bio 301	2	2	6
Comparative Anatomy	Bio303	2	2	6
Algae	Bio 304	2	2	6
Genetics	Bio 305	2	2	6
Mycology	Bio302	2	2	6
Curriculums and Methods of Teaching	CREQ300	2	-	4
Fundamentals of Scientific Research	CREQ301	2	-	4
Counseling & Metal Health	CREQ302	2	-	4
English Language III	MUR301	1	-	2
Total		19	12	46
Forth year				
Course Name	Course Code	Number of Hours		Units
		Theoretical	Practical	
Parasitology	Bio 400	2	2	6
Animal Physiology	Bio 402	2	2	6
Plant Physiology	Bio 403	2	2	6
Microbiology	Bio 401	2	2	6
Immunology	Bio 404	1	2	4
Optional (Biotechnology)	Bio406	2	-	4
Research Project	Bio 405	-	2	2
Measurement and evaluation	CREQ 401	2	-	4
Practical education	CREQ 402	1	2	4
English Language IV	MUR401	1	-	2
Ethics Professional	MUR402	1	-	2
Total		16	14	46

8. Expected learning outcomes of the program	
Knowledge	
A1- Enabling the student to gain an understanding of biology.	
A2- Preparing qualified teachers to teach in educational institutions.	
A3- Preparing a high-quality biologist teacher.	
Skills	
B1- That the student acquires teaching skills.	1. The correct scientific thinking method. 2. Discussion method. 3. Daily, monthly and annual tests.
B2- That the student acquires skills in thinking and analysis methods.	
B3- The student should be able to link information and experiences.	
C1- The method of discussion and dialogue between the student and the professor.	1. Through daily and monthly tests. 2. Discussions. 3. Practical and applied tests.
C2- Conclusion.	

	4. By reviewing the experiences of different universities.
Ethics	
D1- Utilizing the acquired information. D2- Personal development through reading and updating knowledge. D3- Engaging in the teaching profession. D4- Participation in seminars, conferences and workshops Specialized.	

9. Teaching and Learning Strategies

Theoretical and practical teaching of biology sciences, as well as graduation research and others.

10. Evaluation methods

1. Theoretical and practical tests.
2. Discussions.
3. Final exams.

11. Faculty

Faculty Members						
Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof. Dr. Jawad Kadhum Muraih	Chemistry	Biochemistry			✓	
Asisst.prof.Hana Kadum shanan	Biology	Biotechnology			✓	
Prof. Dr. Karima A. Al-Salihi	Veterinary	Pathology			✓	
Kadhem Mohammed Sabae	Biology	Animal physiology			✓	
Assist.prof.dr. yassir dakheel kremsh Alasadiy	Biology/zoology	parasitology			✓	
Asisst.prof Arshed Naji	Agricultural Engineering	Plant Genetic			✓	
Asisst.prof.Hasan Raheem Khudhur	Biology	Medical Microbiology			✓	
Asisst.prof Nadia Hussein Ali	geography	Medical geography			✓	
Dr.Fouad Qasim Jubair Al-Zavadi	Medical Microbiology	Immunology			✓	

Dr.Mohamed Baqer Hussine	Biology	Taxonomist			✓	
Eqbal Awadh Gatea	biology	animal physiology			✓	
Israa Abd Alhasan Hamdan	Chemistry	organic chemistry			✓	
Duaa Hmza Hamad	biology	animal physiology			✓	
Hadi Abd Alameer Khadem	Biology	Animal physiology			✓	
zainab muhsen hassan	Protection of plants	plant diseases			✓	
Nibras musafir shakir	History	Social Studies Teaching Methods			✓	
Kawakib Awadh atshan	Botany	Plant protection			✓	
Nawal jumaah shanshool	livestock production	Reproductive physiology			✓	
Duaa Raheem Katun	Biology	Faculty of basic Education Department of science			✓	
Haneen majed saheb	Chemistry	Chemistry			✓	
Noor-Alhuda Mohamed Jrew	Arabic	Arabic			✓	
Baidaa hussein jasim	Biology	Microbiology			✓	
Mustafa Abd Bashi Al-Mayal	Biotechnology	Genetics			✓	
Osama Ghazi Abbas	Agricultural Engineering	Plant Pathology			✓	
Asmaa Sahib Abdul Abbas Al-hasnaw	Plant production	Crops technology			✓	
Dr. Ali Jawad Obada	Arabic	Arabic				✓
Dr. Munthir Shaker	English	English				✓
Dr. Hasan Jumaah Mrayeh	Mechanical Engineering	Refractories				✓
Hussain Ali Hadhood	Political Science	Local governments				✓
Noor-Alhuda Mohamed Jrew	Arabic	Arabic				✓

Professional Development

Mentoring new faculty members

New faculty members were directed to complete a teaching suitability test and entered training courses and workshops to develop their skills in teaching and scientific research.

Professional development of faculty members

Introducing faculty members into training courses and workshops to develop their skills in teaching and scientific research.

12. Acceptance Criterion

- 1- Central admission.
- 2- Scientific interview.
- 3- The graduate of the preparatory stage is accepted exclusively in the scientific stream (biology - applied).
- 4- Medical examination.

13. The most important sources of information about the program

- 1- Sources approved by the university (sectoral committee).
- 2- External sources and various books.
- 3- The Internet.

14. Program Development Plan

- 1- Many duties that require external information.
- 2- Many practical applications.

Program Skills Outline													
Year/Level	Course Name	Course Code	Basic or optional	Required program Learning outcomes									
				Knowledge				Skills				Ethics	
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2 C3 C4
First Year	General Biology	Bio 100	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Plant Anatomy	Bio 101	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Cell Biology	Bio 102	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	General Chemistry	Bio 103	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Geology	Bio 104	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Educational Psychology	CREQ101	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Fundamentals of Education	CREQ100	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	Arabic Language	UREQ101	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓
	English Language I	MUR101	Basic	✓	✓	✓		✓	✓	✓		✓	✓ ✓

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Course Description Form

1. Course Name:	
GENERAL BIOLOGY	
2. Course Code:	
Bio 100	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) + 2 hours (practical) / 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Pro.dr. yassir dakheel kremsh alasadiy Email: dr.yassiralasadiy@mu.edu.iq	
8. Course Objectives	
Course Objectives	Give a complete idea of zoology, botany and what has to do with other science
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	knowledge	Overview Historical review of the growth of biology	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports

				- Open educational classes using the Classroom platform	
2	4	knowledge	Evolution of biology	=====	=====
3	4	knowledge	The importance of biology	=====	=====
4	4	knowledge	Branches of Biology	=====	=====
5	4	knowledge	Characteristics of life Definition of qualities of life The main method of construction of living matter	=====	=====
6	4	knowledge	Classification systems	=====	=====
7	4	knowledge	Classification of living organisms Historical stages	=====	=====
8	4	knowledge	Plant and animal classification bases Concept of species	=====	=====
9	4	knowledge	Reproduction and growth in plant	=====	=====
10	4	knowledge	completed :Reproduction and growth in plants	=====	=====
11	4	knowledge	Reproduction and growth in animals	=====	=====
12	4	knowledge	completed :Reproduction and growth in animals	=====	=====
13	4	knowledge	Coordination in animals	=====	=====
14	4	knowledge	Coordination in Human	=====	=====
15	4	knowledge	Coordination in plants	=====	=====
16	4	knowledge	Evolution The most important concepts of evolution	=====	=====
17	4	knowledge	Theories of Evolution Lamarck Theory Darwinism	=====	=====
18	4	knowledge	Evolution of low animals	=====	=====
19	4	knowledge	Evolution of vertebrates	=====	=====
20	4	knowledge	Animal behavior	=====	=====
21	4	knowledge	Nervous system and behavior	=====	=====
22	4	knowledge	Fatal and learner behavior	=====	=====
23	4	knowledge	Orientation in time and space	=====	=====
24	4	knowledge	Collective movement and migration	=====	=====
25	4	knowledge	Monotony and the hour of life	=====	=====

26	4	knowledge	Hierarchical Dominance in Animal Groups	====	====
27	4	knowledge	Ecology Some concepts of ecology	====	====
28	4	knowledge	Biological spectrum - ecosystem (Biogeochemical Cycles and relationships)	====	====
29	4	knowledge	The human concept of ecology and its most important divisions , The concept of groups Population density	====	====
30	4	knowledge	Home ranges Ecological pyramids Major natural ecosystems	====	====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests + 5 marks for the first practical exam + 5 marks for the second monthly practical exam)

60 marks (20 marks final practical exam + 40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	<p>General Zoology - for undergraduate - third edition Written by Dr. Mohammed Ammar Al-Rawi with a group of animal science professors</p> <p>Animal biology - Part II and III Written by Ahmad Hammad Al - Hussein and Amal 1995</p> <p>Practical Plant Part I and II Written by Dr. Hazem Al-Alusi and Dr. Abdul Raouf Sayala 1989</p> <p>The basics of modern ecology - authored by Dr. Kadhim Al – Mikdadi, 2017</p>
Recommended books and references (scientific journals, reports...)	Biology - Reviewed and written by Prof. Dr. Hussein Ali Al-Saadi and Prof. Dr. Hussein Abdel Moneim Daoud University of Baghdad - 2005
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
Histology	
2. Course Code:	
Bio 202	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) / Number of Units 6	
7. Course administrator's name (mention all, if more than one name)	
Name: Lecturer. Duaa Hamad Hamza Email: doaa.hamad@mu.edu.iq	
8. Course Objectives	
Course Objectives	Identifying the tissues required for the organs of the living body's systems and their components, each tissue, its types and locations in the human body, and knowing the function of each type of tissue
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	knowledge	Definition in Histology	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	2	knowledge	classification of animal tissue	====	====

3	2	knowledge	Epithelial tissue, simple epithelial tissue	====	====
4	2	knowledge	stratified epithelial tissue	====	====
5	2	knowledge	Glandular epithelial tissue	====	====
6	2	knowledge	Connective tissue , components of connective tissue	====	====
7	2	knowledge	Proper connective tissue	====	====
8	2	knowledge	Bone	====	====
9	2	knowledge	Cartilage	====	====
10	2	knowledge	Blood	====	====
11	2	knowledge		====	====
12	2	knowledge	Muscle tissue	====	====
13	2	knowledge	Type of muscle tissue	====	====
14	2	knowledge	Skeletal muscle	====	====
15	2	knowledge	Nerves tissue	====	====
16	2	knowledge	Type of neuron	====	====
17	2	knowledge	Circulatory system	====	====
18	2	knowledge	Heart	====	====
19	2	knowledge	Respiratory system	====	====
20	2	knowledge	Lung , Trachea ,Bronchioles	====	====
21	2	knowledge	Digestive system	====	====
22	2	knowledge	Esophagus ,stomach, intestine	====	====
23	2	knowledge	Central nervous system	====	====
24	2	knowledge	Peripheral nervous system	====	====
25	2	knowledge		====	====

