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: University of Anbar

Faculty/Institute College of Basic Education – Hadithia

Scientific Department: General Sciences

Academic or Professional Program Name Bachelor's degree in general sciences

Final Certificate Name: Bachelor's degree in general sciences

Academic System: quarterly

Description Preparation Date: **7 / 3 / 2024**

File Completion Date: **7 / 3 / 2024**

Signature: **Malath A. Hamed**

Head of Department Name:

Date: **8 / 3 / 2024**

Signature: **Ahmed Ragab Mohammed**

Scientific Associate Name:

Date: **8 / 3 / 2024**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: **8 / 3 / 2024**

Signature:

Approval of the Dean

Prof.Dr. Mudhir Abed Ali

1. Program Vision

The Department of General Sciences seeks to prepare university teachers with distinctive specifications and scientific background to meet the huge challenges and requirements of the scientific and academic reality within the country.

2. Program Mission

The Department of General Sciences seeks to graduate university teachers with a scientific background that includes acquiring various scientific concepts and employing them in daily life.

3. Program Objectives

The educational program aims to develop faculty members, improve their performance, and make graduates qualified and able to obtain a job opportunity, whether in the Ministries of Education or Higher Education, or in various sectors of society.

Therefore, the goals and objectives can be summarized as:

1. Developing knowledge and understanding: The program aims to develop knowledge and understanding in the fields of science, such as mathematics, physics, chemistry, and biology, by offering advanced curricula that reflect the latest developments in the scientific field.
2. Enhancing scientific skills: The program seeks to enhance students' scientific skills, such as analysis, experimentation, critical thinking, and problem solving, through work in laboratories, scientific experiments, and research projects.
3. Developing educational skills: The program aims to develop students' teaching and guidance skills, so that they can effectively apply scientific concepts in the educational process and guide students in effective ways.
4. Promoting scientific research: The program seeks to enhance the culture of scientific research and innovation, by encouraging students to participate in research

activities, publish results, and contribute to solving scientific and technological problems.

5. Stimulating innovation and development: The program aims to motivate students to innovate and develop in the fields of science, whether through developing new technologies or finding solutions to contemporary scientific and technological challenges.

Achieving these goals requires designing comprehensive educational programs that include appropriate curricula, effective teaching methods, and training students to use technology to enhance scientific learning.

4. Program Accreditation

nothing

5. Other external influences

Application in primary schools

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**11**	**22**		Basic course
College Requirements	**14**	**32**		Basic course
Department Requirements	**17**	**80**		Basic course
Summer Training		**12**		Basic course
Other	**Graduation Project**	**2**		Basic course

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

7. Program Description

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4100	Arabic	2	2			
Sci4101	general chemistry	4	3		2	
Sci4102	Logic (mathematics)	2	2			
Sci4103	the computer	2	1		2	
Sci4104	human rights	1	1			
Sci4105	Basics of psychology	3	3			
Sci4106	General biology	4	3		2	
	the total	18	15		6	

(Vocabulary table for the second semester/ The first stage)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4107	General physics	4	3		2	
Sci4108	Human biology	3	2		2	
Sci4109	Islamic education	2	2		2	
Sci4110	Laboratory security and safety	2	2			
Sci4111	Fundamentals and principles of basic education	3	3			
	English	2	2			
	the total	16	14		6	

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4200	cytology	3	2		2	
Sci4201	Microbiology	4	3		2	
Sci4202	Virology	2	2			
Sci4203	English	2	2			
Sci4204	Counseling and mental health	3	3			
Sci4205	Arabic	2	2			
Sci4206	the computer	2	1		2	
	the total	18	15		6	

Department of General Sciences / Second Stage / Biology Branch (Vocabulary Table for the Second Semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4207	Democracy	1	1		.....	
Sci4208	Educational statistics	3	3		.....	
Sci4209	Educational psychology	2	2		.....	
Sci4210	Invertebrate science	3	2		2	
Sci4211	Histology and embryology	3	2		.....	
Sci4212	Biochemistry	2	2		.....	
Sci4213	Phosphorus is a plant	3	2		.....	
	the total	17	14		2	

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4214	Arabic	2	2		.....	
Sci4215	English	2	2		.....	
Sci4216	the computer	2	1		2	
Sci4217	Counseling and mental health	3	3		.....	
Sci4218	Wave motion and sound	3	2		2	
Sci4219	Material properties	2	2		.....	
Sci4220	Classic mechanics	3	2		2	
	the total	17	14		6	

(Vocabulary table for the second semester/Physics branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4221	Democracy	1	1		.....	
Sci4222	Educational statistics	3	3		.....	
Sci4223	Educational psychology	2	2		.....	
Sci4224	Thermodynamics	3	3		2	
Sci4225	Electric and magnetic	4	3		2	
Sci4226	Calculus	2	2		.....	
Sci4227	Optical physics	3	2		2	
	the total	18	16		6	

College of Basic Education/Haditha
Department of General Sciences / Second Stage / Chemistry Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4228	Arabic	2	2		.....	
Sci4229	English	2	2		.....	
Sci4230	the computer	2	1		2	
Sci4231	Counseling and mental health	3	3		.....	
Sci4232	Inorganic chemistry	3	2		2	
Sci4233	Volumetric analytical chemistry	3	2		2	
Sci4234	Physical chemistry	3	2		2	
	the total	18	14		8	

(Vocabulary table for the second semester/Chemistry branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4235	Democracy	1	1		.....	
Sci4236	Educational statistics	3	3		.....	
Sci4237	Educational psychology	2	2		.....	
Sci4238	Gravimetric analytical chemistry	3	2		2	
Sci4239	organic chemistry	3	2		2	
Sci4240	Chemistry of represented elements	3	2		2	
Sci4241	Calculus	2	2		.....	
	the total	17	14		6	

Department of General Sciences / Third Stage / Biology Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4300	Arabic	2	2		.....	
Sci4301	General teaching methods	3	3		.....	
Sci4302	Educational research methodology	3	3		.....	
Sci4303	Faslaja is an animal	3	2		2	
Sci4304	Parasitology	3	2		2	
Sci4305	Plant and animal production	4	3		2	
	the total	18	15		6	

Department of General Sciences / Third Stage / Biology Branch

(Vocabulary table for the second semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4306	English	2	2		.....	
Sci4307	Measurement and evaluation	2	2		.....	
Sci4308	Curricula and textbooks	2	2		.....	
Sci4309	Immunology	3	2		2	
Sci4310	world of insects	3	2		2	
Sci4311	Methods of teaching science	2	2		.....	
Sci4312	Plant classification	2	2		.....	
	the total	16	14		4	

College of Basic Education / Haditha Department of General Sciences / Third Stage / Physics Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4313	Arabic	2	2		.....	
Sci4314	General teaching methods	3	3		.....	
Sci4315	Educational research methodology	3	3		.....	
Sci4316	Modern physics	4	3		2	
Sci4317	Quantum mechanics	2	2		.....	
Sci4318	Astronomy	2	2		.....	
	the total	16	15		2	

(Vocabulary table for the second semester/Third stage/ Physics branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4319	English	2	2		.....	
Sci4320	Measurement and evaluation	2	2		.....	
Sci4321	Curricula and textbooks	2	2		.....	
Sci4322	Electronics science	3	2		2	
Sci4323	Solid state physics	3	3		.....	
Sci4324	Methods of teaching science	2	2		.....	
Sci4325	Radioactivity	3	2		2	
	the total	17	15		4	

College of Basic Education / Haditha Department of General Sciences / Third Stage / Chemistry Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4326	Arabic	2	2		.....	
Sci4327	General teaching methods	3	3		.....	
Sci4328	Educational research methodology	3	3		.....	
Sci4329	Coordination Chemistry	3	2		2	
Sci4330	organic chemistry	3	2		2	
Sci4331	Industrial chemistry	3	2		2	
	the total	17	14		6	

(Vocabulary table for the second semester/Third stage/ Chemistry branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4332	English	2	2		.....	
Sci4333	Measurement and evaluation	2	2		.....	
Sci4334	Curricula and textbooks	2	2		.....	
Sci4335	Oil and petrochemicals	3	2		2	
Sci4336	Biochemistry	3	2		2	
Sci4337	Methods of teaching science	2	2		.....	
Sci4338	Soil chemistry	3	2		2	
	the total	17	14		6	

College of Basic Education/Haditha

Department of General Sciences / Fourth Stage / Biology Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4400	Arabic	2	2		.....	
Sci4401	English	2	2		.....	
Sci4402	Professional ethics	2	2		.....	
Sci4403	Educational administration and supervision	2	2		.....	
Sci4404	Practical education (watching)	2		4	.....	
Sci4405	Algae and fungi	3	2		2	
Sci4406	Genetics	3	2		2	
Sci4407	Serums and vaccines	2	2		.....	
Sci4408	Endocrine physiology	2	2		.....	
	the total	16	12	4	4	

(Vocabulary table for the second semester/fourth stage/biology branch)

Course Code	Subject	number of units	The number of hours			Grader
			theory	Applied	Laboratory	
Sci4409	Graduation research project	2	2		.....	
Sci4410	(application)	12	12		.....	
	the total	14	14			

College of Basic Education/Haditha
Department of General Sciences / Fourth Stage / Physics Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4411	Arabic	2	2		.....	
Sci4412	English	2	2		.....	
Sci4413	Professional ethics	2	2		.....	
Sci4414	Educational administration and supervision	2	2		.....	
Sci4415	Practical education (watching)	2		4	.....	
Sci4416	Laser	3	2		2	
Sci4417	Electromagnetism	3	3		.....	
Sci4418	Nuclear Physics	2	1		.....	
Sci4419	Plasma physics	2	2		.....	
	the total	16	12	4	2	

(Vocabulary table for the second semester/fourth stage/physics branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4420	Graduation research project	2	2		.....	
Sci4421	(application)	12	12		.....	
	the total	14	14			

College of Basic Education/Haditha
Department of General Sciences / Fourth Stage / Chemistry Branch

(Vocabulary table for the first semester)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4422	Arabic	2	2		.....	
Sci4423	English	2	2		.....	
Sci4424	Professional ethics	2	2		.....	
Sci4425	Educational administration and supervision	2	2		.....	
Sci4426	Practical education (watching)	2		4	.....	
Sci4427	Organic diagnosis	3	2		2	
Sci4428	Automated analysis	3	2		2	
Sci4429	clinical Chemistry	2	2		.....	
Sci4430	Chemistry of natural products	2	2		.....	
	the total	20	16	4	4	

(Vocabulary table for the second semester/fourth stage/Chemistry Branch)

Course Code	Course title	Accredited units	Weekly hours			Grader
			theory	Applied	Laboratory	
Sci4431	Graduation research project	2	2		.....	
Sci4432	(application)	12	12		.....	
	the total	14	14			

8. Expected learning outcomes of the program

Knowledge
The student will have the ability to know and understand the principles, theories and basics in general sciences. The student will have the ability to understand modern and advanced scientific topics in the field of general science
Skills
The necessity of creating a kind of motivation for the student and discovering his skills through questions and the professor's ability to deliver information Develop intellectual questions. Using the Internet to build and discuss an educational idea
Ethics
Developing students' abilities to share ideas

9. Teaching and Learning Strategies

Daily theoretical lectures.

- Data show
- Daily exams
- Monthly exams
- Graduation projects for final year students and discussing them

10. Evaluation methods

- Monthly and quarterly written exams.
- Rapid exams (Quizzes).
- Homework..