			Urinary system		
26	2	knowledge	Integument system (skin)	====	====
27	2	knowledge	Male reproductive system	====	====
28	2	knowledge	Female reproductive system	====	====
29	2	knowledge	Lymphatic system	====	====
30	2	knowledge	Spleen, Thymus, Tonsils	====	====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam+20 marks final practical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic Histology
Main references (sources)	
Recommended books and references (scientific journals, reports...)	-Histology and Cell biology - HISTOLOGY A TEXT AND ATLAS Atlas of Descriptive Histology
Electronic References, Websites	

Course Description Form

1. Course Name:	
Foundations of scientific research	
2. Course Code:	
CREQ301	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Pro.dr. Nadia Hussein Ali Email: nadiasaoudi@mu.edu.iq	
8. Course Objectives	
Course Objectives	Introducing the student to studying the meaning of scientific research, its types and goals, and in-depth studying research methods, the historical, experimental and descriptive approach.
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	Science: Definition of science, the origins of science and its development	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports

				Classroom platform	
2	2	knowledge	The difference between science and knowledge, scientific thinking and its basics	====	====
3	2	knowledge	Science and its goals	====	====
4	2	knowledge	Scientific research and its relationship to science, the development of the concept of publishing scientific research	====	====
5	2	knowledge	Search Plan	====	====
6	2	knowledge	The concept of the problem and its characteristics	====	====
7	2	knowledge	How to formulate the problem	====	====
8	2	knowledge	Assumptions	====	====
9	2	knowledge	Research plan and framework	====	====
10	2	knowledge	Scientific research methods and tools, survey method and tools	====	====
11	2	knowledge	The descriptive method and its tools, the experimental method and its tools	====	====
12	2	knowledge	Statistical method, case study method, comparative method	====	====
13	2	knowledge	Writing down the scientific research title, formulating the research title	====	====
14	2	knowledge	Writing down the main paragraphs of the research, the introduction, and ways to refer to references, writing down the materials paragraph and working methods	====	====
15	2	knowledge	Collect sources or references	====	====
16	2	knowledge	Style of writing sources	====	====
17	2	knowledge	Preparing a list of references, methods of writing them down, books written and translated, research and reports	====	====
18	2	knowledge	Research writing structure	====	====
19	2	knowledge	Measurement	====	====
20	2	knowledge	Data collection tools (questionnaire)	====	====
21	2	knowledge	the interview	====	====
22	2	knowledge	Note	====	====
23	2	knowledge	Samples	====	====
24	2	knowledge	Types of samples	====	====
25	2	knowledge	Sample selection methods	====	====
26	2	knowledge	Sample selection conditions	====	====
27	2	knowledge	How to write reports and their types	====	====

28	2	knowledge	Meaning of quotation and notation	====	====
29	2	knowledge	Quotation terms	====	====
30	2	knowledge	The final output of the research	====	====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	Curricula and lectures in scientific research
Recommended books and references (scientific journals, reports...)	Curricula and lectures in scientific research
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
Educational administration and secondary education	
2. Course Code:	
CREQ 202	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Pro.dr. Nadia Hussein Ali	
Email: nadisaoudi@mu.edu.iq	
8. Course Objectives	
Course Objectives	Giving a complete idea about introducing the student to the concept of management, developing the concept of school and educational administration, and learning about the concept of leadership, its functions, and the characteristics of general leadership.
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	The concept of management and the development of the concept of management	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports

				Classroom platform	
2	2	knowledge	School administration theories	====	====
3	2	knowledge	The concept of educational administration and school administration	====	====
4	2	knowledge	Leadership and management	====	====
5	2	knowledge	General functions and characteristics of leadership	====	====
6	2	knowledge	The concept of educational planning	====	====
7	2	knowledge	Foundations and rules of educational planning	====	====
8	2	knowledge	Stages and requirements for successful educational planning	====	====
9	2	knowledge	Benefits of educational planning	====	====
10	2	knowledge	The role of planning in the educational process	====	====
11	2	knowledge	Definition of decision and its importance	====	====
12	2	knowledge	Decision making steps and types of decisions	====	====
13	2	knowledge	Administrative leadership styles	====	====
14	2	knowledge	Factors affecting the leader in adopting the administrative style	====	====
15	2	knowledge	The concept of classroom management	====	====
16	2	knowledge	The concept of educational supervision and its tasks And his goals	====	====
17	2	knowledge	Methods of educational supervision	====	====
18	2	knowledge	Motivation concept	====	====
19	2	knowledge	The importance of incentives	====	====
20	2	knowledge	Types of incentives	====	====
21	2	knowledge	The concept of performance evaluation	====	====
22	2	knowledge	The importance of performance evaluation	====	====
23	2	knowledge	Performance evaluation objectives	====	====
24	2	knowledge	Performance evaluation elements	====	====
25	2	knowledge	Basic rules for performance evaluation	====	====
26	2	knowledge	Benefits of performance evaluation	====	====
27	2	knowledge	Developing the performance evaluation process	====	====
28	2	knowledge	Stages of performance evaluation	====	====

29	2	knowledge	Leadership and administrative tasks of the administrative leader	====	====
30	2	knowledge	Supervisory methods	====	====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Towards the development of school administration ((theoretical and field studies), Psychology of school administration.
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
Parasitology	
2. Course Code:	
Bio 400	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) + 2 hours (practical) / 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Pro.dr. yassir dakheel kremsh alasadiy	
Email: dr.yassiralasadiy@mu.edu.iq	
8. Course Objectives	
Course Objectives	Give a general idea of parasites with clarifying the relationship of these organisms with other organisms from where be affected and effect and what are the most important diseases caused by these organisms
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	knowledge	Introduction of parasitology Public relations between animals	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	4	knowledge	Advantages of parasitism A - The benefits that parasites	=====	=====

			gain from their hosts - The harms that parasites gain from their hosts		
3	4	knowledge	types of parasitism, types of parasites and hosts	====	====
4	4	knowledge	Parasitism in the animal kingdom, infectious stages, sources of infection	====	====
5	4	knowledge	Entrances and exits of infection, factors affecting the spread and density of parasites, and the stages that the parasite goes through	====	====
6	4	knowledge	Phylum: protozoa , characteristics and manifestations of the phylum (characteristics of the Phylum: protozoa, body composition) Life aspects of the Division (nutrition, movement, respiration, secretion, reproduction, secretion, growth, response to stimuli, ticking, classification of protozoa)	====	====
7	4	knowledge	Class: Sarcodina Entamoeba histolytica Entamoeba coli	====	====
8	4	knowledge	Endolimax nana Iodamoeba butschlii Dientamoeba fragilis Entamoeba gingivalis free living amoeba [Naegleria fowleri] [Acanthamoeba spp.]	====	====
9	4	knowledge	Class: Mastigophora 1- Giardia intestinalis	====	====
10	4	knowledge	2-Chiomastix mesnili 3-Trichomonas vaginalis 4-T.tenax 5-T. hominis 6-T. foetus	====	====
11	4	knowledge	Blood and tissue Mastigophora 2- Leishmania tropica 1- L.donovani	====	====
12	4	knowledge	Trypanosoma gambianse T. cruzi Class: sporozoa Plasmodium vivax ,P. ovale ,P. malarae, P. falciparum)	====	====
13	4	knowledge	Toxoplasma gondii	====	====
14	4	knowledge	Class: Ciliophora Balantidium coli All parasites mentioned above are studied in the form and composition of the parasite, life	====	====

			cycle, pathology, epidemiology, diagnosis, prevention		
15	4	knowledge	Phylum: Platyhelminthes Characteristics of the Division of flatworms, body wall installation, gastrointestinal tract, urinary system, nervous system, reproductive system, life cycle	=====	=====
16	4	knowledge	<i>Class: Trematoda</i> <i>((Characteristics of the class and Orders))</i> <i>1-Liver flukes</i> <i>Fasciola hepatic</i> <i>Clonorchis sinensis</i> <i>2-Intestinal flukes</i> <i>Fasciolopsis buski</i> <i>Heterophyes heterophye</i>	=====	=====
17	4	knowledge	Blood flukes Schistosomatidae Scistosoma haematobium S.mansoni S. Jpanicum	=====	=====
18	4	knowledge	<i>Lung flukes</i> <i>Paragonimus westermi</i>	=====	=====
19	4	knowledge	<i>Class: Cestoda</i> <i>Characteristics of the class ,body wall installation, body system, life cycle</i>	=====	=====
20	4	knowledge	<i>Pseudophyllidae Order:</i> <i>Diphilobothrium latum</i> <i>Order : Cyclophyllidae</i> <i>Taenia saginata</i> <i>T. solium</i> <i>Echinococcus granulosus</i> <i>Dipylidium caninum</i> <i>All parasites mentioned above are studied in the form and composition of the parasite, life cycle, pathology, epidemiology, diagnosis, prevention</i>	=====	=====
21	4	knowledge	Phylum : Nematoda 1- Trichinella spiralis 2-Trichuris trichura	=====	=====
22	4	knowledge	<i>3-Ascaris lumbricoides</i> <i>4-Ancylostoma duodenale</i> <i>5-Strongyloides stercoralis</i> <i>All parasites mentioned above are studied in the form and composition of the parasite, life cycle, pathology, epidemiology, diagnosis, prevention</i>	=====	=====
23	4	knowledge	6-Wuchereria bancrofti 7-Dracunculus medinensis	=====	=====

			All parasites mentioned above are studied in the form and composition of the parasite, life cycle, pathology, epidemiology, diagnosis, prevention		
24	4	knowledge	Phylum : Arthropda Characteristics of the class ,body wall installation, body system, life cycle	=====	=====
25	4	knowledge	Classification Class:Insect Musca domestica Stomoxys calcitrans Phlebotomus papata	=====	=====
26	4	knowledge	Glossina Sarchophagidae Myiasis Mosquitoes	=====	=====
27	4	knowledge	Lice A- Sucking lice (human lice, pubic lice) B- Biting lice 1- Poultry lice, Menopon Gallinae	=====	=====
28	4	knowledge	Menacanthus stramineus Fleas) Pulex irritanus Ctenocephalides	=====	=====
29	4	knowledge	1- Class: Arachnida Order:Acarina A-Ticks	=====	=====
30	4	knowledge	B-Mites 1- Order: Scorpionoidea 2- Order Arenea	=====	=====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests + 5 marks for the first practical exam + 5 marks for the second monthly practical exam)

60 marks (20 marks final practical exam + 40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	Atlas of medical Helminthology and protozoology-H.C.Jeffrey and R.M.Leach.third edition – 1993 Parasitology - v- medical microbiology-2005 Parasitology –Ismail AL-Hadithi and A.H.Awad – 2015 Paniker's Textbook of Medical Parasitology, seventh edition, Ck Jayaram Paniker,2013

Recommended books and references (scientific journals, reports...)	Parasitology –Ismail AL-Hadithi and A.H.Awad – 2015
Electronic References, Websites	Websites available on Google Chrome (CDC)

Course Description Form

1. Course Name:	
Professional ethics	
2. Course Code:	
MVRU402	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
4 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: assistant teacher hussain ali hadhood Email: hussain.hadhood @mu.edu.iq	
8. Course Objectives	
Course Objectives	Identifying ethics in terms of concept origin and schools Which dealt with this concept, the sources of ethics, and theories of moral education Ethics of the teaching profession in terms of the concept of the profession and its importance How to consolidate and develop the teaching profession among students
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	knowledge	The concept of ethics	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	Theoretical, /oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	4	knowledge	Definition of ethics	=====	=====
3	4	knowledge	Conditions for congenital action	=====	=====
4	4	knowledge	The origins and development of ethics	=====	=====
5	4	knowledge	The stages that the science of ethics passed through	=====	=====
6	4	knowledge	Formation of ethics	=====	=====
7	4	knowledge	Sources of ethics	=====	=====
8	4	knowledge	Theories affecting professional ethics	=====	=====
9	4	knowledge	Ethics of the teaching profession	=====	=====
10	4	knowledge	The importance of ethics in the education profession	=====	=====
11	4	knowledge	Sources of professional ethics	=====	=====

12	4	knowledge	Ethics that must be possessed by the teaching profession	=====	=====
13	4	knowledge	Responsibilities of the teaching profession	=====	=====
14	4	knowledge	Types of responsibilities	=====	=====
15	4	knowledge	Determinants of the teaching profession	=====	=====
16	4	knowledge	Developing and consolidating the ethics of the teaching profession	=====	=====
17	4	knowledge	Objectives of educational policy	=====	=====
18	4	knowledge	The school principal is a role model for teachers and students	=====	=====
19	4	knowledge	The manager is a leader and administrator	=====	=====
20	4	knowledge	The school principal is a supervisor and trainer	=====	=====
21	4	knowledge	The teacher has a message	=====	=====
22	4	knowledge	The teacher and his position in the educational process	=====	=====
23	4	knowledge	The skills of a school principal and a successful team	=====	=====
24	4	knowledge	Field study	=====	=====
25	4	knowledge	The problem of the study and its importance	=====	=====
26	4	knowledge	Absenteeism and dropping out of school	=====	=====
27	4	knowledge	Absenteeism and dropping out of school	=====	=====
28	4	knowledge	Reasons leading to school absence	=====	=====

29	4	knowledge	Aggressive employee behavior in the educational environment	=====	=====
30	4	knowledge	The problem of poor academic achievement	=====	=====

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	
40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 2 marks for daily preparation and daily tests	
Practical (5 marks for the first monthly exam + 5 marks for the second monthly exam)+3marks	
Evaluating absences and activities	
60 marks (marks final theoretical exam)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Professional ethics
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name: Genetics	
2. Course Code: bio 305	
3. Semester / Year: 2023/2024	
4. Description Preparation Date: 1/2/2024	
5. Available Attendance Forms:	
6. Number of Credit Hours (30h) / Number of Units (6)	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Prof. Dr. Arshad Naji Alhasnawi Email: arshad@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> The student learns about the basic principles of genetics Explain sex-linked traits Describes the basic structure of genetic material
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> Presentation strategy Brainstorming strategy Teamwork strategy Discussion strategy Blended learning strategy Training and application strategy Interactive lesson strategy
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1.Mendelian inheritance	1. Introduction, the law of isolation, the law of free distribution, and their cytological interpretation	Use learning strategies	<ul style="list-style-type: none"> View questions and answers Presenting and interpreting educational situations The student is assigned to write a report Tasks and duties of Kozat Monthly exams
2	2	2.Expansion of Mendelian inheritance	2. Incomplete dominance, co-dominance		
3	2	3. Genes	3.Lethal genes, gene action overlap		
4	2	4. Alleles	4.Multiple alleles, heredity and sex, penetrance and gene expression		
5	2	5. Quantitative genetics	5.Quantitative genetics: the importance of multiple genes, genetic Heritability, twins		
6	2	6. Genetic linkage and crossing over	6.Genetic linkage and crossing over: incomplete linkage, complete linkage, crossing mechanism, factors affecting crossing over		
7	2	7. Genetic maps	7.How to draw genetic maps for eukaryotic organisms, comparison between crossing over and exchange between sister chromatids		
8	2	8. Bacteria	8.Methods for the emergence of new genetic structures in bacteria		
9	2	9. Chromosomes	9. Sex chromosomes and sex determination in various organisms		
10	2	10. Chromosomal mutations	10.Chromosomal abnormalities in humans		
11	2	11.Cytoplasmic inheritance	11.Cytoplasmic inheritance and maternal influence, shell wrapping in the shell Lymnaea, as in Paramecium.		
12	2	12. Mutations and diseases	12.Mutations in mitochondrial DNA in humans and some diseases		
13	2	13. Synthesis DNA & RNA	13.Synthesis and molecular analysis of genetic material DNA, Experiments to prove that DNA is genetic material And RNA is the genetic material in some		
14	2	14.DNA replication	14. DNA replication Proof that multiplication is performed in a semi-conservative manner.		
15	2	15. First semester exam	15. Replication enzymes		

16	2	16. The role of RNA	16. The role of RNA, the processes of cutting and modification in its three types		
17	2	17. Translation	17. Translation (protein synthesis, Genetic code and its characteristics, Cofactors, Construction of the peptide chain		
18	2	18. One gene	18. Development of the theory of one gene – one polypeptide chain, genetic control of metabolism		
19	2	19. Eukaryotic	19. Regulation of gene expression in eukaryotic cells		
20	2	20. Prokaryotes	20. Regulating gene expression in prokaryotes		
21	2	21. Genetic mutation	21. Genetic mutation. Types according to molecular changes, mutation, Mutations are caused by radiation and some		
22	2	22. DNA damage	22. DNA damage repair systems, Transposable elements		
23	2	23. Genomics	23. Genomics Genomics: Structure of chromosomes, regulation of DNA sequences in them, DNA extraction, and clones		
24	2	24. Genetic technology Student seminar	24. Applying some literature on genetic technology, such as genetic engineering, in diagnosing some genetic diseases and sorting DNA fingerprints		
25	2	25 semester exams	Completing the human genome project		
26	2	26. Developmental genetics	25. Student seminar 26.. Developmental genetics, Apoptosis, , How the niche state is revealed from the organism's genome		
27	2	27. Population genetics	27. Population genetics genetic repositories Hardy law, Weinberg, Gene replication and influencing genetic factors		
28	2	28. Genetics and development: Chromosomal changes	28. Genetics and development: Chromosomal changes and its relationship to the emergence of species,		

29	2	29. Quiz	The chromosome number		
30	2	30. Second semester exam	doubled 29 Quiz 30. Second semester exam		

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
 10% first semester (5% theoretical + 5% practical) + 15% mid-year exam + 10% second semester (5% theoretical + 5% practical) + 2% attendance + 3% assignments and assignments = 40% endeavour.
 40% pursuit grade + 60% final exam = 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	علم الوراثة / سعد جابر تاج الدين , الوراثة العامة ، عبد الحسين الفيصل Snustad, D. P., & Simmons, M. J. (2015). Principles of genetics. John Wiley & Sons
Recommended books and references (scientific journals, reports...)	Jorde, L. B., Carey, J. C., & Bamshad, M. J. (2015). Medical genetics e-Book. Elsevier Health Sciences. Griffiths, P., & Stotz, K. (2013). Genetics and philosophy: an introduction. Cambridge University Press . Trivedi S. ,Rehman H. ,Saggu S. , Panneerselvam C. & Ghosh S. K. (2020). DNA barcoding and molecular phylogeny (Second.). Springer. MI Genetics Resource Center (2018). Genetic Inheritance Patterns. https://migrc.org/teaching-tools/genetic-inheritance-patterns/
Electronic References, Websites	Yes

Course Description Form

1. Course Name:	
CHEMICAL	
2. Course Code:	
Bio 103	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) 2 hours(practical)	
7. Course administrator's name (mention all, if more than one name)	
Name: lecturer israa hamdan Email: israa.hamdan@mu.edu.iq	
8. Course Objectives	
Course Objectives	1- Teaching students about laboratory work and dealing with tools and chemicals 2- Teaching students to prepare solutions and perform chemical calculations 3- Providing students with the skill of scientific research into cause and effect 4- Teaching students some organic reactions
9. Teaching and Learning Strategies	
Strategy	Education strategy collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series

10. Course Structure					
Week	Hou	Required	Unit or subject name	Learning	Evaluation

	rs	Learning Outcomes		method	method
1	2	knowledge	Explanation of the material in detail Review the article and Connect it to life Questions and answers Cozas	A student who knows how to handle dangerous and toxic chemicals He also knows the correct handling method in the laboratory He is good at explaining chemistry and linking it to biology, as he is a life sciences teacher In addition to the skill of chemical calculations We teach organic reactions and their benefits in daily life	Weekly, monthly, daily, written exams, and the end-of-year exam
=====					
=====					
=====					

11. Course Evaluation	
The distribution is as follows: the first semester exam is 5%, the second semester is 5%, and the half year is 15%, the first semester practical exam is 5%, and the second semester practical exam is 5%, in addition to absences 3%.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
Plant taxonomy	
2. Course Code:	
Bio 201	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: lecturer.dr. mohamed bager Hussein Email: ::Mohamed-almosawy@mu.edu.iq	
8. Course Objectives	
Course Objectives	Plant taxonomy is a very important topic in the Department of biology because classification is of great importance for the detection of its families and genera.
9. Teaching and Learning Strategies	
Strategy	Phycology is a very important topic in the Department of Life Science because algae are of primary medical importance. Several very important algae drugs have been discovered and are also nutritionally economic importance. They are an important source food to fill the shortage.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	Introduction to plant taxonomy with classification fields that include diagnosis, nomenclature and	-Lecture, use of the blackboard and presentation -Demonstration	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports

			classification, history of classification	(using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	
2	2	knowledge	Scientific name includes scientific name, genus name, and generic or local name	=====	=====
3	2	knowledge	Relationships between plants include evolutionary relationships between parents and grandparents	=====	=====
4	2	knowledge	Divide qualities in plants and include vegetative, reproductive, quantitative and qualitative qualities	=====	=====
5	2	knowledge	Seed Plants (Spermatophytes) which includes angiosperms and gymnosperms	=====	=====
6	2	knowledge	General terminology	=====	=====
7	2	knowledge	General terms	=====	=====
8	2	knowledge	Vegetative characters	=====	=====
9	2	knowledge	Root, its type and classification importance	=====	=====
10	2	knowledge	Stems, types and classification importance	=====	=====
11	2	knowledge	Leaves, their types and how important they are in classification	=====	=====
12	2	knowledge	Flowers and accessories which are considered stable qualities	=====	=====
13	2	knowledge	Fruits, types and classification significance	=====	=====
14	2	knowledge	Seeds and its types	=====	=====
15	2	knowledge	Bracts and their classification significance	=====	=====
16	2	knowledge	Pollen shapes	=====	=====
17	2	knowledge	Types of pollination and its classification importance	=====	=====
18	2	knowledge	Embryo and its classification significance	=====	=====
19	2	knowledge	Classification taxa, herbarium and botanical gardens	=====	=====
20	2	knowledge	Herbarium	=====	=====
21	2	knowledge	Garden Botanical and its importance	=====	=====
22	2	knowledge	Iraqi plants and plant wealth	=====	=====
23	2	knowledge	The importance of plant wealth	=====	=====