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	agriculture	Animal physiology			1	
Assistant Professor	agriculture	Seed technology			1	
	chemistry				1	
Lecturer	agriculture	plant physiology			1	
	Teaching methods				1	
	mathematics				1	
	Physics	Nuclear physics			1	
	Physics				1	
	psychology				1	
Assistant lecturer	chemistry				6	
	Physics				3	
	Biology				2	
	agriculture				2	
	Teaching methods				1	
	computer				١	
	engineering				١	

Professional Development

Mentoring new faculty members

1. Learn about the policies and procedures of the university or educational institution: Understand the laws and regulations that govern academic and educational work.
2. Building positive relationships with colleagues and students: communicate effectively with faculty colleagues and deal positively with students.
3. Good preparation for lessons and lectures: pre-planning curricula and educational materials and presenting them in an innovative and interesting way.
4. Listening to feedback: Receiving comments and observations from students and colleagues and working to develop performance based on them.
5. Communicate with the administration and contribute to academic and administrative activities: Participate in academic and administrative meetings and committees to contribute to the development of educational programs and plans.
6. Continuing learning and professional development: Participate in training courses, workshops, and academic conferences to develop academic skills and knowledge.
7. Maintaining a balance between work and personal life: Paying attention to psychological and social health and maintaining a balance between personal and professional life.

Professional development of faculty members

1. Training and workshops: Organizing training courses and workshops in specialized fields to update their knowledge and develop their skills.
2. Academic update: Encouraging them to attend academic conferences and publish their research in peer-reviewed journals to develop their academic path.
3. Guidance and accompaniment: Providing the necessary support to them in setting professional goals and developing plans to achieve them, in addition to providing feedback and accompaniment in their development journey.
4. Periodic evaluation: Conduct periodic evaluations of their performance and help them identify strengths and weaknesses to work on improving them.
5. Exchange of experiences: Encouraging them to exchange expertise and experiences with their colleagues and cooperate in research and teaching projects.

Providing a supportive and stimulating environment for continuous learning contributes to the professional development of faculty members and raises their level of influence in the academic and professional community

12. **Acceptance Criterion**
((Establishing regulations related to admission to the college or institute) **• Approving admission conditions for students in accordance with the regulations of the Ministry of Higher Education and Scientific Research (central admission)** **• He needs a personal interview for the department.** **• Must be fit for medical examination.** **• High school average.** **• The college's absorptive capacity**

13. **The most important sources of information about the program**
● Market needs. ● Local trends of the governorate. ● Studies and questionnaires.

14. Program Development Plan

Curriculum skills chart																				
Please tick the boxes corresponding to the individual learning outcomes from the program being assessed																				
				Learning outcomes required from the programme																
Year and level	Course Code	Course Name	Basic / sisterairrigation	Knowledge and understanding				Subject-specific skills				thinking skills				General and transferable skills				
				a 1	a 2	a 3	a 4	B 1	B 2	B 3	B 4	C 1	C 2	C 3	C 4	Dr 1	Dr 2	Dr 3	Dr 4	
Semester/first	Sci4100	Arabic	Basic																	
Semester/first	Sci4101	the computer	Basic	*					*			*					*			
Semester/first	Sci4102	human rights	Basic	*					*			*					*			
Semester/first	Sci4103	Basics of psychology	Basic	*					*			*					*			
Semester/first	Sci4104	General biology	Basic	*					*			*					*			
Semester/first	Sci4105	General chemistry	Basic	*					*			*					*			
Semester/first	Sci4106	Logic (mathematics)	Basic	*					*			*					*			
Semester/first	Sci4107	the languageEnglish	Basic	*					*			*					*			
Semester/first	Sci4108	Fundamentals and principles of basic education	Basic	*					*			*					*			
Semester/first	Sci4109	Islamic education	Basic	*					*			*					*			
Semester/first	Sci4110	General physics	Basic	*					*			*					*			
Semester/first	Sci4111	Human biology	Basic	*					*			*					*			
Semester/first	Sci4112	Laboratory security and	Basic	*					*			*					*			

		safety																	
Quarterly/second	Sci4200	cytology	Basic	*					*			*					*		
Quarterly/second	Sci4201	Microbiology	Basic	*					*			*					*		
Quarterly/second	Sci4202	Virology	Basic	*					*			*					*		
Quarterly/second	Sci4203	English	Basic	*					*			*					*		
Quarterly/second	Sci4204	Counseling and mental health	Basic	*					*			*					*		
Quarterly/second	Sci4205	Arabic	Basic	*					*			*					*		
Quarterly/second	Sci4206	the computer	Basic	*					*			*					*		
Quarterly/second	Sci4207	Democracy	Basic	*					*			*					*		
Quarterly/second	Sci4208	Educational statistics	Basic	*					*			*					*		
Quarterly/second	Sci4209	Educational psychology	Basic	*					*			*					*		
Quarterly/second	Sci4210	Invertebrate science	Basic	*					*			*					*		
Quarterly/second	Sci4211	Histology and embryology	Basic	*					*			*					*		
Quarterly/second	Sci4212	Biochemistry	Basic	*					*			*					*		
Quarterly/second	Sci4213	Phosphorus is a plant	Basic	*					*			*					*		
Quarterly/second	Sci4214	Arabic	Basic	*					*			*					*		
Quarterly/second	Sci4215	English	Basic	*					*			*					*		
Quarterly/second	Sci4216	the computer	Basic	*					*			*					*		

Quarterly/second	**Sci4217**	**Counseling and mental health**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4218**	**Wave motion and sound**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4219**	**Material properties**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4220**	**Classic mechanics**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4221**	**Democracy**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4222**	**Educational statistics**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4223**	**Educational psychology**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4224**	**Thermodynamics**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4225**	**Electric and magnetic**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4226**	**Calculus**	**Basic**	*					*			*					*		
Quarterly/second	**Sci4227**	**Optical physics**	**Basic**	*					*			*					*		

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

Course Description Form

1. Course Name: Human biology

2. Course Code:

3. Semester / Year: Second Semester 2023-2024

4. Description Preparation Date: 2024/4/17

5. Available Attendance Forms: Laboratories (weekly)

6. Number of Credit Hours (Total) / Number of Units (Total) 48 hours / 12 units

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

Name: AFRAH ISMAEL WAHEEB

Email: afrah.ismail@uoanbar.edu.iq

8. Course Objectives

Course Objectives

Provide the student with the types of biological knowledge and knowledge of the characteristics of the w of the body of the living organism

9. Teaching and Learning Strategies

Strategy	1- Explain the scientific subject in detail. 2- Discussion and dialogue about vocabulary related to the topic 3- Using figures and illustrative means to explain the lecture 4- Providing the student with knowledge and understanding of the basic principles of human biology 5- Providing the student with the skill of linking the practical and theoretical parts 6- Asking questions during the lecture

10. Course Structure

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

1	**4**		introduction to human biology and a historical overview of the scientists who worked in this field	Using figures, blackboard, drawings, and PowerPoint	1-Weekly, monthly, and daily exams and the end of the course exam. 2- Giving the students some group activities and tasks 3- Paying attention to daily duties and allocating a percentage of the grade to them
2	**4**		Learn about the cells that make up the human body	Using figures, blackboard, drawings, and PowerPoint	
3	**4**		Identify the cells that make up the human body in terms of form and function	Using figures, blackboard, drawings, and PowerPoint	
4	**4**		Identify the circulatory system and blood distribution within the body	Using figures, blackboard, drawings, and PowerPoint	

5	**4**		Identify the human respiratory system in detail	Using figures, blackboard, drawings, and PowerPoint	
6	**4**		Study of the skeletal system	Using figures, blackboard, drawings, and PowerPoint	
7	**4**		Identify the nervous system	Using figures, blackboard, drawings, and PowerPoint	
8	**4**		Identify the digestive system	Using figures, blackboard, drawings, and PowerPoint	
9	**4**		Identify the human muscular system	Using figures, blackboard, drawings, and PowerPoint	
10	**4**		Urinary system	Using figures, blackboard, drawings,	

				and PowerPoint	
11	**4**		Installation of the kidney	Using figures, blackboard, drawings, and PowerPoint	
12	**4**		Some organic diseases that affect various systems	Using figures, blackboard, drawings, and PowerPoint	

11. Course Evaluation

Evaluation of the course through student evaluation by:
1- quiz
2- Short questions during the lecture
3- Reports
4- Monthly exams: two or more exams
5- Final exam
Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, oral or monthly exams, reports, etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Hamid Ahmed Al-Hajj. 2017, Human Biology, Dar Al-Maysara for Publishing, Distribution and Printing.
Main references (sources)	2- Ayesh Mahmoud Zaitoun. 1987, Introduction to Human Biology, 2nd editi - Amman: University of Jordan, Cooperati Printing Workers Association.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
English
2. Course Code:

3. Semester / Year:
Second semester / First year
4. Description Preparation Date:
7 / 3 / 2024
5. Available Attendance Forms:
Attendance + Electronic class
6. Number of Credit Hours (Total) / Number of Units (Total)
30 / 30
7. Course administrator's name (mention all, if more than one name)
Name: Zayd Abdul-Jabbar Abdullah Email: eng.zayd132@uoanbar.edu.iq

8. Course Objectives	
Course Objectives	• Understand and use the English language as a means of communication and learning in their specializations. • Understanding the reading material and creating a link between its various components. • Using colloquial English in their daily lives • Write a sentence that is sound and correct in structure and meaning. • Graduating cadres with a high degree of education, qualification and excellence.

9. Teaching and Learning Strategies	
Strategy	• Understanding the target language's meaning and structure, in addition to being proficient in its pronunciation. • Developing basic linguistic competencies that enable dealing with vocabulary at the introductory level • Developing understanding and the ability to use conversational language in daily life • Writing a simple, grammatically sound sentence that the student will use to describe people or express a desire or point of view...etc... • Using sentences with simple grammatical structures in certain contexts • Understanding simple read texts and comparing them live.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	An introduction to English	Unit One – Introduction	Lectures inside the classroom	Discussions and oral exams
2	2	Learning the names of contraries	Unit Two – Contraries	Lectures inside the classroom	Discussions and oral exams
3	2	Learning the names of jobs	Unit Three – Jobs	Lectures inside the classroom	Discussions and oral exams

4	2	Learning the ways of Possessive	Unit Four – Possessive	Lectures inside the classroom	Discussions and oral exams
5	2	Learning the names of	Unit Five – Sports	Lectures inside the classroom	Discussions and oral exams
6	2	Learning the names of sports	Unit Six – The Time	Lectures inside the classroom	Discussions and oral exams
7	2	Exercises on previous topics	First month exam	Preparing written exam questions	Monthly exam
8	2	Learning the ways of questions	Unit Seven – Questions	Lectures inside the classroom	Discussions and oral exams
9	2	Learning the names of Rooms and Furniture	Unit Eight – Rooms and Furniture	Theoretical	Monthly exam
10	2	Learning the ways of Saying Years	Unit Nine – Saying Years	Lectures inside the classroom	Discussions and oral exams
11	2	Learning roles of Past Simple	Unit Ten – Past Simple	Lectures inside the classroom	Discussions and oral exams
12	2	Learning deference between can / can't	Unit eleven – can / can't	Lectures inside the classroom	Discussions and oral exams
13	2	Learning deference between some / any	Unit Twelve – some / any	Lectures inside the classroom	Discussions and oral exams
14th	2	Learning the names of Colors and Clothes	Unit Thirteen – Colors and Clothes	Classroom lectures	discussions and oral exams
15th	2	Preparing written exam questions	Second month exam	theoretical	monthly exam

11. Course Evaluation

Daily preparation	Reports	Monthly Exams	Final Exam	Total
5	5	40	50	100

12. Learning and Teaching Resources

Required textbooks (curricular books, any)	***Beginners - New Headway Plus- student's book + workbook by John and Liz Soar***
Main references (sources)	***Learn the English language in a simple way*** By Taher Al-Bayati

Recommended books and references (scientific journals, reports…)	• ***https://learnenglish.britishcouncil.org/english-grammar-reference/present-simple*** • ***https://www.englishpage.com/verbpage/presentcontinuous.html*** • ***https://www.ef.com/wwen/english-resources/english-grammar/present-perfect/***
Electronic References, Websites	Iraqi, Arab and international websites related to English.

Course Description Form

1. Course Name:
General physics
2. Course Code:
3. Semester / Year:
Second/2024
4. Description Preparation Date:
23/1/2024
5. Available Attendance Forms:
Classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
٣٦/3
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Najeeb jasim Email: mhamad87@uoanbar.edu.iq
8. Course Objectives

Course Objectives	• Teaching students the basics of the physics of motion of all kinds and the basic laws for interpreting natural phenomena and preparing students on how to explain or interpret these phenomena and their laws.....

٩. Teaching and Learning Strategies

Strategy	Lecture, discussion, and preparing weekly reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٣	Acquire knowledge in the field of understanding Laws of motion in One dimension with Units used. Measurement and movement at a distance One	Measurement and movement at a distance One	Presentation and discussion	Daily and monthly exam
٢	٣	Acquire knowledge in the field of understanding Laws of motion in One dimension with Units used. Measurement and movement at a distance One	Movement in one dimension	Presentation and discussion	Daily and monthly exam
٣	٣	Explain the meaning Physics of quantities Vector and quantities Numerical	For vectors and quantities Numerical	Presentation and discussion	Daily and monthly exam

٤	٣	In expansion Previous topic And gain knowledge In its fields	Vectors and quantities Numerical	Presentation and discussion	Daily and monthly exam
٥	٣	Laws of motion in Two dimensions with units used.	Laws of motion in Two dimensions with units used.	Presentation and discussion	Daily and monthly exam
٦	٣	Derivation of Newton's laws The third is w its applicatio	Newton's la	Presentation and discussion	Daily and monthly exam
٧	٣	Connect Newton's laws By the forces of friction with Solve examples	Friction forc	Presentation and discussion	Daily and monthly exam
٨	٣	Connect Newt laws	Friction forces	Presentation and discussion	Daily and monthly exam
٩	٣	Know the con of work	Work and ener	Presentation and discussion	Daily and monthly exam
١٠	٣	Know the con of work	Work and ener	Presentation and discussion	Daily and monthly exam

11. Course Evaluation

Grade: 35. Monthly exam: 25. Assignments: 5. Daily exams: 5

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-Principles of university physics
Main references (sources)	Fundamentals of Physics by Friedrich Bosch
Recommended books and references (scientific journals, reports…)	Classical Mechanics – A Basic Introducti Michael Cohen
Electronic References, Websites	Mechanics principles and applications, Hazem Skaik

Course Description Form

Course Name:
Plant taxonomy
2. Course Code:
SciB312
3. Semester / Year:
2st Semester 2023-2024
4. Description Preparation Date:
5 / 2 / 2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
30 Hours / 2 Units
7. Course administrator's name (mention all, if more than one name)
Name: malath A. Hamed Email: ag.malath.hamid@uoanbar.edu.iq
8. Course Objectives

Course Objectives	• Introducing students to plant taxonomy • Learn the basics of plant classification • Identify the plant parts used in classification
9. Teaching and Learning Strategies	
Strategy	A- A- Knowledge and understanding: B- Studying plant taxonomy helps to gain deep knowledge and understanding about: C- 1. Plant Diversity: Understanding different types of plants and classifying them according to their common and unique characteristics. D- 2. Plant evolution: Understanding the evolutionary history of plants and their genetic and evolutionary relationships. E- 3. Environment and adaptation: The influence of environmental factors on the distribution and adaptation of plants. F- 4. Human uses: Uses of plants in medicine, nutrition, agriculture, and other fields. G- 5. Preserving biodiversity: The importance of preserving plant diversity and contributing to protecting endangered plants. H- 6. Scientific research: Directing scientific research in various fields such as plant genetics and plant biology I- C- Teaching and learning methods J- Providing students with the basics and lectures related to the

	subject. K- Using Power Point presentation methods to convey information well and clearly to the student. L- Urging students to take advantage of Google search engines wh asking them to submit scientific reports on the topics given to th in the academic subject.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	**Plant taxonomy**	**Plant taxonomy**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
2	2		Root	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
3	2		**Stems**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
4	2		**Leaves**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
5	2		**Leaf Blade**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
6	2		**Leaf Venation**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
7	2		**The Flower**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
8	2		**Perianth**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
9	2		**Androecium**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
10	2		**Gynoecium**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments

11. Course Evaluation

Achievement tests are as follows: - A. Monthly tests 50%
B. End of semester exams 50%

12. Learning and Teaching Resources

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

Electronic References, Websites	

Course Description Form

1. Course Name:
Entomology
2. Course Code:
Entomology/Sci4310
3. Semester / Year:
2st Semester 2022−2023
4. Description Preparation Date:
23/4/2024
5. Available Attendance Forms:
Lectures inside the classroom and laboratory, using data show devices and t required materials
6. Number of Credit Hours (Total) / Number of Units (Total)
48
7. Course administrator's name (mention all, if more than one name)
Name: osama taha hamadi Abdullah alhadithy Email: osama.taha@uoanbar.edu.iq
8. Course Objectives

Course Objectives	This course aims to introdu the student to general entomology and various branches, distinguish insects animals that have special characteristics th only exist in them, the importance of inse to human life, and highlight the applied r of this science and its impact on t agricultural environment, animal productio and public health
	• **1− Identify some basic concepts insects** • **2− Identifying the types of harmful beneficial insects.** • **3− Study of the insect's external part** • **4− The possibility of dealing with inse in a scientific manner** • **5− Discussing the most important ty of wings in insects**..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	D1. 1- Teaching the student oral and written communication skills D2. 2- Using modern technological tools such as computers, the Intern and programs The scientific method for preparing reports, tabl figures, and presentations. D3. 3- Encouraging the student to work collectively in the laborato within teams or groups.

	D4. 4- Developing the student's abilities to make optimal use of ti (time management).

10. Course Structure

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

Week	Hours	ILOs	Unit/Module orTopic Title	TeachingMethod	Assessment Method
1	4	Knowledge of insects	Introduction to insects, definition of insects, general characteristics of insects, and theories of insect emergence	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
2	٤	Knowledge of insects	The location of insects in the animal kingdom and the importance of insects and their harm	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
3	٤	Knowledge of insects	The apparent appearance of insects, moulting, and metamorphosis. Types of tentacles	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
4	٤	Knowledge of insects	The thorax, chest appendages, and wings	Lectures inside the classroom and laboratory, using data show devices5and the required materials	Discussions and oral exams
5	٤	Knowledge of insects	The abdomen and its appendages	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
6	٤	Knowledge of insects	Respiratory system in heat	Lectures inside the classroom and laboratory, using data	Discussions and oral exams

				show devices and the required materials	
7	٤	Knowledge of insects	Directing members	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
8	٤	Knowledge of insects	The reproductive system in insects	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
8	٤	Knowledge of insects	Digestive system in insects	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
9	٤	Knowledge of insects	Digestive system in insects	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
10	٤	Knowledge of insects	Nervous system	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
11	٤	Knowledge of insects	Sense organs in insects	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
12	٤	Knowledge of insects	Growth and transformation	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
13	٤	Knowledge of insects		Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbo (curricular books, if any)	
Main references (source	احمد علي على رميح، ٢٠١٥، اساسيات علم الحشرات،.دار الكتب العلمية 2- محمد فؤاد توفيق ، ١٩٧٦ ، علم الحشرات العام ،الطبعة الرابعة ، دار المعارف. 3- ابراهيم قدوري ، حسين عباس ومصطفى كمال . (١٩٨٠) علم الحشرات العام . وزارة الحشرات R.F. Chapman (1987) -٤ التعليم العالي بالعراق . التركيب والوظيفة (مترجم) الدار العربية للنشر ابراهيم رواش ، مراد الهلالي ، -٥ الجزء الأول والثاني) .) ممدوح إدريس ، مصطفى سليمان وأحلام العذايــدي (١٩٨٧) أساسيات علم الحشرات (الجزء الأول) جامعة الاسكندرية .
Recommended books and references (scientific journals, reports…)	
Electronic Referenc Websites	

Course Description Form

1. Course Name:
Invertebrate science
2. Course Code:
Sci4210
3. Semester / Year:
the second 2022-2023
4. Description Preparation Date:
23/4/2024
5. Available Attendance Forms:
Lectures inside the classroom and laboratory, using data show devices and t required materials
6. Number of Credit Hours (Total) / Number of Units (Total)
48
7. Course administrator's name (mention all, if more than one name)
Name: osama taha hamadi Abdullah alhadithy Email: osama.taha@uoanbar.edu.iq
8. Course Objectives

Course Objectives	• ..... • ..... • .....
9. Teaching and Learning Strategies	
Strategy	1- Identify some basic concepts of invertebrate animals 2- For the student to understand the classification of these anim within the animal kingdom 3- That the student understands the importance of these animals 4- That the student understands the harmful effects of some these animals 5- Practical performance: The student gains skill in diagnosi invertebrate organisms
10. Course Structure	
11. Course Structure	

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	Knowledge of invertebrates	Introduction to invertebrate science, including the definition of taxonomy, the definition of invertebrates and their general characteristics, the bi- and tripartite invertebrates, coelom and non-columella.	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
2	4	Knowledge of invertebrates	Phylum: Coelenterates: general characteristics, classification, hydra (structure, movement, nutrition, breathing, excretion, reproduction).	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
3	4	Knowledge of invertebrates	Phylum Flatworms: general characteristics, classification Hepatic worm (general appearance - life cycle - how the disease is contracted - the relationship between the parasite and the host).	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
4	4	Knowledge of invertebrates	Schistosomiasis worm (general appearance - life cycle - how the disease is contracted - the relationship	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams

				between the parasite and the host).		
	5	4	Knowledge of invertebrates	Tapeworm (general appearance - life cycle - how to contract the disease - the relationship between the parasite and the host).	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
	6	4	Knowledge of invertebrates	Phylum of roundworms: general characteristics, Ascaris worm, hookworm, with an explanation of the method of infection as well as the relationship of the parasite to the host.	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams
	7	4	Knowledge of invertebrates	Phylum Annelids: general characteristics, classification, earthworms (in detail).	Lectures inside the classroom and laboratory, using data show devices and the required materials	Discussions and oral exams

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	للافقاريات: د. عبد العزيز محمود وآخرون، مكتبة الأنجلو المصرية، ١٩٩٧م. أساسيات علم الحشرات: د. حلمي مليكة حنا. جامعة أسيوط، ١٩٨٨م. بيولوجية الحيوان العملية(الجزء الثاني والثالث): د. أحمد حماد الحسيني ود. أميل دميان،١٩٦٩م،

	دار المعارف- مصر. ـ الدراسة العملية في علم الحيوان: تأليف أعضاء ة تدريس علم الحيوان في الجامعات المصرية، دار **حلمي ماعيل محمد، بش- محمد اس** **، علي ي يحيى الس ميخائيل، العاص** **ن تغريد رقاوي، حس منى ش** **الرحمن (٢٠٠٢): اساسيات علم الحيوان. دار** **الفكر العربي. جمهورية مصر العربية.** **ة ، البنهاوي محمود احمد ، دميان اميل ش** **، لبي عبدالعظيم عبدالله ش ش** **عود دي محمد امين، س رش** **ي عبدالفتاح. (١٩٩٣): علم الحيوان. دار** **المعارف. جمهورية مصر العربية** Invertebrates: D. Abdel Aziz Mahmo and others, Anglo-Egyptian Libra 1997 AD. 2-)- Basics of Entomology: Dr. I dream is Malika Hanna. Ass University, 1988 AD. 3-)- Practical Animal Biology (Pa Two and Three): Dr. Ahmed Hamm Al-Husseini and Dr. Emile Demi 1969 AD, Dar Al Maaref - Egypt. 4- Practical study in zoology: writt by zoology faculty members Egyptian universities, Dar
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Calculus