24	2	knowledge	Food plant	=====	=====
25	2	knowledge	Poisonous plants	=====	=====
26	2	knowledge	Medicine plant	=====	=====
27	2	knowledge	Industrial plant	=====	=====
28	2	knowledge	Split Plants	=====	=====
29	2	knowledge	Cytotaxonomy	=====	=====
30	2	knowledge	The most important axes of the study of chromosomes morphology	=====	=====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Towards the development of school administration ((theoretical and field studies), Psychology of school administration.
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name: Comparative anatomy					
2. Course Code: bio 303					
3. Semester / Year: yearly (first and second semester)					
4. Description Preparation Date:06/02/2024					
5. Available Attendance Forms: Daily class attendance					
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: professor Dr. Karima Akool Al Salihi					
Email: . Kama-akool18@mu.ed.iq					
8. Course Objectives					
Course Objectives			<ul style="list-style-type: none"> Study of comparative anatomy and details of the various body systems Chordates according to the evolutionary perspective in terms of general structure Origin, function, and evolutionary progression. 		
9. Teaching and Learning Strategies					
Strategy		<ul style="list-style-type: none"> Knowledge the origin and development of body systems in chordates Comparison with a structural and functional orientation. 			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1.	4	Knowledge	Origin & General characters of chordates	White board &	Daily examine&

				overhead projection	oral examine
2.	4	Knowledge	Classification of Chordates 1	White board & overhead projection	Daily examine& oral examine
3.	4	Knowledge	Origin & General characters of chordates	White board & overhead projection	Daily examine& oral examine
4.	4	Knowledge	Classification of Chordates 1	White board & overhead projection	Daily examine& oral examine
5.	4	Knowledge	Classification of Chordates 2	White board & overhead projection	Daily examine& oral examine
6.	4	Knowledge	Integumentary system 1	White board & overhead projection	Daily examine& oral examine
7.	4	Knowledge	Integumentary system 2	White board & overhead projection	Daily examine& oral examine
8.	4	Knowledge	Skin derivatives	White board & overhead projection	Daily examine& oral examine
9.	4	Knowledge	Muscular system 1	White board & overhead projection	Daily examine& oral examine
10.	4	Knowledge	Muscular system 2	White board & overhead projection	Daily examine& oral examine
11.	4	Knowledge	Digestive system 1	White board & overhead projection	Daily examine& oral examine
12.	4	Knowledge	Digestive system 2	White board & overhead projection	Daily examine& oral examine
13.	4	Knowledge	Digestive glands	White board & overhead projection	Daily examine& oral examine
14.	4	Knowledge	Respiratory system 1	White board & overhead projection	Daily examine& oral examine
15.	4	Knowledge	Respiratory system 2	White board & overhead projection	Daily examine& oral examine
16.	4	Knowledge	Respiratory system 3	White board &	Daily examine&

				overhead projection	oral examine
17.	4	Knowledge	Theory and practical examination	White board & overhead projection	Daily examine& oral examine
18.	4	Knowledge	Excretory system 1	White board & overhead projection	Daily examine& oral examine
19.	4	Knowledge	Excretory system 2	White board & overhead projection	Daily examine& oral examine
20.	4	Knowledge	Excretory system 3	White board & overhead projection	Daily examine& oral examine
21.	4	Knowledge	Genital system 1	White board & overhead projection	Daily examine& oral examine
22.	4	Knowledge	Genital system 2	White board & overhead projection	Daily examine& oral examine
23.	4	Knowledge	Circulatory system	White board & overhead projection	Daily examine& oral examine
24.	4	Knowledge	Heart	White board & overhead projection	Daily examine& oral examine
25.	4	Knowledge	Aortic arches	White board & overhead projection	Daily examine& oral examine
26.	4	Knowledge	Nervous system	White board & overhead projection	Daily examine& oral examine
27.	4	Knowledge	Brain	White board & overhead projection	Daily examine& oral examine
28.	4	Knowledge	Cranial	White board & overhead projection	Daily examine& oral examine
29.	4	Knowledge	Skeletal system 1	White board & overhead projection	Daily examine& oral examine
30.	4	Knowledge	Skeletal system 2	White board & overhead projection	Daily examine& oral examine

11. Course Evaluation

First month (5 theory+ 2.5 (quiz+ attendances + 5 practical) , midyear examination 15, second month (5 theory+ 2.5 (quiz+ attendances + 5 practical), final exam (18 practical + 42 theory).

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Text book of comparative anatomy
Main references (sources)	Comparative anatomy of Chordates by M A Ga H A Dauod
Recommended books and references (scientific journals, reports...)	Comparative Anatomy of Chordates by Girish Chopra R C Gupta
Electronic References, Websites	Links for comparative anatomy

Course Description Form

1. Course Name:	
جرائم حزب البعث	
2. Course Code:	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: assistant teacher hussain ali hadhood Email: hussain.hadhood @mu.edu.iq	
8. Course Objectives	
Course Objectives	The course aims to identify the crime in terms of its definition and language Terminologically, as well as the sections and types of crimes, the most prominent decisions of the Iraqi Supreme Criminal Court, what are the social and psychological crimes, and the most prominent Its effects. Learn about environmental crimes and mass grave crimes
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	Baath crimes according to documentation by the Iraqi Supreme Criminal Court in 2005	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	Theoretical, /oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	2	knowledge	Concept of crimes	=====	=====
3	2	knowledge	Definition of crimes	=====	=====
4	2	knowledge	Crime departments	=====	=====
5	2	knowledge	Types of international crimes	=====	=====
6	2	knowledge	Genocide crimes	=====	=====
7	2	knowledge	crimes against humanity	=====	=====
8	2	knowledge	War crimes	=====	=====
9	2	knowledge	Decisions of the Iraqi Supreme Criminal Court	=====	=====
10	2	knowledge	Social crimes	=====	=====
11	2	knowledge	Social effects of crimes	=====	=====
12	2	knowledge	Psychological crimes	=====	=====

13	2	knowledge	Psychological effects of crimes	=====	=====
14	2	knowledge	Violating Iraqi laws	=====	=====
15	2	knowledge	Prison and detention places of the Baath regime	=====	=====
16	2	knowledge	The political and military decisions of the Baath regime	=====	=====
17	2	knowledge	Environmental crimes of the Baath regime in Iraq	=====	=====
18	2	knowledge	Environmental crimes in Basra Governorate	=====	=====
19	2	knowledge	Genocide crimes and the use of chemical weapons in Halabja	=====	=====
20	2	knowledge	Military and radioactive contamination and mine explosions.	=====	=====
21	2	knowledge	Destruction of cities (scorched earth policy)	=====	=====
22	2	knowledge	The policy of draining and burning the marshes by the Baathist regime	=====	=====
23	2	knowledge	Destruction of orchards, forests and trees by the Baathist regime	=====	=====
24	2	knowledge	Mass grave crimes	=====	=====

25	2	knowledge	Chronological classification of genocide graves in Iraq from (1963-1978)	=====	=====
26	2	knowledge	Graves of genocide committed by the defunct Baath regime for the period 1979-2003	=====	=====
27	2	knowledge	Mass graves related to the Iran-Iraq War (1980-1988)	=====	=====
28	2	knowledge	Graves of the Barzanian Kurdish genocide of 1983	=====	=====
29	2	knowledge	Genocide graves for victims of the Anfal massacre for the period 1987-1988	=====	=====
30	2	knowledge	Extermination cemeteries Collective Victims of the Shaabani Uprising of 1991	=====	=====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 2 marks for daily preparation and daily tests

Practical (5 marks for the first monthly exam + 5 marks for the second monthly exam)+3marks
Evaluating absences and activities

60 marks (marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The Baath Party's crimes platform
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
insects	
2. Course Code:	
Bio 301	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) / Number of Units 6	
7. Course administrator's name (mention all, if more than one name)	
Name: Lecturer. dr. osama ghazi abbas Email: asama.khazi@mu.edu.iq	
8. Course Objectives	
Course Objectives	Cell biology is considered one of the very important topics in the Department of Life Sciences due to the great importance it represents in knowing the cell's structures, components, and the behavior of its divisions.
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	knowledge	Historical Overview - General Features of Insects	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports

				Classroom platform	
2	2	knowledge	Morphology of insects	====	====
3	2	knowledge	Metamorphosis	====	====
4	2	knowledge	The head and its appendages	====	====
5	2	knowledge	Mouth parts	====	====
6	2	knowledge	The thorax and its parts in insects	====	====
7	2	knowledge	Legs	====	====
8	2	knowledge	Wings - their veining - motor muscles	====	====
9	2	knowledge	The abdomen	====	====
10	2	knowledge	Growth in insects	====	====
11	2	knowledge	Digestive	====	====
12	2	knowledge	Natures of food	====	====
13	2	knowledge	Digestion and methods of digestion	====	====
14	2	knowledge	Excretory system in insects	====	====
15	2	knowledge	Taxonomy - definition - historical overview	====	====
16	2	knowledge	Classification ranks	====	====
17	2	knowledge	Division - its types - taxonomic class	====	====
18	2	knowledge	Division of insects	====	====
19	2	knowledge	Modern system of division of insects	====	====
20	2	knowledge	Classification procedures	====	====
21	2	knowledge	Diagnosis of patterns and taxonomic differentiation	====	====
22	2	knowledge	Differentiation mat in insect classification	====	====
23	2	knowledge	Differentiation mat in insect classification	====	====
24	2	knowledge	Taxonomic keys	====	====
25	2	knowledge	Nomenclature - scientific nomenclature	====	====
26	2	knowledge	Insecticidal orders	====	====
27	2	knowledge	The characteristic wings of the order Eupiptera	====	====
28	2	knowledge	Characteristics of the order Homoptera	====	====
29	2	knowledge	Characteristic wings of the Orthoptera order	====	====
30	2	knowledge	Distinctive characteristics of two-winged insects	====	====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam+20 marks final practical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	Cell Biology - Gabriel Barhoum Aziz - University of Mosul
Recommended books and references (scientific journals, reports...)	Cell Biolgy- Pollard (2017)
Electronic References, Websites	

Course Description Form


1. Course Name:	
human rights	
2. Course Code:	
UREQ102	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: assistant teacher hussain ali hadhood Email: @mu.edu.iq hussain.hadhood	
8. Course Objectives	
Course Objectives	<p>The study of man, the subject of truth, in terms of human nature and composition</p> <p>Introduction to it and its most prominent features as well as the types of rights</p> <p>These rights are defined in historical terms, and are of importance stipulated in human rights</p>
9. Teaching and Learning Strategies	
Strategy	<p>1- Lecture, use of the blackboard and presentation</p> <p>2- Demonstration (using graphs, pictures and educational films using a data projector)</p> <p>3- Interactive discussion</p>

10. Course Structure

Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	Introducing the human being as the subject of truth Manifestations of divine honor for man	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	Theoretical, /oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	2	knowledge	Human nature and formation	=====	=====
3	2	knowledge	Definition of the truth	=====	=====
4	2	knowledge	Human rights features	=====	=====
5	2	knowledge	Characteristics of human rights	=====	=====
6	2	knowledge	Types of human rights	=====	=====
7	2	knowledge	Roots of rights	=====	=====

			Man and its development in human history.		
8	2	knowledge	Human rights in ancient civilizations and Islam	=====	=====
9	2	knowledge	International Bill of Human Rights	=====	=====
10	2	knowledge	Human rights resources	=====	=====
11	2	knowledge	International sources	=====	=====
12	2	knowledge	Regional and national sources	=====	=====
13	2	knowledge	International Agreements .	=====	=====
14	2	knowledge	Regional conventions	=====	=====
15	2	knowledge	Human rights in the modern era.	=====	=====
16	2	knowledge	Rights and elections	=====	=====
17	2	knowledge	The concept and definition of elections	=====	=====

18	2	knowledge	The importance of elections	=====	=====
19	2	knowledge	Voting and referendum	=====	=====
20	2	knowledge	Human duties	=====	=====
21	2	knowledge	Restrictions on the exercise of human rights	=====	=====
22	2	knowledge	Democracy Concept	=====	=====
23	2	knowledge	History of democracy	=====	=====
24	2	knowledge	Features of a democratic system	=====	=====
25	2	knowledge	Advantages of democracy	=====	=====
26	2	knowledge	Components of democracy	=====	=====
27	2	knowledge	Constitution and democracy	=====	=====
28	2	knowledge	Civil society and democracy	=====	=====

29	2	knowledge	Contemporary democracy	=====	=====
30	2	knowledge	The relationship between human rights and democracy 	=====	=====

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	
40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 2 marks for daily preparation and daily tests	
Practical (5 marks for the first monthly exam + 5 marks for the second monthly exam)+3marks	
Evaluating absences and activities	
60 marks (marks final theoretical exam)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	human rights
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:	
Phycology	
2. Course Code:	
Bio 304	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: lecturer.dr. mohamed baqer Hussein Email: ::Mohamed-almosawy@mu.edu.iq	
8. Course Objectives	
Course Objectives	Giving a complete idea about introducing the student to the concept of management, developing the concept of school and educational administration, and learning about the concept of leadership, its functions, and the characteristics of general leadership.
9. Teaching and Learning Strategies	
Strategy	Phycology is a very important topic in the Department of Life Science because algae are of primary medical importance. Several very important algae drugs have been discovered and are also nutritionally economic importance. They are an important source food to fill the shortage.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	An introduction to algae continued to be named and important	-Lecture, use of the blackboard and presentation -Demonstration	Theoretical, practical/oral and written examinations (daily, monthly and

				(using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	midterm exam) and scientific reports
2	2	knowledge	Algae are present in various environments & the morphological and vegetative form of algae.	=====	=====
3	2	knowledge	Study of reproduction and its methods include sexual & vegetative and asexual reproduction.	=====	=====
4	2	knowledge	Study blue green algae and their general qualities	=====	=====
5	2	knowledge	Study the brown algae and learn about their composition	=====	=====
6	2	knowledge	Study the red algae and know the composition of its cell wall	=====	=====
7	2	knowledge	Study the diatoms algae and know all their properties	=====	=====
8	2	knowledge	Study of green algae	=====	=====
9	2	knowledge	Study of the economic importance of green algae	=====	=====
10	2	knowledge	Study of the economic importance of yellowish or xanthophyta algae	=====	=====
11	2	knowledge	Study cyanophyta and their general qualities	=====	=====
12	2	knowledge	The presence of cyanophyta in various environments and the morphological of algae and the vegetable form of them	=====	=====
13	2	knowledge	Comparison between blue green algae and bacteria	=====	=====
14	2	knowledge	Study the golden algae from all sides	=====	=====
15	2	knowledge	Knowledge of the economic and medical importance of golden algae	=====	=====
16	2	knowledge	Study the phaeophyta Algae from all sides	=====	=====
17	2	knowledge	Methods of isolating brown algae	=====	=====
18	2	knowledge	Types of asexual reproduction of brown algae	=====	=====
19	2	knowledge	Sexual reproduction of brown algae	=====	=====
20	2	knowledge	Study of euoglenophyta algae in terms of general qualities	=====	=====

21	2	knowledge	euoglenophytes algae life cycles	=====	=====
22	2	knowledge	Economic Importance of euglenophyta Algae	=====	=====
23	2	knowledge	Study of diatoms in terms of general qualities	=====	=====
24	2	knowledge	reproduction methods for diatoms	=====	=====
25	2	knowledge	Cellular Wall strcture And Type Of flagella And Food Stock For diatoms	=====	=====
26	2	knowledge	Representative pigments of diatoms	=====	=====
27	2	knowledge	General Features of Phytoplankton	=====	=====
28	2	knowledge	oogamous & isogamous and hetrogamos reproduction for Phytoplankton	=====	=====
29	2	knowledge	Motion Mechanism for Algae and Phytoplankton	=====	=====
30	2	knowledge	Approved foundations in the classification of algae and Phytoplankton	=====	=====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 5 marks for daily preparation and daily tests)

60 marks (40 marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	not available
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Towards the development of school administration ((theoretical and field studies), Psychology of school administration.
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name: Plant Physiology	
2. Course Code:	
Bio 403	
3. Semester / Year: 2023/2024	
4. Description Preparation Date: 1/2/2024	
5. Available Attendance Forms:	
6. Number of Credit Hours (30h) / Number of Units (6)	
7. Course administrator's name (mention all, if more than one name)	
Name: Asst. Prof. Dr. Arshad Naji Alhasnawi Email: arshad@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> The student learns about the principles of plant physiology Explaining plant physiology Filtering the basic structure of physiological processes and vital viruses
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> Presentation strategy Brainstorming strategy Teamwork strategy Discussion strategy Blended learning strategy Training and application strategy Interactive lesson strategy
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	1. Introduction to the concept of plant physiology, its importance, and its relationship to the branches of science, its properties, and the reasons for acquiring those properties, solutions, and the colloidal system.	1. Plant physiology	Use learning strategies	<ul style="list-style-type: none"> • View questions and answers • Presenting and interpreting educational situations • The student is assigned to write a report • Tasks and duties of Kozat • Monthly exams
2	2	2. Water relations of the plant cell	2. Water relations of the plant cell		
3	2	3. Diffusion: the concept, the diffusion of gases and their properties, and osmosis: the concept, ideal conditions, semi-mature and selective membranes (plant membranes)	3. Diffusion		
4	2	4. Osmotic and water potential, pressure and the relationship between them, plasma contraction (plasma, methods of measuring types of potential)	4. Water potential		
5	2	5. Phloem transport, water absorption and transport in plants: concept, mechanisms and influencing factors	5. Phloem transport		
6	2	6 Transpiration: the concept, stomata and their distribution, the mechanism of opening and closing stomata, factors affecting transpiration	6. Transpiration		
7	2	7. Mineral nutrition for plants: mineral plant components, methods of studying them, basic elements (macro, micro, and beneficial nutrients), passive absorption and its mechanisms.	7. Mineral nutrition of the plant		
8	2	8. Effective absorption: concept, evidence, mechanism, functions or physiological importance of the essential elements	8. Effective absorption		
9	2	9. Photosynthesis: overview, pigments,	9. Photosynthesis		

10	2	absorption spectrum and action spectrum, light and visible spectrum 10. Light reactions: the origin of oxygen and evidence, electron transfer, the Emberson effect, the two photosystems, and photophosphorylation.	10. Light reactions		
11	2	11. Darkness reactions: C3 and C4 plants Calvin Wahagh Slack and CAM,	11. Dark interactions		
12	2	photorespiration. 12. Factors affecting photosynthesis and phloem transport: general overview, features, and mechanism	12. Phloem transport		
13	2	13. Respiration: glycosylation and the Cres cycle, the pentose pathway (the fourth week of phosphorylation and glyoxylate, the respiratory factor).	13. Breathing		
14	2	14. Plant growth and formation: the concept of growth, formation and development, places (the first week of growth and types of meristems, growth kinetics)	14. Plant growth and formation		
15	2	15. Exam	15. Exam		
16	2	16. Growth regulators and plant hormones: definitions, auxins (discovery, distribution in plants, transport, plant biosynthesis.	16. Growth regulators and plant hormones		
17	2	17. Effects, physiological, sensitivity of plant organs, decay	17. Physiological effects		
18	2	18. Gibberellins and cytokines: discovery and physiological effects	18. Gibberellins and cytokines		
19	2	19. Acidic acid and ethylene: discovery and physiological effects	19. Acidic acid and ethylene		
20	2	20. Photoperiod and flowering, panicle	20. Photoperiod		
21	2	21. Discussing reports	21. Discussing reports		
22	2	22. Phytochrome: concept, conditions and physiological effects	22. Phytochrome		

23	2	23. Plant movements: affiliative and positional movements (Nasties)	23. Plant movements		
24	2	24. Seed germination and latency	24. Germination		
25	2	25. Exam	25. Exam		

. 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

10% first semester (5% theoretical + 5% practical) + 15% mid-year exam + 10% second semester (5% theoretical + 5% practical) + 2% attendance + 3% assignments and assignments = 40% endeavour.

40% pursuit grade + 60% final exam = 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	اساسيات فسيولوجيا النبات. جامعة د. بسام طه ياسين (2001) قطر
Recommended books and references (scientific journals, reports...)	<p>ص Plant Physiology صبحي در هاب . فسيولوجيا النبات 232-219 ، محتوى الكتاب مصدره موسوعة النبات ، مركز سوزان مبارك الاستكشافى العلمى ، الاعداد والاشراف العلمى الأستاذ الدكتور محمد حامد ادريس.</p> <p>اساسيات كيميوحيوي وفسيولوجيا النبات.</p> <p>Taiz, L., Zeiger, E., Møller, I. M., & Murphy, A. (2015). Plant physiology and development (No. Ed. 6). Sinauer Associates Incorporated.</p> <p>Lambers, H., Chapin, F. S., & Pons, T. L. (2008). Plant physiological ecology (Vol. 2, pp. 11-99). New York: Springer.</p> <p>Lazar, T. (2003). Taiz, L. and Zeiger, E. Plant physiology. 3rd edn.</p> <p>Bhatla, S. C., & Lal, M. A. (2023). Plant physiology, development and metabolism. Springer Nature.</p> <p>Vince Ördög (2011). Plant physiology. Az Agrármérnöki MSc szak tananyagfejlesztése TÁMOP-4.1.2-08/1/A-2009-0010 projekt</p>
Electronic References, Websites	Yes