2. Course Code:

Sci4241

3. Semester / Year:

Second Semester 2023-2024

4. Description Preparation Date:

8 / 4 / 2024

5. Available Attendance Forms:

Daily attendance in the classroom and laboratory

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

Number of Credit Hours (60) / Number of Units (2)

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

Name: Saleh Mohammed Hussein

Email: Saleh.mohammed@uoanbar.edu.iq

8. Course Objectives

Course Objectives	1- Give information about Calculus .
	2-Make the student able to know the methods of calculus .
	3-Knowledge of calculus applications
	4-Students learn Mathematical methods and their applications
	5- students with the knowledge steps to solve calculus problems

9. Teaching and Learning Strategies

Strategy	١- Providing students with the basics and lectures related to calculus
	2-Use the lecturing method and Discussing it with students and assigning them to solve assignments
	3-Urging students to search in libraries and websites to help understand the material and solve the exercises

10. Course Structure

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

1	4(For each branch 2)	Learn terms/Real number Intervals	terms/Real number / Interv	Lecture and Discussion	Oral questio
2	4	Study Honesty Inequality	Inequality	Lecture	questions
3	4	Study Honesty Absolut Val	Absolut Valu	Lecture and	Daily testing
4	4	Introduction to the types of functions	functions types functions	Lecture	Questioning
5	4	Solution exercise	Exercise	Discussion	Oral questio
6	4	First month exam	First month exam	First month exam	
7	4	Study of Dom and Range	Domain Range	Discussion and Diction	Questioning
8	4	Learn about the structure of functions	structure functions	Lecture	Oral questio
9	4	Study of Limits application	Sets	Lecture and Discussion	oral test
10	4	Solution exercise	Exercise	Discussion and Diction	Questioning
11	4		Second mo exam	Second mo exam	
12	4	Learn about the concept of continuity And application	Continuous	Lecture	Oral questio
13	4	Study of The derivative of the function and method derivative	The derivative of the function and method derivative	Discussion and Diction	Questioning
14	4	Study of Ro theorem Lopital base	Rolle's theo and Lopital bas	Lecture and Discussion	Questioning
15	4	Study of T Integration Method	Integration Method	Lecture	Questioning

		solution problem			

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

1- Monthly written tests and assignment grades and And class participations : 50 marks.
2- Final exam: 50 marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nothing
Main references (sources)	Calculus
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	1-https://www.noor-book.com 2-https://www.edraak.org

Course Description Form

1. Course Name: Curricula and textbooks

2. Course Code:

3. Semester / Year: Year :the first / 2024

4. Description Preparation Date: 5/12/2024

5. Available Attendance Forms: theoretical

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

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

Name: **ali rabeeaa husein**
Email: **ali.rabeeaa@uoanbar.edu.iq**

8. Course Objectives

1-Defines the basic concepts of teaching terminology 2-Knowing the importance of teaching methods. 3-Identify the types of teaching methods and methods. 4-Knowledge of using the steps of teaching methods. 5.Explaining the advantages and disadvantages of teaching methods and methods	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	This course includes many basic topics related to the basic concepts of teaching terms, their methods, importance, types, advantages and disadvantages

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
10 /9 / 2023	3	Specialized in teaching stalff	Knowing the importance Specialized in teaching stalff	theoreti cal	Tests and discussi on

17 /9 / 2023	3	Models of teaching theories	Knowing the importance Models of teaching theories	theoretic	Tests and discussion
24 / 9 / 2023	3	Teaching terminology	Knowing the importance Teaching terminology	theoretic	Tests and discussion
1 /10 / 2023	3	Criteria for choosing teaching methods	Knowing the importance Criteria for choosing teaching methods	theoretic	Tests and discussion
8 / 10 / 2023	3	teaching methods	Knowing the importance teaching methods	theoretic	Tests and discussion
15 / 10 / 2023	3	Teaching skills	Knowing the importance Teaching skills	theoretic	Tests and discussion
22 /10 / 2023	3	Effective teaching	Knowing the importance Effective teaching	theoretic	Tests and discussion
29 / 10 / 2023	3	Quarterly test –sh1	Knowing the importance Quarterly test –sh1	theoretic	Tests and discussion
5/ 11 / 2023	3	Classifications of teaching methods	Knowing the importance Classifications of teaching methods	theoretic	Tests and discussion
12 / 11 /2023	3	Brainstorming method	Knowing the importance Brainstorming method	theoretic	Tests and discussion
19 / 11 / 2023	3	Discussion method	Knowing the importance Discussion method	theoretic	Tests and discussion
26 / 11 / 2023	3	Extrapolation method for production	Knowing the importance Extrapolation method for production	theoretic	Tests and discussion
3 /12 / 2023	3	Teaching planning	Knowing the importance Teaching planning	theoretic	Tests and discussion
10 / 12 / 2023	3	Educational goals	Knowing the importance Educational goals	theoretic	Tests and discussion
17 / 12 / 2023	3	Quarterly test –sh2	Knowing the importance Quarterly test –sh2	theoretic	Tests and discussion

Required textbooks (curricular books, if any)	Basics in general teaching methods. Dawoud Maher Muhammad and Majeed Mahdi Muhammad, Mosul,. 1991 AD
Main references (sources)	- -Al-Alusi, AkramYassin Muhammad, Teaching (concepts - foundations - theories - models - methods - planning), Iraq, 1st edition, Al-Yusr Press, 2021. -Al-Hila, Muhammad Mahmoud: Teaching methods and strategies, 2003. -Walid Ahmed Jaber, general teaching methods, their planning and educational applications, 1st edition 2005. -Mandour Abdel Salam Fathallah: The Simple Introduction to Curricula and Teaching Methods, Riyadh, International Publishing House, first edition, 2007. -Al-Tamimi, AwadJassim (2011) General Teaching Methods, Baghdad
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: Practical histology
2. Course Code:
3. Semester / Year: Season
4. Description Preparation Date:١٧/٤/٢٠٢٤
5. Available Attendance Forms: weekly
6. Number of Credit Hours (Total) / Number of Units (Total) 26 hours / 13 units
7. Course administrator's name (mention all, if more than one name)
Name: Lama Dali Ibrahim Ali Email: lama.dali@uoanbar.edu.iq
8. Course Objectives

Course Objectives The study of this course aims to identify the types of tissues in the human body, their locations in the body, and the most important functions they perform.	
9. Teaching and Learning Strategies	
Strategy	1- Cognitive objectives *The student's ability to excel and understand modern practical research methods *Providing the student with knowledge and understanding of the basic principles of histology *Enabling the student to know the most important tissues found in the body and distinguish between their types 2-- The skill objectives of the course *The student should be able to distinguish between the types tissues present in the body * Giving the student the skill of linking the practical and theoretical parts 3- Teaching and learning methods * Lecture and use a presentation in its presentation

	*Using educational slides to learn about the types of tissues present in the body * Asking questions during the lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2		Simple epithelial tissue	Power point	Written exam
2	2		Stratified epithelial tissue	Power point Interactive	Written exam
3	2		Connective tissue	Power point	Written exam
4	2		Muscle tissue	Power point Interactive	Written exam
5	2		Simple epithelial tissue	Power point Interactive	Written exam
6	2		Stratified epithelial tissue	Power point Interactive	Written exam
7	2		Nervous tissue	Power point Interactive	Written exam
8	2		Nervous system	Power point Interactive	Written exam
9	2		Circulatory system	Power point Interactive	Written exam
10	2		Lymphatic system	Power point Interactive	Written exam
11	2		Bone	Power point Interactive	Written exam
12	2		Cartilage	Power point Interactive	Written exam
13	2		Liver	Power point Interactive	Written exam

11. Course Evaluation
Course evaluation: Course evaluation through student evaluation 1- quiz 2- Short questions during the lecture 3- Monthly exams: two or more exams if possible 4-Final exam
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)	General histology Dr. Muhammad Ali Al-Satli. Ali Hussein, Damascus University, 2010
Main references (sources)	Histology practical part. Prof. Dr. Baidaa Hussein Mutlak, College of Education for Pure Sciences / Ibn Al-Haitham, Biological Sciences Laboratory 2019
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Plant Physiology
2. Course Code:
SciB213
3. Semester / Year:
2st Semester 2023-2024
4. Description Preparation Date:
5 / 2 / 2024
5. Available Attendance Forms:
6. Number of Credit Hours (Total) / Number of Units (Total)
30 Hours / 3 Units
7. Course administrator's name (mention all, if more than one name)
Name: malath A. Hamed Email: ag.malath.hamid@uoanbar.edu.iq
8. Course Objectives

Course Objectives	Introducing students to the cell and its parts Identify the device for transporting water and nutrients within t structures and theories that explain this process Identify the processes of (transpiration, cellular respirati photosynthesis). Know the importance of nutrients and plant hormones Knowing the importance of the work of enzymes and amino acids

9. Teaching and Learning Strategies

Strategy	M-Knowledge and Understanding • After completing the course, the student will be able to: - Describe the physiological processes of metabolism, photosynthesis, respiration, and water relations in plants in an appropriate scientific description. • Explains basic biological processes, explaining the role of enzymes on plant growth • It explains some important phenomena related to the physiologi processes of plants affected by some surrounding environmental factors the context of understanding physiological processes such as transpirati and transpiration.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	**Plant Physiology**	Introduction to plant physiology Types of living organisms Prokaryotic organisms Eukaryotic organisms Plant cell Animal cell	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
2	2		Plant cell, its parts and components Stages of plant cell growth Plant cell structure	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
3	2		Protoplast Cytoplasm Vacuoles	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
4	2		Water relations of plants Imbibition osmosis The plasma	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
5	2		**Plant absorption of water** **Water transport in plants** **Plant loss of water**	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
6	2		Blooding Transpiration	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
7	2		Photosynthesis	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
8	2		respiration	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
9	2		Enzymes	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
10	2		Plant nutrition	Lectures, presentations, group discussions	Written exams, oral exams, short exams, and home assignments
11. Course Evaluation					
Achievement tests are as follows: - A. Monthly tests 50%					

B. End of semester exams 50%	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	▪اساسيات فسيولوجيا النبات ، ٢٠٠٨ ، حشمت سليمان الدسوقي ▪فسيولوجيا النبات ، ١٩٩٨ ، عمادالدين وصفي س العلمية لادارة وإنتاج وتحسين المحاصيل الحقلية ، ٢٠١٨ ، اياد حسن علي و محمد عويد غدير
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: Plant physiology

2. Course Code:

3. Semester / Year: Second - ٢٠٢٣ / ٢٠٢٤

4. Description Preparation Date:٢٠٢٤-٤-١٧

5. Available Attendance Forms: Laboratories (weekly)

6. Number of Credit Hours (Total) / Number of Units (Total) 28/14

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

Name: AFRAH ISMAEL WAHEEB
Email: afrah.ismail@uoanbar.edu.iq

8. Course Objectives

Course Objectives	plant physiology includes the study of all internal processes in plants, and the occurrenc of these chemical and physical processes in plants is linked to their survival. This includ a multi-level study in terms of scale and time. The smallest scales are the molecular interactions that occur in photosynthesis and the inward diffusion of water, elements, ar nutrients. The largest of these measures are the processes that control growth, seasona changes, dormancy, and reproduction in plants.

9. Teaching and Learning Strategies

Strategy	1- explain the scientific subject to students in detail. 2- Discussion and dialogue about vocabulary related to the topic 3- Using explanatory methods to explain the lecture 4- Providing the student with knowledge and understanding of the basic principles plant physiology 5- Providing the student with the skill of linking the practical and theoretical parts 6- Asking questions during the lecture 7- Use a presentation for the lecture 8- Conducting systematic experiments related to plant physiology

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**2**		Solutions	Using figures, blackboard, drawings, and use a presentation	1-Weekly, monthly, and daily exams and the end of the course exam. 2- Giving the students some group activities and tasks 3- Paying attention to daily duties and allocating a percentage of the grade to them
2	**2**		Solution and Colloidal system		
3	**2**		Seeds germination		
4	**2**		First exam		
5	**2**		Diffusion		
6	**2**		Osmosis		
7	**2**		Imbibition		
8	**2**		Second exam		
9	**2**		Photosynthesis		
10	**2**		Transpiration		
11	**2**		Plant nutrition		
12	**2**		Third exam		
13	**2**		Plant hormones		
14	**2**		Growth regulators		

11. Course Evaluation

Evaluation of the course through student evaluation by:
1- quiz
2- Short questions during the lecture

3- Reports 4- Monthly exams: two or more exams if possible 5- Final exam Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation, oral or monthly exams, reports, etc.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Al-Desouki, Heshmat Suleiman and Abeer Ham Al-Hakim (2013) Fundamentals of Pla Physiology, Al-Rashid Library
Main references (sources)	Musalat, Muwaffaq Mazban and Hamoud Ghai Al-Marsoumi (2014) Practical Plant Physiolog Anbar University - College agriculture.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: Thermodynamics
2. Course Code:
3. Semester / Year: Season
4. Description Preparation Date: ١٧/٤/٢٠٢٤
5. Available Attendance Forms: weekly
6. Number of Credit Hours (Total) / Number of Units (Total) 26 hours / 13 units
7. Course administrator's name (mention all, if more than one name)
Name: Mohanad rageb jassim Email: mohand.ragib@uoanbar.edu.iq
8. Course Objectives

8. Course objectives: The study of this course aims to lea about the thermodynamics of materi and some devices through which we stu some experiments to determine t extent of the materials' resistance a non-resiliency to heat.	• ..... • ..... • .....
9. Teaching and Learning Strategies	
Strategy	1- Cognitive objectives *The student's ability to excel and understand modern practi research methods *Providing the student with knowledge and understanding of t basic principles of thermal science *Enabling the student to know the most important thermal tests f materials and liquids 2- The skill objectives of the course *The student should be able to know the extent to which materials c withstand heat

	* Giving the student the skill of linking the practical and theoreti parts 3- Teaching and learning methods * Lecture and use a presentation in its presentation * Conduct systematic experiments related to temperature * Asking questions during the lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	2		Introduction to thermal and Identify devices	Power point	Written exam
٢	2		Finding the coefficient of thermal longitudinal expansion for solid bodies	Power point Interactive	Written exam
٣	2		Converting electrical energy into thermal energy using voltmeters and ammeters	Power point	Written exam
٤	2		Find the latent heat of fusion of ice	Power point Interactive	Written exam
5	2		Mixing water at different temperatures	Power point Interactive	Written exam
6	2		Find the coefficient of thermal conductivity of solids	Power point Interactive	Written exam
7	2		Find the coefficient of volumetric expansion of liquids	Power point Interactive	Written exam
8	2		Measuring the specific heat of a metallic substance by mixing method	Power point Interactive	Written exam
9	2		Review experiments	Power point Interactive	Written exam

11. Course Evaluation

Course evaluation: Course evaluation through student evaluation

1- quiz

2- Short questions during the lecture

3- Monthly exams: two or more exams if possible

4- Final exam	
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)	Thermodynamic laboratory experiments.
Main references (sources)	Thermodynamics book.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: Electrical and Magnetic Laboratory
2. Course Code:
3. Semester / Year: Season
4. Description Preparation Date: ١٧/٤/٢٠٢٤
5. Available Attendance Forms: weekly
6. Number of Credit Hours (Total) / Number of Units (Total) 26 hours / 13 units
7. Course administrator's name (mention all, if more than one name)
Name: Mohanad rageb jassim Email: mohand.ragib@uoanbar.edu.iq
8. Course Objectives

8. Course objectives: The study of the subject aims to ident the laboratory equipment for the abc study material, how to connect a measure resistances, and deal w current and voltages.	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	1- Cognitive objectives *The student's ability to excel and understand modern practi research methods *Providing the student with knowledge and understanding of t basic principles of electricity *Enabling the student to know the most important electrical a magnetic tests for conductors and resistors 2- The skill objectives of the course *The student should be able to know conductors and insulators * Giving the student the skill of linking the practical and theoreti parts

	3- Teaching and learning methods *The lecture and the use of a presentation in its presentation * Conduct systematic experiments related to electricity a magnetism * Asking questions during the lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	2		Introduction to electricity and magnetism Identify devices	Power point	Written exam
٢	2		Experiment to find electrical resistances using colors	Power point Interactive	Written exam
٣	2		Realization of Ohm's law	Power point	Written exam
٤	2		Calculate the value of an unknown resistance	Power point Interactive	Written exam
5	2		Connecting resistors in parallel fulfills Kirchhoff's voltage law	Power point Interactive	Written exam
6	2		Calculate the specific resistance of a metal wire	Power point Interactive	Written exam
7	2		Magnetic force	Power point Interactive	Written exam
8	2		Width of magnetic field flux lines	Power point Interactive	Written exam
9	2		Review experiments	Power point Interactive	Written exam

11. Course Evaluation

Course evaluation: Course evaluation through student evaluation

1- quiz

2- Short questions during the lecture

3- Monthly exams: two or more exams if possible

4- Final exam

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Book of experiments on electricity and magnetism
Main references (sources)	Book of electricity and magnetism.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Sound and wave motion

2. Course Code:

3. Semester / Year:

First/2024

4. Description Preparation Date:

18/4/2024

5. Available Attendance Forms:

Lectures and laboratories

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

4 hours x 15 weeks = 60 hours

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

Name: Dr. Saad Jasim Mohammed Oglah
Email: saad.jassim@uoanbar.edu.iq

8. Course Objectives

Course Objectives	– **Explain and understand the concept of wave motion** – **Explaining the concept of sound, its origin and spread**

9. Teaching and Learning Strategies

Strategy	Lecture and discussion

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	4	The origin of periodic moti	oscillatory motion	theoretical + practical	questions and discussion
2	4	What is simple harmonic motio	Simple harmonic motion	theoretical + practical	questions and discussi
3	4	Types of movement	Longitudinal and transverse wave motion	theoretical + practical	questions and discussi

4	4	The concept and characteristics of sound	the sound	theoretical + practical	questions and discussi
5	4	Applications and characteristics of sound	Sound propagation	theoretical + practical	questions and discussion
6	The first month's theoretical and practical tests				
7	4	Conditions for resonance to occur	Ringing	theoretical + practical	questions and discussion
8	4	How strikes occur	The phenomenon o strikes	theoretical + practical	questions and discussion
9	4	Sound propagation and refraction	Standing waves	theoretical + practical	questions and discussion
10	4	Sound characteristi	Properties of sound waves	theoretical + practical	questions and discussion
11	4	Doppler phenomen in sounds	Amplitude Doppler	theoretical + practical	questions and discussion
12	The first month's theoretical and practical tests				
13	4	The shock wave	The shock wave	theoretical + practical	questions and discussi
14	4	Applications on so	Strings	theoretical + practical	questions and discussi
15	4	Applications on so	Musical instrument	theoretical + practical	questions and discussi

11. Course Evaluation

Grade distribution out of 100, including 35 marks for the theoretical aspect, 15 marks for th practical aspect, and 50 marks for the end-of-semester exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The Physics of Sound and Wave Movement, written by Dr. Yahya Nouri Al-Gammal
Main references (sources)	University physics book
Recommended books and references (scientific journals, reports…)	Nothing
Electronic References, Websites	Nothing

Course Description Form

1. Course Name:

Classic mechanic

2. Course Code:

3. Semester / Year:

First semester —٢٠٢٣2024

4. Description Preparation Date:

١/9/2023

5. Available Attendance Forms:

Classrooms

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

٣٠/٢

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

Name: Mohammed Najeeb jasim
Email: mhamad87@uoanbar.edu.iq

8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies

Strategy	Lecture, discussion, and preparing weekly reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٢	knowledge in the field of mechanical physics and its role in building human civilization in general and determining the units of physical quantities related to the subject.	A general lecture on mechanics, its types, and its historical introduction as a course. - Basic units and dimensions - Vector quantities and measured quantities	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٢	٢	ication of directional and non-directional quantities - Using vector analysis method to extract the resultant for that vector quantity -Vector unit	Acquiring knowledge in the field of vector quantities in two and three dimensions	Lecture, discussion, and preparing weekly reports	nd monthly exams an solving examples
٣	٢	Displacement, time and rate of speed.	g knowledge in the field of movement in two and three dimensions	Lecture, discussion, and	Daily and monthl exams and solvin examples

		- Instantaneous speed and acceleration. - Movement with constant acceleration. Free fall of objects		preparing weekly reports	
٤	٢	Displacement, velocity and acceleration vectors. - Movement of missiles. Circular motion and relative motion.	the concept of movement in two dimensions	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٥	٢	Power . - Newton's first law - Newton's second law - Newton's third law	Gain knowledge of Newton's laws of motion.	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٦	٢	The body is in balance. Body dynamics. And the force of friction.	Gain knowledge in understanding the force of friction	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٧	٢	Dynamics of rotational movement.	Acquire knowledge in the field of work and kinetic energy	discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٨	٢	- - Work. Kinetic energy and the theory of work and energy Work and energy in the presence of a variable force. - Power	owledge in the field of potential energy and the law of conservation of energy	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
٩	٢	Gravitational potential energy Conservative and non-conservative forces. - Power and potential energy	Understand the applications of circular motion	Lecture, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples
١	٢	Problems about circular and rotational motion	Understand the applications of rotational motion	, discussion, and preparing weekly reports	Daily and monthl exams and solvin examples

11. Course Evaluation

Grade: ٥٠. Monthly exam: ٣٥. Assignments: 5. Daily exams:١٠

12. Learning and Teaching Resources

Required textbooks (curriculum books, if any)	Mechanics for science and engineerin students, Dr. Talib Nahi Al-Khafaji
Main references (sources)	General Physics I: Classical Mechanics Ph.D. D.G. Simpson

Course Description Form

1. Course Name: properties of material
2. Course Code:
3. Semester / Year: first 2023 – 2024
4. Description Preparation Date: 17 – 4 –2024
5. Available Attendance Forms: Classrooms + electronic class
6. Number of Credit Hours (Total) / Number of Units (Total) 2 hours theory / 2
7. Course administrator's name (mention all, if more than one name)
Name: eid mohammed monawer Email: eid.mohammed@uoanbar.edu.iq
8. Course Objectives The aim of this course is to acquaint the student with how to study the internal structure of matter, as well as study the mechanical, thermal, and electrical properties of that material.