Course Description Form

1. Course Name:	
Fungi	
2. Course Code:	
Bio 302	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours (theoretical) 2 hours(practical)	
7. Course administrator's name (mention all, if more than one name)	
Name:assistant teacher Zainab muhsen hassan Email: zainabmuhsen@mu.edu.iq	
8. Course Objectives	
Course Objectives	Studying fungi, their classification and ways of living in nature, the economic importance of fungi, and identifying some of their harmful and beneficial effects.
9. Teaching and Learning Strategies	
Strategy	1- Lecture, use of the blackboard and presentation 2- Demonstration (using graphs, pictures and educational films using a data projector) 3- Interactive discussion 4- Self-education

10. Course Structure					
Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	knowledge	Definition and history of mycology	-Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and	Theoretical, practical/oral and written examinations (daily, monthly and

				educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform	midterm exam) and scientific reports
2	2	knowledge	Growth in fungi	=====	=====
3	2	knowledge	The importance of fungi	=====	=====
4	2	knowledge	General characteristics of fungi	=====	=====
5	2	knowledge	Cultivation and nutrition of fungi	=====	=====
6	2	knowledge	Different life styles of fungi	=====	=====
7	2	knowledge	Reproduction in fungi	=====	=====
8	2	knowledge	Structure of fungi	=====	=====
9	2	knowledge	The economic importance of fungi	=====	=====
10	2	knowledge	Classification of fungi	=====	=====
11	2	knowledge	Ways of living of fungi	=====	=====
12	2	knowledge	Mycotoxins	=====	=====
13	2	knowledge	Kingdom of primitive fungi	=====	=====
14	2	knowledge	Division of gelatinous fungi	=====	=====
15	2	knowledge	Study of general features, their classes, ranks, and life cycle	=====	=====
16	2	knowledge	Class: Plasmodiophorom	=====	=====
17	2	knowledge	Study of their characteristics and examples of some fungi and their life cycles	=====	=====
18	2	knowledge	Kingdom: Straminipila	=====	=====
19	2	knowledge	Division: oomycota	=====	=====
20	2	knowledge	Study their characteristics and classify them into important orders and	=====	=====

			families		
21	2	knowledge	order : Saproleginales	=====	=====
22	2	knowledge	Study its features, importance and life cycle	=====	=====
23	2	knowledge	Order: Peronosporales Family:pytgiaceae Family:peronosporales	=====	=====
24	2	knowledge	Study its features and give examples	=====	=====
25	2	knowledge	Family: Albuginaceae Study its features and give examples	=====	=====
26	2	knowledge	Kingdom : true fungi	=====	=====
27	2	knowledge	Division: Chytridiomycota	=====	=====
28	2	knowledge	Division: Zygomycota	=====	=====
29	2	knowledge	Division: Basidiomycota	=====	=====
30	2	knowledge	Division:Ascomycota	=====	=====

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	
40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 2 marks for daily preparation and daily tests	
Practical (5 marks for the first monthly exam + 5 marks for the second monthly exam)+3marks	
Evaluating absences and activities	
60 marks (marks final theoretical exam)	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Basics of mycology Kingdom of fungi
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name: Biostatistics	
2. Course Code:	
Math205	
3. Semester / Year:	
2023-2024/ second stage	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: 2 hours per week	
6. Number of Credit Hours (Total) / Number of Units (Total):	
64 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr.Mohammed Radwan Mohmoud Email: modrn@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> 1- Identify the concept of inferential and inferential statistics. 2- Identify the null and alternative statistical hypotheses and how to verify them. 3- Identify the differences between statistics. 4- Enabling students to be able to interpret statistical results. 5- Enabling students to be able to distinguish between how to use nonparametric statistics. • 6- Enabling students to apply statistical methods appropriately in light of each topic.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> • Direct Instruction: Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities. • Blended Learning: Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books. • Collaboration and Interaction: Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning. • Active Learning: Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts. • Problem-Based Learning: Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2		Introduction to statistics		Exams , reports, discussions Quizzes
Second	2		Population and sample/methods for selecting samples/parameters and estimates/sample errors		Exams , reports, discussions Quizzes
Third	2		Measures of central tendency 1		Exams , reports, discussions Quizzes
Fourth	2		Measures of central tendency 2		Exams , reports, discussions Quizzes
Fifth	2		Data tab - tabular display		Exams , reports, discussions Quizzes
Sixth	2		• Frequency distribution table.		Exams , reports, discussions Quizzes
Seventh	2		• Tabular display of metadata.		Exams , reports, discussions Quizzes
Eighth	2		• Frequency distribution table for quantitative data.		Exams , reports, discussions Quizzes
Ninth	2		• Ascending and descending clustered frequency table.		Exams ,
Tenth	2		Measures of dispersion1		reports,
Eleventh	2		Measures of dispersion2		discussions
Twelfth	2		Measures of dispersion3		Quizzes
Thirteenth	2		Monthly test		Exams ,
Fourteenth	2		Statistical hypotheses/what are statistical hypotheses/null		reports,

			and alternative hypotheses		
Fifteenth	2	Monthly exams	The chances of the researcher making an error when testing		discussions
Sixteenth	2		hypotheses/type 1 alpha error/type 2		Quizzes
Seventeenth	2		beta error		discussions
Eighteenth	2		Variance – Standard		reports,
Nineteenth	2		Deviation Range		discussions
Twentieth	2		– Mean Deviation		Quizzes
Twenty-first	2		Standard error - coefficient of variation		Exams ,
Twenty-second	2		To employ statistical hypotheses in research		reports,
Twenty-third	2		To reduce the possibility of the researcher making an error when testing the hypotheses, type 1 alpha error and type 2 beta error		discussions
Twenty-fourth	2		To employ the level of significance / degrees of freedom / examples using the statistical package		Quizzes
Twenty-fifth	2		To know the inferential statistics of the monthly test		Exams ,
Twenty-sixth	2		To employ statistical hypotheses in research		reports,
Twenty-seventh	2		z test		discussions
Twenty-eighth	2		T test		Quizzes
Twenty-ninth	2		F test		Exams ,
Thirtieth	2		Monthly exams		reports,

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12. Learning and Teaching Resources

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

Course Description Form

1. Course Name:	
Computer	
2. Course Code:	
UREQ 103	
3. Semester / Year:	
2023-2024/ first stage	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: 2 hours per week	
6. Number of Credit Hours (Total) / Number of Units (Total):	
64 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Shaimaa Kareem Abdullah Email: shaimaa.kareem@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> To effectively use computers and understand operating systems, file management, and folder organization. To use Microsoft Office programs such as Word, Excel, and PowerPoint. To navigate the internet, search for information, and communicate through email and web pages.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> Direct Instruction: Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities. Blended Learning: Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books. Collaboration and Interaction: Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning. Active Learning: Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts. Problem-Based Learning: Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	A general introduction to computers and an introduction to computers	Computer Basics.	practical	Daily quizzes + Questions and Answers.
Second	2	Identify the hardware and software parts of the computer	Computer Basics.	practical	Daily quizzes.
Third	2	Number systems/binary system	Number Systems.	practical	Daily quizzes + Questions and Answers.
Fourth	2	Decimal system	=====	practical	Daily quizzes + Questions and Answers.
Fifth	2	Converting from the binary system to the decimal system	=====	practical	Daily quizzes + Questions and Answers.
Sixth	2	Converting from the decimal system to the binary system	=====	practical	Questions and Answers.
Seventh	2	Addition and subtraction operations in binary	=====	practical	Questions and Answers.
Eighth	2	Multiplication and division operations in binary	=====	practical	Daily quizzes + Questions and Answers.
Ninth	2	Algorithms and their types	=====	practical	Daily quizzes + Questions and Answers.
Tenth	2	Sequential algorithm and conditional algorithm	=====	practical	Questions and Answers.
Eleventh	2	Recursive algorithm	=====	practical	Daily quizzes + Oral questions and answers.
Twelfth	2	Applications to algorithms	=====	practical	Daily quizzes.
Thirteenth	2	Flowcharts	=====	practical	Daily quizzes + Questions and Answers.
Fourteenth	2	Applications of Flowcharts	=====	practical	
Fifteenth	2	Benefits of Flowcharts	=====	practical	Daily quizzes + Questions and Answers.
Sixteenth	2	Introduction to computer operating systems	Windows Operating System	practical	Daily quizzes + Questions and Answers.
Seventeenth	Mid-year break				
Eighteenth	2	Interacting with Desktop Icons and Understanding Their Functions	Windows Operating System.	practical	Daily quizzes + Questions and Answers.
Nineteenth	2	File Commands (Delete, Copy, Cut, Paste, etc.) - Folder Commands (Create Folder, Delete, Copy, Cut, Paste, etc.)	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.
Twentieth	2	Understanding the Contents of My Computer	Windows Operating System.	practical	Daily quizzes + Questions and Answers.
Twenty-first	2	Working with the Recycle Bin and Control Panel	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.
Twenty-second	2	System Settings, Display, Sound, Using Menus and Commands	Windows Operating System.	practical	Daily quizzes + Questions and Answers.
Twenty-third	2	Creating and Editing Simple Text Documents using WordPad	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.
Twenty-fourth	2	Performing basic arithmetic operations using a Calculator and providing tools for drawing and editing images and graphics through Paint.	Windows Operating System.	practical	Daily quizzes + Practical skills.
Twenty-fifth	2	Contents of the Settings window.	Windows Operating System.	practical	Daily quizzes + Questions and Answers.

Twenty-sixth	2	Understanding the commands in the computer system's Settings.	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.
Twenty-seventh	2	Security and protection in the Windows system.	Windows Operating System.	practical	Daily quizzes + Questions and Answers.
Twenty-eighth	2	Understanding and Using Advanced Computer System Tools	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.
Twenty-ninth	2	Introduction to the internet and using the browser in the system.	Windows Operating System.	practical	Daily quizzes + Practical skills.
Thirtieth	2	Browsing the internet and conducting searches through it.	Windows Operating System.	practical	Daily quizzes + Oral questions and answers.

11. Course Evaluation

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of Computer and its Office applications, Part 2: Microsoft Office 2010 By Dr. Ziad Mohammed Aboud, Mr. Ghassan Hameed Abdul Majeed, and Dr. Mustafa Diaa Al-Husseini
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	1– https://www.microsoft.com/ar-sa/windows 2– https://support.microsoft.com/ar-sa/windows/%D8%A7%D9%84%D8%A7%D8%AA%D8%B5%D8%A7%D9%84-%D8%A8%D8%B4%D8%A8%D9%83%D8%A9-wi-fi-%D9%81%D9%8A-windows-1f881677-b569-0cd5-010d-e3cd3579d263 3– Websites accessible through Google Chrome.