Course Objectives	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	Conduct dialogue and discussion in an applied manner relate to the reality of daily life to attract students to a topic Lesson without straying from the core of the topic so th the material is flexible and able to be understood and analyse - Giving students some group activities and assignments among themselves. - Paying attention to daily assignments and tests a allocating a percentage of the grade to them.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 2 3 4 5 6 7 8 9 10 11 12 13	2 2 2 2 2 2 2 2 2 2 2 2 2	Conduct dialogue and discussion in an applied manner related to the reality of daily life to attract students to a topic Lesson without straying from the core of the topic so that the material is flexible and able to be understood and analysed. - Giving students some group activities and assignments among themselves.	stress and emotion Classification of stress and strain Types of elastic modulus Stress-strain curve The relationship between modulus of elasticity and temperature First month exam Quantization rule Joule swaps experience Electrical and magnetic properties of materials General properties of semiconductor materials Excessive conductivity Optical properties of materials Second month exam	Teaching and learning methods. - Continuous daily and weekly tests. - Activities during the lesson. - Directing students to some websites to benefit from them. Evaluation methods. - Participation during the lesson. - Providing activities. - Achievement tests are as follows: - A. Semester exams 50% B. End of	Participation during the lesson. - Providing activities. - Achievement tests are as follows: - A. Semester exams 50% B. End of semester exams

				semester exams	

11. Course Evaluation

Involving students in the lesson, evidence of their commitment and interest.
- Assigning students to prepare reports, and adhering to the deadline specified for them.
- Conducting monthly achievement tests. (oral, written), expressing commitment With cognitive and skill achievement.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Heat and properties of matter / Muhammad Ali Ahmed
Main references (sources)	Thermodynamics / Dr. Mohs Abdel Muti Rasoul
Recommended books and references (scientific journals, reports…)	Journal of physics science
Electronic References, Websites	www. Physics science. com

Course Description Form

1. Course Name:

Electromagnetism

2. Course Code:

3. Semester / Year:

First semester ٢٠٢٣–2024

4. Description Preparation Date:

٢٠٢٣/9/١

5. Available Attendance Forms:

Classrooms

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

٣٠/٢

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

Name: Mohammed Najeeb jasim
Email: mhamad87@uoanbar.edu.iq

8. Course Objectives

Course Objectives	

9. Teaching and Learning Strategies

Strategy	Lecture, discussion, and preparing weekly reports

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٢	e student should know foundations electromagnetism and electromagnetic field	Magnetic and electric fi	ture, discussion, preparing wee reports	Daily and monthly exams and solving examples
٢	٢	Know the concept Faraday's law and applications electromagnetism	Faraday's law electromagnetic induction	ture, discussion, preparing wee reports	Daily and monthly exams and solving examples
٣	٢	Know the concept of Le law and its applicati in electromagnetism	Lenz's law concept application	ure, discussion, preparing weekly repo	Daily and monthly exams and solving examples
٤	٢	Know the concept electromotive force how it is generated conductors		Lecture, discussion, preparing wee reports	Daily and monthly exams and solving examples
٥	٢	Understanding how electric generator work	The driving force genera in a moving conductor	Lecture, discussion, preparing wee reports	Daily and monthly exams and solving examples

٦	٢	Acquire the concept opposing torques eddy currents in electr devices and how overcome them	The electric generator working principle, and feedback force in generator	Lecture, discussion, preparing wee reports	Daily and monthly exams and solving examples
٧	٢	g how an electrical ransformer works Knowledge applications Maxwell's equations	Counter torque Eddy currents	Lecture, discussion, preparing weekly repo	Daily and monthly exams and solving examples
٨	٢	ting energy electromagnetic wav	Transformers and pov transmission Caswell's equations	Lecture, discussion, preparing weekly repo	Daily and monthly exams and solving examples
٩	٢	ow the types of modula and how waves modulated to transmitted over l distances	Light as an electromagn wave	Lecture, discussion, preparing weekly repo	Daily and monthly exams and solving examples
١٠	٢	ledge of wave application communications televisions	Wave inclusion its types	Lecture, discussion, preparing wee reports	Daily and monthly exams and solving examples

11. Course Evaluation

Grade: ٥٠. Monthly exam: ٣٥. Assignments: 5. Daily exams:١٠

12. Learning and Teaching Resources

Required textbooks	Electricity and magnetism - Muhammad bin Ali Ahmed
Main references (sources)	Physics Principles and Applications - Douglas S. Gianc
Recommended books and references	Basic Electrical Engineering - I.Mekenzie sm

Course Description Form

1. Course Name:
Chemistry of represented elements
2. Course Code:
2
3. Semester / Year:
the second / 2023- 2024
4. Description Preparation Date:
18 /4/2024
5. Available Attendance Forms:
Daily attendance in classrooms
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hours
7. Course administrator's name (mention all, if more than one name)
Name: Sumood Naser Al-Deen Taha Email: Sum20s3005@uoanbar.edu.iq
8. Course Objectives
1- Identifying the elements represented by their location in the periodic table - studying the general and peric properties of the main elements (periodic size, ionization energies, electronic affinity, electronegativity).
2- Study of hydrogen - its existence and characteristics - its interactions - hydrogen isotopes - its production in industry and its uses.
3- Identifying hydrides and their types - their structure - hydrides of group I elements.
4- Study of alkaline elements - general characteristics - preparation – existence.
5- Identifying the alkaline earth elements - their general characteristics - their preparation - their existence.
6- Study of compounds of group II elements (halides - oxides - hydroxides - carbonates).
7- Identifying the elements of the third group (electronic arrangement - their preparation and characteristics
8- Study of the fourth group of elements: carbon and silicon (existence - characteristics - preparation).
9- Study of the elements of the fifth group: electronic structure - metallic and non-metallic properties - nitrogen, its preparation and compounds - phosphorus, its types and compounds.
10- Study of the sixth group of elements: the characteristics of the elements, their existence, and methods of preparing them - their most important compounds.
11- Study of the group of halogens: introduction - their existence - methods of preparation - their most important compounds.
12- Identifying the elements of the eighth group VIII: the group of inert or rare gases: general characteristics - their compounds - and their uses

1- Teaching and Learning Strategies

1- Using available teaching methods such as the blackboard and data show.
2- Improving students' skills by visiting websites to obtain additional knowledge of the acade subject.
3- Providing students with knowledge through homework assignments for academic vocabulary.
4 - Urging students to visit the library to obtain academic knowledge related to acade vocabulary.
5 - Developing students' ability to acquire knowledge through dialogue and group Discussion.

2- Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introducing students to chemist Representative elements	The elements represented by their location in the table Periodic - study of general properties And the periodicity of the main elements (size periodic, ionization energies, Electron affinity, electronegativity)		
2	2	Introducing students to chemist Hydrogen	Hydrogen - its existence and characteristics - Its reactions - isotopes - production in Industry and its uses.		
3	2	Study of types of hydrides	Hydrides and their types – their composition - Hydridesare group I elements		
4	2	Definition of students With alkaline elements	Alkaline elements - characteristics Public - its preparation - existence		
5	2	First month exam			
6	2	Introducing students to the elements Alkaline earth	Alkaline earth elements – composition Chemical- its properties - its existence -Its compounds and methods of preparation.		
7	2	Study the elements of the Group Third	Elements of the third group – composition		

			Chemical - its properties – its existence -Its compounds and methods of preparation.		
8	2	Study of the elements of the P sector Elements of the fourth group	Elements of the fourth group Chemical composition General propert - its components		
9	2	Study the chemistry of an eleme Silicon	Silicon - its presence - its preparation His Compounds		
10	2	Second month exam			
11	2	Study the elements of the Group Fifth	Elements of the fifth group chemical composition General properties - its components		
12	2	Study elements Sector P (elements Sixth group)	Sixth group elements chemical composition Its compounds -properties - preparation - Its uses		
13	2	Study of halogen elements (Seventh group)	Elements of the seventh grou chemical composition Its compounds -properties - preparation -Its uses		
14	2	Introducing the student to a gro Noble (inert) gases	Elements of the eighth group chemical composition Its compounds - properties - preparation - Its uses		
15	2	Third month exam			

3- Course Evaluation

Daily preparation, oral and monthly exams, Homework, and presenting activities

4- Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Inorganic Chemistry (Chemistry of Representative Elements) by Dr. Mahdi Naji Zakum. Inorganic Chemistry, Mosul, Dr. Issam Girgis. University of Mo Mosul, 1st edition, 1982 AD.
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	Wikipedia

Course Description Form

1. Course Name: Practical immunology
2. Course Code:
3. Semester / Year: Season
4. Description Preparation Date: ١٧/٤/٢٠٢٤
5. Available Attendance Forms: weekly
6. Number of Credit Hours (Total) / Number of Units (Total) 26 hours / 13 units
7. Course administrator's name (mention all, if more than one name)
Name: Lama Dali Ibrahim Ali Email: lama.dali@uoanbar.edu.iq
8. Course Objectives

8. Course objectives: **. The study of this course aims to identify the compone** **of the immune system and some of the interactions** **occur between antibody and antigen, which are** **important factor in diagnosing some immune patholog** **conditions.**	• ..... • ..... • .....

9. Teaching and Learning Strategies

Strategy	- 1- Cognitive objectives *The student's ability to excel and understand modern practical research methods *Providing the student with knowledge and understanding of the basic principles of immunology *Enabling the student to know the most important serological te related to immunity 2-- The skill objectives of the course *The student should be able to excel in the most important organs and cells of the immune system * Giving the student the skill of linking the practical and theoretica parts

	3- Teaching and learning methods * Lecture and use a presentation in its presentation * Conducting systematic experiments related to immunity * Asking questions during the lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	2		Cells and organs of the immune system	Power point	Written exam
٢	2		Plasma and serum separation	Power point Interactive	Written exam
٣	2		Preparing a blood smear	Power point	Written exam
٤	2		) Agglutination tests	Power point Interactive	Written exam
	2				Written exam
5	2		Precipitation tests	Power point Interactive	Written exam
6	2		Infections and tests to investigate them	Power point Interactive	Written exam
7	2		Phagocytosis process	Power point Interactive	Written exam
8	2		ELISA test	Power point Interactive	Written exam
	2				Written exam
9	2		Complement fixation test	Power point Interactive	Written exam
10	2		Hypersensitivity reactions	Power point Interactive	Written exam
11	2		Skin test	Power point Interactive	Written exam
12	2		Coombs test	Power point Interactive	
13	2		Methods of giving antigens and blood draw from laboratory animals	Power point Interactive	

11. Course Evaluation

Course evaluation: Course evaluation through student evaluation

1- quiz

2- Short questions during the lecture

3- Monthly exams: two or more exams if possible

4- Final exam

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)	Immunology and serology by Dr. Sayed Al-Hadidi 2004
Main references (sources)	Practical immunology, College of Education for Pure Sciences / Ibn Al-Haytham. Inaam Abdel Qader Hassan 2019-2020
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name: soild state physics

2. Course Code:

3. Semester / Year: second 2023 − 2024

4. Description Preparation Date: 17 − 4 −2024

5. Available Attendance Forms: Classrooms + electronic class

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

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

Name: eid mohammed monawer
Email: eid.mohammed@uoanbar.edu.iq

8. Course Objectivs The aim of this course is to introduce the student to the solid state of matter and the internal changes that occur to matter in the cubic crystal system and the hexagonal system, as well as to know the crystalline distortions and defects that occur in matter.

Course Objectives	• ….. • ….. • …..

9. Teaching and Learning Strategies

Strategy	Conduct dialogue and discussion in an applied manner related to the reality of daily life to attract students to a topic Lesson without straying from the core of the topic so that the material is flexible and able to be understood and analysed. - Giving students some group activities and assignments among themselves. - Paying attention to daily assignments and tests and allocating a percentage of the grade to them.

10. Course Structure

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

1 2 3 4 5 6 7 8 9 10 11 12 13	 2 2 2 2 2 2 2 2 2 2 2 2 2	Conduct dialogue and discussion in an applied manner related to the reality of daily life to attract students to a topic Lesson without straying from the core of the topic so that the material is flexible and able to be understood and analysed. - Giving students some group activities and assignments among themselves.	the crystal structure Types of solids Types of crystal lattice The grid has two dimensions Paraffic lattices Cubic crystal system Primary Wegener-Zeitz cell First month exam Symmetry in crystals Symmetry elements Installation of contiguous stacking Miller transactions Find Miller's coefficients Directions of crystal planes Second month exam	Teaching and learning methods. - Continuous daily and weekly tests. - Activities during the lesson. - Directing students to some websites to benefit from them. Evaluation methods. - Participation during the lesson. - Providing activities. - Achievement tests are as follows: - A. Semester exams 50% B. End of semester exams	Participation during the lesson. - Providing activities. - Achievement tests are as follows: - A. Semester exams 50% B. End of semester exams

11. Course Evaluation

Involving students in the lesson, evidence of their commitment and interest.
- Assigning students to prepare reports, and adhering to the deadline specified for them.

- Conducting monthly achievement tests. (oral, written), expressing commitment With cognitive and skill achievement.	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Solid state physics / Dr. Supporter Gabriel
Main references (sources)	Solid Physics / Dr. Ali Mohsen Abboud
Recommended books and references (scientific journals, reports…)	Journal of physics science
Electronic References, Websites	www. Physics science. com

Course Description Form

13.	Course Name:
	Sustainable Development
14.	Course Code:
15.	Semester / Year:
	Second semester / Third year
16.	Description Preparation Date:
	7 / 3 / 2024
17.	Available Attendance Forms:
	Attendance + Electronic class
18.	Number of Credit Hours (Total) / Number of Units (Total)
	30 / 30
19.	Course administrator's name (mention all, if more than one name)
	Name: Zayd Abdul-Jabbar Abdullah Email: eng.zayd132@uoanbar.edu.iq
20.	Course Objectives

Course Objectives	• Highlighting the role of education and learning in achieving goals, ambitions and common pursuit. • Encouraging the improvement of the quality of education and its requirements. • Enabling students to rely on themselves and take responsibility; To achieve the requirement of lifelong learning. • Providing students with social and emotional skills to develop themselves. • Contributing to crystallizing and forming new visions regarding the changes and shape of the world. • Making a radical change in the content of education, its results, educational methods, and way of thinking, which is reflected in behavior and actions.

21. Teaching and Learning Strategies

Strategy	a. Adopting an approach that education is the key factor in promoting values, behavior and lifestyles for a sustainable future. b. Explaining the concept of sustainable development to students in detail. c. Students' participation in solving issues related to sustainable development topics. d. Discussion and dialogue on vocabulary related to sustainable development topics. e. Place environmental and sustainability issues at the heart of the learning process and help learners better understand the world in which they live.

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2	The concept of sustainable development and its most important definitions	Sustainable Development	Classroom lectures	discussions and oral exams

2nd	2	Reasons for setting sustainable development goals	Sustainable Development	Classroom lectures	discussions and oral exams
3rd	2	Characteristics of sustainable development and its continuity	Sustainable Development	Classroom lectures	discussions and oral exams
4th	2	The philosophy of sustainable development and its historical evolution	Sustainable Development	Classroom lectures	discussions and oral exams
5th	2	The requirements of sustainable development and its most important elements	Sustainable Development	Classroom lectures	discussions and oral exams
6th	2	Dimensions of sustainable development and its most important areas	Sustainable Development	Classroom lectures	discussions and oral exams
7th	2	Sustainable development trends for local communities and factors influencing them	Sustainable Development	Classroom lectures	discussions and oral exams
8th	2	Preparing written exam questions	First month exam	theoretical	monthly exam
9th	2	Pillars of sustainable development and indicators for achieving them	Sustainable Development	Classroom lectures	discussions and oral exams
10th	2	The role of sustainable development in achieving goals and confronting problems	Sustainable Development	Classroom lectures	discussions and oral exams
11th	2	Sustainable development goals and principles	Sustainable Development	Classroom lectures	discussions and oral exams
12th	2	Sustainable cities and local communities	Sustainable Development	Classroom lectures	discussions and oral exams
13th	2	Iraq's vision for sustainable development goals 2030	Sustainable Development	Classroom lectures	discussions and oral exams
14th	2	The international community's vision for the sustainable development goals	Sustainable Development	Classroom lectures	discussions and oral exams
15th	2	Preparing written exam questions	Second month exam	theoretical	monthly exam

23. Course Evaluation

Daily preparation	Reports	Monthly Exams	Final Exam	Total
5	5	40	50	100

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Sustainable development in Arab countries between theory and practice.

	Written by Dr. Qadri Muhammad Al-Tahir / 2014
Main references (sources)	Sustainable development - its concept - dimensions - indicators Mr. Dr. Medhat Abu Al-Nasr/Dr. Yasmine Medhat Mohamed / 2017
Recommended books and references (scientific journals, reports…)	The reports of the United Nations and scientific journals that specialize in studying sustainable development in various fields.
Electronic References, Websites	Iraqi, Arab and international websites related to sustainable development.

Course Description Form

1. Course Name:
Environment and health
2. Course Code:
3. Semester / Year:
Second / 2024
4. Description Preparation Date:
٢٠٢٤-٤-٢٢
5. Available Attendance Forms:
attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
30h.r /
7. Course administrator's name (mention all, if more than one name)
Name: Aws Z. Abdulmajeed Email: awsa.zabin@uoanbar.edu.iq

8. Course Objectives	
Course Objectives	Providing knowledge and awareness of the relationship between health and the environment, understanding the effects of the environment on public health and promoting environmental awarene teaching environmental health aims to make students aware of the importance of maintaining a clear and healthy environment. Students are encouraged to take action to preserve the environment, minim pollution and promote sustainable environmental practices. It also aims to encourage students to mal healthy decisions and take action to preserve their health and the health of the environment.

9. Teaching and Learning Strategies	
Strategy	1- Providing students with the basics and lectures related to the course 2- Using multiple methods in presenting the material, including Power Point communicate the information well to the recipient. 3- Urge students to utilise Google search engines when asked to submit scientific reports on the course

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Environment and health	The concept of public health	Brainstorming	Oral tests
2	2	Environment and health	Areas of health education	Discussion	Oral tests
3	2	Environment and health	Methods and techniques of health education	Discussion and lecture	Paper tests

4	2	Environment and health	School health	Lecture Discussion	Oral tests
5	2	Environment and health	Nutrients (Carbohydrates)	Brainstorming	Paper tests
6	2	Environment and health	Nutrients (proteins and fats)	Brainstorming	Paper tests
7	2	Environment and health	Nutrients (salts and vitamins)	Brainstorming	Paper tests
8	2	Environment and health	First Month Exam		
9	2	Environment and health	Some malnutrition diseases (obesity)	Presentations Discussion	Oral tests
10	2	Environment and health	Some malnutrition diseases (anaemia)	Presentations Discussion	Oral tests
11	2	Environment and health	First Aid and Home Pharmacy	Lecture Discussion	Paper tests
12	2	Environment and health	Vaccines	Brainstorming Lecture	Oral tests
13	2	Environment and health	Some diseases that affe children	Presentation Discussion	Oral tests
14	2	Environment and health	Some harmful habits (smoking and alcohol)	Group discussic	Oral tests
15	2	Environment and health	Second Month Exam		

11. Course Evaluation

Oral exams: 15
Daily paper-based quizzes: 15
Monthly quizzes: 50
Scientific reports: 20

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	The chemistry of the environment: Dr Hassa Siddiq Environmental Chemistry : Translated by D Hatem Al Najdi

Recommended books and references (scientific journals, reports…)	Alchemy of Life. Dr Tarek Younis Medical Biochemistry. Dr Youssef Barakat
Electronic References, Websites	

Course Description Form

1. Course Name: Practical Biochemistry
2. Course Code:
3. Semester / Year: Season
4. Description Preparation Date: ١٧/٤/٢٠٢٤
5. Available Attendance Forms: weekly
6. Number of Credit Hours (Total) / Number of Units (Total) 26 hours / 13 units
7. Course administrator's name (mention all, if more than one name)
Name: Ahmed Jaber Karakosh Email: ahmad.jaber@uoanbar.edu.iq
8. Course Objectives
Providing students with awareness of the importance of biochemistry in our da lives and its impact on society, as well as understanding the structure a functions of important biomolecules. This course covers a variety of topics relat to biochemistry, including sugars, fats, and amino acids.
9. Teaching and Learning Strategies

Strategy	- 1- Cognitive objectives *The student's ability to excel and understand modern practical research methods *The student must have knowledge of the most important biochemistry topics such as sugars, fats, amino acids, and enzyme **The student must have knowledge of the characteristics of the compounds being studied (such as fats, amino acids, and enzyme their importance, classifications, and their impact on our daily liv

	*The student should have knowledge of the types of compounds, their existence, the reactions they involve, and the most importar laboratory reagents that indicate their different types. 2- The skill objectives of the course *The student must have skill in using chemical analysis methods t determine the composition of compounds and the concentration elements * Giving the student the skill of linking the practical and theoretic parts 3- Teaching and learning methods * Lecture and use a presentation in its presentation *Using various educational means such as a data show device. * Conduct systematic experiments related to the chemistry of the represented elements * Asking questions during the lecture

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	2		**Introduction to sugars**	Power point	Written exam
٢	2		**Statements of pentasaccharides**	Power point Interactive	Written exam
٣	2		**Uranic acids**	Power point	Written exam
٤	2		**Polysaccharides and their disclosures**	Power point Interactive	Written exam
	2				Written exam
5	2		**First month exam**	Power point Interactive	Written exam
6	2		**Fats**	Power point Interactive	Written exam
7	2		**Fatty acids**	Power point Interactive	Written exam
8	2		**Acrolein detection**	Power point Interactive	Written exam
	2		**Second month exam**		Written exam

9	**2**		**amino acids**	Power point Interactive	Written exam
10	**2**		**Reactions of sulfur amino acids**	Power point Interactive	Written exam
11	**2**		**Detection of amino acids (ninhydrin reaction)**	Power point Interactive	Written exam
12	2		Peptides	Power point Interactive	
13	2		Third month exam	Power point Interactive	

11. Course Evaluation

Course evaluation: Course evaluation through student evaluation

1- quiz

2- Short questions during the lecture

3- Monthly exams: two or more exams if possible

4- Final exam

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basics of biochemistry - Dr. Sami Al-Muzaffar (2009) Dar Al Masirah
Main references (sources)	*Introduction to Biochemistry - Dr. Khawla Ahmed (2019) University of Al Mosul * Fundamentals of Biochemistry book - Dr. Abdel Moneim Mohamed The Lefty (2011)
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Gravimetric analytical chemistry

2. Course Code:

2

3. Semester / Year

the second 2023- 2024

4. Description Preparation Date:

17/4/2024

5. Available Attendance Forms:

Daily attendance in the classroom

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

30 hours

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

Name: Sumood Naser Al-Deen Taha
Email: Sum20s3005@uoanbar.edu.iq

8. Course Objectives

Course Objectives

1- The student learns the basics of analytical chemistry, especially learning about gravimetric analysis.
2- Introducing the student to the classification of weight analysis methods.
3- Introduce the student to the steps of weight analysis.
4- Study of the chemical composition of the precipitate and calculations in quantitative gravimetric analys
5- Identify the types of precipitants.
6- Identifying solubility.
7- Study the factors affecting the solubility of sediments.
8- Study of sediment pollution, methods of pollution, and how to avoid and treat it.
9- Identifying washing solutions, their types, and the conditions that must be met in washing solutions.
10- Study separation methods.
11- Identify methods of separation by extraction.
12-Study of separation by paper chromatography, thin layer chromatography, gas chromatograp chromatography, and ion exchange separation methods.

9. Teaching and Learning Strategies

1- Lecture method and using the blackboard and data show.
2- Dialogue and discussion of analytical chemistry topics that require thinking and analysis.
3- Providing students with knowledge through homework assignments for academic vocabulary.
4- Improving students' skills by visiting websites to obtain additional knowledge of the academic subj
5- Urging students to visit the library to obtain academic knowledge related to academic vocabulary.