Course Description Form

1. Course Name:	
Computer	
2. Course Code:	
MUR201	
3. Semester / Year:	
2023-2024/ second stage	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: 2 hours per week	
6. Number of Credit Hours (Total) / Number of Units (Total):	
64 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Shaimaa Kareem Abdullah Email: shaimaa.kareem@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> To effectively use computers and understand operating systems, file management, and folder organization. To use Microsoft Office programs such as Word, Excel, and PowerPoint. To navigate the internet, search for information, and communicate through email and web pages.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> Direct Instruction: Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities. Blended Learning: Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books. Collaboration and Interaction: Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning. Active Learning: Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts. Problem-Based Learning: Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Introduction to the system	Windows operating system	practical	Daily Tests + Questions and Answers
Second	2	Using software in the system	Windows operating system	practical	Daily Tests + Questions and Answers
Third	2	File and folder management in the system	Windows operating system	practical	Daily Tests + Practical Task Evaluation
Fourth	2	System settings, screen, and sound, using menus and commands	Windows operating system	practical	Daily Tests + Questions and Answers
Fifth	2	Internet connectivity and using the browser in the system	Windows operating system	practical	Daily Tests + Practical Skills
Sixth	2	Windows System Security and Protection	Windows operating system	practical	Daily Tests + Questions and Answers
Seventh	2	Familiarizing with Word Program Tabs and Toolbars	word	practical	Daily Tests + Practical Skills
Eighth	2	Home tab: Clipboard, Font, and Paragraph groups	word	practical	Daily Tests + Practical Task Evaluation
Ninth	2	Paragraph group and Sort group, View tab: Document Views group	word	practical	Daily Tests + Questions and Answers
Tenth	2	Table Tools tab: Design and Layout groups	word	practical	Daily Tests + Questions and Answers
Eleventh	2	Graphic group, Picture Tools group, Hyperlinks group	word	practical	Daily Tests + Practical Skills
Twelfth	2	Header & Footer group, Text group, Symbols group	word	practical	Daily Tests + Questions and Answers
Thirteenth	2	References tab, Table of Contents group, Footnotes group	word	practical	Daily Tests + Practical Task Evaluation
Fourteenth	2	References group, Citations & Bibliography group, Captions group, Index group, Sources group, Mailings tab, Mail Merge group	word	practical	Daily Tests + Questions and Answers
Fifteenth	2	Insert group, Writing and Inserting Fields group, Preview Results group	word	practical	Daily Tests + Questions and Answers
Sixteenth	2	Review tab, Proofing and Language group, Comments group, Tracking group	word	practical	Daily Tests + Practical Skills
Seventeenth	Mid-year break				
Eighteenth	2	Understanding and using the Excel program interface and its basic components.	Excel	practical	Daily tests + Questions and Answers
Nineteenth	2	Ability to create and format tables and data in Excel.	Excel	practical	Daily tests + Questions and Answers
Twentieth	2	Knowing how to enter and edit data in cells.	Excel	practical	Daily tests + Oral Questions and Answers
Twenty-first	2	Ability to create simple charts and diagrams to visualize data.	Excel	practical	Daily tests + Questions and Answers

Twenty-second	2	Dealing with lists and performing basic operations such as adding, deleting, and modifying.	Excel	practical	Daily tests + Oral Questions and Answers
Twenty-third	2	Using simple formulas and basic mathematical functions in Excel such as SUM, AVERAGE, and COUNT	Excel	practical	Daily tests + Practical Skills
Twenty-fourth	2	Using built-in tools in Excel to analyze data and perform advanced calculations.	Excel	practical	Daily tests + Questions and Answers
Twenty-fifth	2	Dealing with lists and performing basic operations such as adding, deleting, and modifying.	Excel	practical	Daily tests + Oral Questions and Answers
Twenty-sixth	2	Analyzing data in lists using pivot tables and charts.	Excel	practical	Daily tests + Questions and Answers
Twenty-seventh	2	Understanding and using logical functions in Excel such as IF, AND, and OR.	Excel	practical	Daily tests + Oral Questions and Answers
Twenty-eighth	2	Understanding and using advanced tools in Excel for statistical analysis and complex calculations	Excel	practical	Daily tests + Practical Skills
Twenty-ninth	2	Using built-in tools in Excel to analyze data and perform advanced calculations.	Excel	practical	Daily tests + Oral Questions and Answers
Thirtieth	2	Dealing with lists and performing basic operations such as adding, deleting, and modifying.	Excel	practical	Daily tests + Questions and Answers

11. Course Evaluation

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of Computer and its Office applications, Part 2: Microsoft Office 2010 By Dr. Ziad Mohammed Aboud, Mr. Ghassan Hameed Abdul Majeed, and Dr. Mustafa Diaa Al-Husseini
Main references (sources)	
Recommended books and references (scientific journals, reports...)	1- "Beginning Microsoft Word 2010" by T.Y. Anderson and Guy Hart-Davis. 2- "Excel 2019 Bible" by Michael Alexander, Richard Kusleika, and John Walkenbach. 3- "Excel 2019: The Comprehensive Guide" by Mohamed El-Ghandour and Ahmed Khalifa.
Electronic References, Websites	1- https://www.microsoft.com/ar-eg/microsoft-365/excel 2- https://www.microsoft.com/ar-eg/microsoft-365/word 3- https://support.microsoft.com/ar-eg/word

Course Description Form

1. Course Name: Biochemistry	
2. Course Code:	
BIO204	
3. Semester / Year: Year	
2023-2024/ second stage	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
2 hours / week	
6. Number of Credit Hours (Total) / Number of Units (Total):	
60 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Jawad K. Muraih Email: jmuraih@mu.edu.iq	
8. Course Objectives	
Course Objectives	<ul style="list-style-type: none"> To effectively use computers and understand operating systems, file management, and folder organization. To use Microsoft Office programs such as Word, Excel, and PowerPoint. To navigate the internet, search for information, and communicate through email and web pages.
9. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> Direct Instruction: Involves the teacher providing guidance, transferring knowledge and concepts, presenting information clearly, and guiding discussions and learning activities. Blended Learning: Aims to integrate traditional and electronic elements in the learning process. Modern technology and electronic tools are used alongside traditional methods such as face-to-face lessons and printed books. Collaboration and Interaction: Encourages collaboration between learners and between the teacher and students, including group work, discussions, and interactive learning. Active Learning: Encourages students to actively participate in the learning process, including engaging in hands-on activities and practical application of concepts. Problem-Based Learning: Focuses on solving real problems and challenges that students face. This includes problem analysis and application of strategies to solve them.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Learning and teaching	Cells, Water and Buffers	ppt and white board	Quiz and discussion
Second	2	Learning and teaching	Bioenergetics	ppt and white board	Quiz and discussion
Third	2	Learning and teaching	Carbohydrates, Monosaccharides	ppt and white board	Quiz and discussion
Fourth	2	Learning and teaching	Oligo and polysaccharides	ppt and white board	Quiz and discussion
Fifth	2	Learning and teaching	Amino acids	ppt and white board	Quiz and discussion
Sixth	2	Learning and teaching	Peptides and proteins	ppt and white board	Quiz and discussion
Seventh	2	Learning and teaching	Protein separation and purification	ppt and white board	Quiz and discussion
Eighth	2	Learning and teaching	Protein structures	ppt and white board	Quiz and discussion
Ninth	2	Learning and teaching	Protein denaturation and renaturation	ppt and white board	Quiz and discussion
Tenth	2	Knowledge	Exam		
Eleventh	2	Learning and teaching	Fatty acids, structures and properties	ppt and white board	Quiz and discussion
Twelfth	2	Learning and teaching	Lipids, membrane lipids	ppt and white board	Quiz and discussion
Thirteenth	2	Learning and teaching	Enzymes, classification and roles	ppt and white board	Quiz and discussion
Fourteenth	2	Learning and teaching	Effect of enzymes on activation energy	ppt and white board	Quiz and discussion
Fifteenth	2	Learning and teaching	Enzyme kinetics	ppt and white board	Quiz and discussion
Sixteenth	2	Learning and teaching	Enzyme inhibition	ppt and white board	Quiz and discussion
Seventeenth	Mid-year break				
Eighteenth	2	Learning and teaching	Nucleotides and nucleosides	ppt and white board	Quiz and discussion
Nineteenth	2	Learning and teaching	DNA and RNA	ppt and white board	Quiz and discussion
Twentieth	2	Learning and teaching	Chargaff's rules in the double-stranded DNA	ppt and white board	Quiz and discussion
Twenty-first	2	Learning and teaching	DNA as carrier of genetic information	ppt and white board	Quiz and discussion
Twenty-second	2	Learning and teaching	Gene expression and replication	ppt and white board	Quiz and discussion
Twenty-third	2	Learning and teaching	Protein synthesis, translation	ppt and white board	Quiz and discussion
Twenty-fourth	2	Knowledge	Exam		
Twenty-fifth	2	Learning and teaching	Metabolism, significant in medicine	ppt and white board	Quiz and discussion
Twenty-sixth	2	Learning and teaching	Glucose metabolism, Glycolysis	ppt and white board	Quiz and discussion
Twenty-seventh	2	Learning and teaching	Pyruvate degradation in mitochondria, TCA cycle	ppt and white board	Quiz and discussion
Twenty-eighth	2	Learning and teaching	Respiratory chain process	ppt and white board	Quiz and discussion
Twenty-ninth	2	Learning and teaching	Gluconeogenesis process	ppt and white board	Quiz and discussion

Thirtieth	2	Knowledge	Review	ppt and white board	Quiz and discussion
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11. Course Evaluation

- Monthly tests for academic subjects.
- Daily tests with multiple-choice questions for academic subjects.
- Oral assessment through engaging students in discussions.
- Practical exams.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of Biochemistry by Lehninger
Main references (sources)	Biochemistry Notes
Recommended books and references (scientific journals, reports...)	Fundamentals of Biochemistry by Voet and Voet
Electronic References, Websites	Electronic classroom

Course Description Form

1. Course Name:					
Foundations of education					
2. Course Code:					
CREEQ100					
3. Semester / Year:					
2023/ 2024					
4. Description Preparation Date:					
28/2/ 2024					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 hours/per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Noor AL Huda Mohammed Email: nooralhuda.mhmd@edu.iq					
8. Course Objectives					
Course Objectives Introducing students to the principles and foundations of education				<ul style="list-style-type: none"> Historical basis. Social basis. Application and exercise for educational field. 	
9. Teaching and Learning Strategies					
Strategy		Modern and classical teaching method and their combination			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	2 hours	Understanding the meaning of education	Understanding the meaning of education	Speed dialogue and discussion	Speed dialogue and discussion
Second	2 hours	Understanding the meaning of education	Understanding the meaning of education	Speed dialogue and discussion	Speed dialogue and discussion
Third	2 hours	The historical basis of the foundations of education	The historical basis of the foundations of education	Speed dialogue and discussion	Speed dialogue and discussion
Fourth	2 hours	The historical basis of the foundations of education	The historical basis of the foundations of education	Speed dialogue and discussion	Speed dialogue and discussion
Fifth	2 hours	The historical basis of the foundations of education	The historical basis of the foundations of education	Speed dialogue and discussion	Speed dialogue and discussion
		The social basis of education	The social basis of education	Speed dialogue and discussion	Speed dialogue and discussion
		The social basis of education	The social basis of education	Speed dialogue and discussion	Speed dialogue and discussion
Sixth	2 hours	The foundations of ancient breeding	The foundations of ancient breeding	Speed dialogue and discussion	Evaluation Questions
Seventh	2 hours	Exam	Exam	Exam	Evaluation Questions

Eighth	2 hours	Theories of education	Theories of education	Speech dialogues and discussion	Evaluation Questions
Ninth	2 hours	Theories of education	Theories of education	Speech dialogues and discussion	Exam
Tenth	2 hours	Theories of education	Theories of education	Speech dialogues and discussion	Speech dialogues and discussion
Eleventh	2 hours	Education among the primitives	Education among the primitives	Speech dialogues and discussion	Speech dialogues and discussion
Twelfth	2 hours	Education among the primitives	Education among the primitives	Speech dialogues and discussion	Speech dialogues and discussion
Fourteenth	2 hours	Education in the Mesopotamian civilization	Education in the Mesopotamian civilization	Speech dialogues and discussion	Speech dialogues and discussion
Fifteenth	2 hours	Education in the Mesopotamian civilization	Education in the Mesopotamian civilization	Speech, dialogue and discussion	Speech dialogues and discussion

Sixteenth	2 hours	Education in the Pharaonic civilization	Education in the Pharaonic civilization	ialogu and discu ssion	Evaluation Questions
sevente enth	2 hours	Education in the Pharaonic civilization	Education in the Pharaonic civilization	peech, ialogu and scussi on	Evaluation Questions
eighteen th	2 hours	Education in the Pharaonic civilization	Education in the Pharaonic civilization	peech, ialogu and scussi on	Evaluation Questions
nineteen th	2 hours	Education in the Pharaonic civilization	Education in the Pharaonic civilization	peech, ialogu and scussi on	Evaluation Questions
twentiet h	2 hours	Education in the Pharaonic civilization	Education in the Pharaonic civilization	Exam	Evaluation Questions
Twenty-first	hours	Chinese Education	Chinese Education	peech, ialogu and discu ssion	Evaluation Questions
	2 hours	Chinese Education			

Twenty-third tithes	2 hours	Chinese Education	Chinese Education	peech, ialogu and scussi on	Evaluation Questions
Twenty-fourth	2 hours	Exam	Exam	peech, ialogu and scussi on	Evaluation Questions
Twenty-fifth	2 hours	Modern and Contemporar y Education	Modern and Contemporary Education		
Twenty-sixth	2hors	Modern and Contemporar y Education	Modern and Contemporary Education	peech, ialogu and scussi on	Evaluation Questions
Twenty-seventh	2hours	Modern and Contemporar y Education	Modern and Contemporary Education	peech, ialogu and scussi on	Evaluation Questions
Twenty-ninth	2 hours	Modern and Contemporar y Education	Modern and Contemporary Education		Evaluation Questions
Thirty-ninth	2 hours	exam	Final exam	Final exam	Final exam

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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 isn't any
Main references (sources)	Modern and classical teaching method and their combination
Recommended books and references (scientific journals, reports...)	Modern and classical teaching method and their combination
Electronic References, Websites	All related sites

Course Description Form

1. Course Name:	
English Language	
2. Course Code:	
MUR 101	
3. Semester / Year:	
2023-2024	
4. Description Preparation Date:	
2023-2024	
5. Available Attendance Forms	
: Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total):	
1 hour (theoretical)	
7. Course administrator's name (mention all, if more than one name)	
Name: Assistant Professor Munthir	
Email: munthirshakir@mu.edu.iq	
8. Course Objectives	
Course Objectives	The objective is to help students acquire and improve their skills at a beginner level. This includes building vocabulary, improving pronunciation, and developing grammatical understanding.
9. Teaching and Learning Strategies	
Strategy	1. Emphasize interactive and meaningful communication in English. Encourage students to engage in pair work, group discussions, and role-plays to practice their speaking and listening skills. 2- Lecture, use of the blackboard and presentation 3- Demonstration (using graphs, pictures and educational films using a data projector) 4- Interactive discussion 45- Self-education

10. Course Structure

Week	Hou rs	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	knowledge	<ul style="list-style-type: none"> - Introduction to the course and syllabus overview - Greetings and introductions - Numbers, plurals, and basic vocabulary 	<ul style="list-style-type: none"> -Lecture, use of the blackboard and presentation -Demonstration (using graphs, pictures and educational films using a data projector) -Interactive discussion -Self-education - Open educational classes using the Classroom platform 	Theoretical, practical/oral and written examinations (daily, monthly and midterm exam) and scientific reports
2	1	knowledge	vocabulary related to countries. <ul style="list-style-type: none"> - Questions and Answers in 	=====	=====
3	1	knowledge	<ul style="list-style-type: none"> - Vocabulary of jobs 	=====	=====
4	1	knowledge	<ul style="list-style-type: none"> - Presenting and practicing - The alphabet 	=====	=====
5	1	knowledge	Simple present tense (forms and structures).	=====	=====
6	1	knowledge	Negatives and Questions	=====	=====
7	1	knowledge	Personal information	=====	=====
8	1	knowledge	Social Expressions (I)	=====	=====

9	1	knowledge	Mid-term Exam	=====	=====
10	1	knowledge	' vocabulary related to family and friends	=====	=====
11	1	knowledge	Possessive pronouns (our, their)	=====	=====
12	1	knowledge	Sports/Food/Drinks • Present Simple- I/you/we/they • a/an	=====	=====
13	1	knowledge	Languages and nationalities • Numbers and prices	=====	=====
14	1	knowledge	The time • Present Simple -- he/she • always/sometimes/never	=====	=====
15	1	knowledge	Words that go together • Days of the week	=====	=====
16	1	knowledge	Exam	=====	=====
17	1	knowledge	this/that • Adjectives • Can I ... '	=====	=====
18	1	knowledge	Question words • me/him/us/them	=====	=====
19	1	knowledge	Directions	=====	=====
20	1	knowledge	Prepositions	=====	=====
21	1	knowledge	- irregular verbs • have/do/go " When's your birthday?	=====	=====
22	1	knowledge	Saying years • was/were born	=====	=====
23	1	knowledge	Past Simple - regular and irregular	=====	=====
24	1	knowledge	• Questions and negatives	=====	=====
25	1	knowledge	• Sport and leisure terms	=====	=====
26	1	knowledge	Adjective+ noun	=====	=====
27	1	knowledge	can/can't Adverbs	=====	=====

28	1	knowledge	I'd like- some/any • In a restaurant • Signs all around	=====	=====
29	1	knowledge	Colours and clothes • Present Continuous	=====	=====
30	1	knowledge	Opposite verbs • What's the matter?	=====	=====

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

40 marks (5 marks for the first monthly exam + 5 marks for the second monthly exam + 15 marks for the midterm exam) + 2 marks for daily preparation and daily tests

Practical (5 marks for the first monthly exam + 5 marks for the second monthly exam)+3marks
Evaluating absences and activities

60 marks (marks final theoretical exam)

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Headway for beginners
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	Websites available on Google Chrome

Course Description Form

1. Course Name:					
Developmental Psychology					
2. Course Code:					
CREQ201					
3. Semester / Year:					
2023/ 2024					
4. Description Preparation Date:					
28/2/ 2024					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 hours/per week					
7. Course administrator's name (mention all, if more than one name)					
Name: Noor AL Huda Mohammed Email: nooralhuda.mhmd@edu.iq					
8. Course Objectives					
Course Objectives Introducing students to the principles and Developmental Psychology				<ul style="list-style-type: none"> Historical basis. Social basis. Application and exercise for educational field. 	
9. Teaching and Learning Strategies					
Strategy		Modern and classical teaching method and th combination			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method

First	2 hours	Developmental Psychology	Understanding the meaning of education	Speed dialogue and discussion	Speed dialogue and discussion
Second	2 hours	Developmental Psychology	Understanding the meaning of education	Speed dialogue and discussion	Speed dialogue and discussion
Third	2 hours	Understanding the meaning of education	The historical basis of the foundations of education	Speed dialogue and discussion	Speed dialogue and discussion
Fourth	2 hours	The historical basis of development	The historical basis of the foundations of education	Speed dialogue and discussion	Speed dialogue and discussion
Fifth	2 hours	Developmental psychology	The social basis of development	Speed dialogue and discussion	Speed dialogue and discussion
Sixth	2 hours	The historical basis of development	The foundations of ancient breeding	Speed dialogue and discussion	Evaluation Questions
Seventh	2 hours	Developmental psychology	Exam	Exam	Evaluation Questions

Eighth	2 hours	The social basis of education	Theories of education	Speech dialogue and discussion	Evaluation Questions
Ninth	2 hours	The foundations of ancient breeding	Theories of education		Exam
Tenth	2 hours	Exam		Speech dialogue and discussion	Speech dialogue and discussion
Eleventh	2 hours	Theories of Psychology	Theories of education		
Twelfth	2 hours	Theories of Psychology	Theories of Psychology	Speech dialogue and discussion	Speech dialogue and discussion
Fourteenth	2 hours	Theories of Psychology	Laws of Developmental Psychology	Speech dialogue and discussion	Speech dialogue and discussion
Fifteenth	2 hours	Laws of Developmental Psychology	Laws of Developmental Psychology	Speech, dialogue and discussion	Speech dialogue and discussion

Sixteenth	2 hours	Laws of Developmental Psychology	Laws of Developmental Psychology	dialogue and discussion	Evaluation Questions
seventeenth	2 hours	Laws of Developmental Psychology	Laws of Developmental Psychology	speech, dialogue and discussion	Evaluation Questions
eighteenth	2 hours	Laws of Developmental Psychology	Laws of Developmental Psychology	speech, dialogue and discussion	Evaluation Questions
nineteenth	2 hours	Education in the Pharaonic civilization	Psychology in the Pharaonic civilization	speech, dialogue and discussion	Evaluation Questions
twentieth	2 hours	Psychology in the Pharaonic civilization	Psychology in the Pharaonic civilization	Exam	Evaluation Questions
Twenty-first	hours		Education in the Pharaonic civilization	speech, dialogue and discussion	Evaluation Questions
	2 hours		Chinese Education		

Twenty-third tithes	2 hours	Education in the Pharaonic civilization	Chinese Education	speech, dialogue and discussion	Evaluation Questions
Twenty-fourth	2 hours	Education in the Pharaonic civilization	Exam	speech, dialogue and discussion	Evaluation Questions
Twenty-fifth	2 hours	Education in the Pharaonic civilization	Modern and Contemporary Education		Evaluation Questions
Twenty-sixth	2 hours	Education in the Pharaonic civilization	Modern and Contemporary Education	speech, dialogue and discussion	Evaluation Questions
Twenty-seventh	2 hours	Psychology Chinese	Modern and Contemporary Education	speech, dialogue and discussion	Evaluation Questions
Twenty-ninth	2 hours	Psychology in the Pharaonic civilization	Modern and Contemporary Education		Evaluation Questions
Thirty-ninth	2 hours	Final exam	Final exam	Final exam	Final exam

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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

Exam 1: 10 mark

Exam2: 15 mark

Daily report: 2 mark

Attendance: 3 mark

Exam 3: 10 mark

Final exam: 60 mark

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	There isn't any
Main references (sources)	Modern and classical teaching method and their combination
Recommended books and references (scientific journals, reports...)	Modern and classical teaching method and their combination
Electronic References, Websites	All related sites