10. Course Structure

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

1	**2**	**Introducing the student to chemistry Weight analysis**	**Introduction to weight analysis And basic principles.**	**Blackboard And data sh**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
2	**2**	**Introducing the student to classification of weight analysis methods.**	**Gravimetric Analysismethods (dissolut andvolatilization method,isolation, sedimentation).**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
3	3	**Introduce the student to steps of weight analysis**	**Steps in gravimetric analysis: Weigh Sample, sample dissolution, sedimentation Form, digest the precipitate, Filtration, washing sediment, burning the sedim weighing**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
4	**2**	**Identify the chemical composition of the precipitate, know the weight factor, and find the amount of the component to be estimated And his percentage**	**Study of chemical compositio For failure and accounts in analysis Gravimetric quantification.**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
5	**2**	**Introducing the student To organic and inorganic precipitants.**	**Organic and inorganic precipitants, their types, and the characteristics they must have In good sediment**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
6	2		First exam - second semester.		
7	2	**Student definition of solubility**	**Solubility, dissolution yield Ionic yield, examples and problems**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
8	2	**Know the effect of Temperature And the common ion....etc.**	**Factors Affecting portability Solubility of the precipitate.**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
9	2	**Introducing the student sediment contamination**	**Precipitate contamination and its effect on accuracy Results, types of pollutants, co-precipitation contamination, Contamination by subsequent sedimentation ,Avoid pollution and treatment Various pollutants.**	**Blackboar d And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
1	2	**Introducing the student precipitate washing solutions**	**Precipitate washing solutions, their effect Onsediments,their features**	**Blackboar d**	**Conducting oral and written exams, Homeworks, and**

				And data show	**participating in the classroom Provide activities**
1	2	**Second exam - second semester**			
1	2	**Introducing the student to Separation methods**	**Separationmethods (separation by sedimentation, Separation by distillation, its types, and how to separate).**	**Blackboard And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
1	2	**Introducing the student to the Separation by extraction**	**Separation by extracting principles Basic, mathematical lawsFor extraction and extraction techniques**	**Blackboard And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
1	2	**Introducing the student to the Separation By chromatography**	**Chromatographic separation methods general idea Advantages of chromatographic methods Classification of chromatographic methods**	**Blackboard And data show**	**Conducting oral and written exams, Homeworks, and participating in the classroom Provide activities**
1	2	**Third exam - second semester**			

11. Course Evaluation

Daily preparation, oral or monthly exams and homework

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**General foundations of chemical and gravimetric analysis Dr. Safaa Razouki, Part One.**
Main references (sources)	**1-Fundamentals of Analytical Chemistry,Douglas Skoog andDonald M. West Eight Edition.** **2-Practical applications in instrumental chemical analyse Separation methods - Ismail Khalil Al-Hiti.**
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:
Electricity and magnetisim
2. Course Code:
3. Semester / Year:
Second/2024
4. Description Preparation Date:
18/4/2024
5. Available Attendance Forms:
Lectures and laboratories
6. Number of Credit Hours (Total) / Number of Units (Total)
4 hours x 15 weeks = 60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Saad Jasim Mohammed Oglah Email: saad.jassim@uoanbar.edu.iq
8. Course Objectives

Course Objectives	– **Explain and understand the concept electricity and magnetism** – **Explain the concept of electric fieldA the magnetic field**
9. Teaching and Learning Strategies	
Strategy	Lecture and discussion

10. Course Structure

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

11	4	Static electric	Electric charge	theoretical + practical	questions and discussion
2	4	Electric field	Electric field intensity	theoretical + practical	questions and discussion
3	4	Electrical voltage	Electric potential difference	theoretical + practical	questions and discussion
4	4	Chaos' law	Chaos' law	theoretical + practical	questions and discussion
5	4	Electrical capacity	Ligation of expanders	theoretical + practical	questions and discussion
6	The first month's theoretical and practical tests				
7	4	Animated electric	electric currer	theoretical + practical	questions and discussion
8	4	electrical resistance	Ohm's law	theoretical + practical	questions and discussion
9	4	Sound propagation a refraction	Standing wav	theoretical + practical	questions and discussion
10	4	Kirchhoff's la	Kirchhoff's law of current	theoretical + practical	questions and discussion
11	4	Alternating current	Sinusoidal voltages	theoretical + practical	questions and discussion
12	The second month's theoretical and practical tests				
13	4	Effective valu of alternating current	Alternating current	theoretical + practical	questions and discussion
14	4	Ringing	Resonance in series circuits	theoretical + practical	questions and discussion
15	4	Solved examples and problems	Examples and issues	theoretical + practical	questions and discussion

11. Course Evaluation

Grade distribution out of 100, including 35 marks for the theoretical aspect, 15 marks for the practical aspect, and 50 marks for the end-of-semester exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	- Static Electricity Book - Book of electricity and magnetism
Main references (sources)	Book of electricity and magnetism

Recommended books and references (scientific journals, reports…)	Nothing
Electronic References, Websites	Nothing

Course Description Form

1. Course Name:

Soil Chemistry

2. Course Code:

3. Semester / Year:

2 nd Semester 202٣-202٤

4. Description Preparation Date:

5. Available Attendance Forms:

Lectures - laboratories

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

3 / 4

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

Name: Ali Mowafaq Salih

Email: Ali.mowafaq@uoanbar.edu.iq

8. Course Objectives

Course Objectives

It aims to explain the principles used in studying the chemical composition of so
Through this course, the student is introduced to all the chemical properties of s
and how to estimate and calculate them practically and in the field.

9. Teaching and Learning Strategies

Strategy	1- Explaining the scientific material to students in detail. 2- Discussion and dialogue about vocabulary related to the topic 3- Using figures and illustrative means to explain the lecture

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
١٢	٣٦	Monthly written and practical exams with reports and a	1- Protection from soil chemistry 2- Mineral components of soil	Delivering the lecture in person in	1-Weekly, monthly, daily exams and the

		final written and laboratory exam	3- Primary and secondary minerals in soil 4- The exam is the first month 5- Strict humus 6- Cation exchange 7- Reactions of acids, bases, oxidation and reduction 8- Soil solution 9- Second month exam 10- Soil intercalation and solid development 11- Soil acidity and alkalinity 12- Third month exam	the classroom using illustration tools such as models and drawings from a blackboard and a projector.	end of the year exam. 2- Giving the students some group activities and tasks 3- Paying attention to daily duties and allocating a percentage of the grade to them	

11. Course Evaluation

1- Distribution of the score out of 50 according to the tasks assigned to the student, such as 1- Participation in the lecture hall 2- Practical evaluation in the laboratory 3- Theoretical and practical monthly tests 4- Reports

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Principles of Soil Chemistry: Kazem Awad Mashhout, 1985, University of Basra	
Main references (sources)	Principles of soil science: Abdullah Al-Ani, 1981	
Recommended books and references (scientific journals, reports…)		
Electronic References, Websites		

Course Description Form

1. Course Name:
COLLEGE OF BASIC EDUCATION - HADITHA
2. Course Code:
3. Semester / Year:
2 nd Semester 202٣-202٤
4. Description Preparation Date:
5. Available Attendance Forms:
Lectures - laboratories
6. Number of Credit Hours (Total) / Number of Units (Total)
3 / 4
7. Course administrator's name (mention all, if more than one name)
Name: Ali Mowafaq Salih Email: Ali.mowafaq@uoanbar.edu.iq
8. Course Objectives
Course Objectives 1- Identify the characteristics of the human body. 2- Identify the cells that make up the human body. 3- Knowing the shape, size and composition of cells. 4- Identify the human circulatory system. 5- Study of the human respiratory system and the mechanism of breathing. 6- Study of the human skeletal system. 7- Identify the human nervous system. 8- Identify the human digestive system. 9- Identify the human muscular system 10· Learning Outcomes, Teaching ,Learning and Assessment Methode
9. Teaching and Learning Strategies

Strategy	1- Explaining the scientific material to students in detail. 2- Discussion and dialogue about vocabulary related to the topic 3- Using figures and illustrative means to explain the lecture

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	**4**		introduction to human biology and a historical overview of the scientists who worked in this field	Using figures, blackboard, drawings, and PowerPoint	1-Weekly, monthly, and daily exams and the end of the course exam. 2- Giving the students some group activities and tasks 3- Paying attention to daily duties and allocating a percentage of the grade to them
2	**4**		Learn about the cells that make up the human body	Using figures, blackboard, drawings, and PowerPoint	
3	**4**		Identify the cells that make up the human body in terms of form and function	Using figures, blackboard, drawings, and PowerPoint	
4	**4**		Identify the circulatory system and blood distribution within the body	Using figures, blackboard, drawings, and PowerPoint	
5	**4**		Identify the human respiratory system in detail	Using figures, blackboard, drawings, and PowerPoint	

6	**4**		Study of the skeletal system	Using figures, blackboard, drawings, and PowerPoint	
7	**4**		Identify the nervous system	Using figures, blackboard, drawings, and PowerPoint	
8	**4**		Identify the digestive system	Using figures, blackboard, drawings, and PowerPoint	
9	**4**		Identify the human muscular system	Using figures, blackboard, drawings, and PowerPoint	
10	**4**		Urinary system	Using figures, blackboard, drawings, and PowerPoint	
11	**4**		Installation of the kidney	Using figures, blackboard, drawings, and PowerPoint	
12	**4**		Some organic diseases that affect various systems	Using figures, blackboard, drawings, and PowerPoint	

11. Course Evaluation

1- Distribution of the score out of 50 according to the tasks assigned to the student, such as 1- Participation in the lecture hall 2- Practical evaluation in the laboratory 3- Theoretical and practical monthly tests 4- Reports

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1-Hamid Ahmed Al-Hajj. 2017, Human Biology, Dar Al-Maysara for Publishing, Distribution and Printing. 2- Ayesh Mahmoud Zaitoun. 1987, Introduction to Human Biology, 2nd edition - Amman: University of Jordan, Cooperative Printing Workers Association.
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course Name:

Animal Physiology

2. Course Code:

3. Semester /Level /Year:

First / Third /2023-2024

4. Description Preparation Date:

8−10−2023

5. Available Attendance Forms:

Attendance

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

Number of Credit Hours (30) / Number of Units (2)

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

Name: Prof. Dr. Khalid Dfeek Ahmed
Email: khdkda@uoanbar.edu.iq

8. Course Objectives

Course Objectives	• **Understanding vital functions** • **Adapt to the environment** • **Clinical applications:** • **Encouraging students to explore areas of physiological research** • **Developing analytical, critical and experimental thinking skills understanding physiological and mechanical phenomena in animals.**

9. Teaching and Learning Strategies

Strategy	• Providing students with the basics and lectures related to the subject. • Using Power Point presentation methods for the purpose of conveying the information well and clearly to the student. • Urging students to take advantage of Google search engines by asking them to submit scientific reports on the topics given to them in the study material.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Animal Physiology	Introduction to animal physiology	Lectures-Presentations-	Quizzes Oral exams

				Group Discussions	
2	2	Animal Physiology	Classification of anim according to their sensitivity to heat	Lectures-Presentations-Group Discussions	Quizzes Oral exams
3	2	Animal Physiology	Desert animals	Lectures-Presentations-Group Discussions	Quizzes Oral exams
4	2	Animal Physiology	Urinary tract	Lectures-Presentations-Group Discussions	Quizzes Oral exams
5	2	Animal Physiology	Respiratory system	Lectures-Presentations-Group Discussions	Quizzes Oral exams
6	2	Animal Physiology	Discuss reports	Group Discussions	Homework
7	2	Animal Physiology	Monthly exams		
8	2	Animal Physiology	Digestive	Lectures-Presentations-Group Discussions	Quizzes Oral exams
9	2	Animal Physiology	Heart and circulatory system	Lectures-Presentations-Group Discussions	Quizzes Oral exams
10	2	Animal Physiology	Nervous system	Lectures-Presentations-Group Discussions	Quizzes Oral exams
11	2	Animal Physiology	Musculature	Lectures-Presentations-Group Discussions	Quizzes Oral exams
12	2	Animal Physiology	Reproductive system	Lectures-Presentations-Group Discussions	Quizzes Oral exams
13	2	Animal Physiology	Endocrine	Lectures-Presentations-Group Discussions	Quizzes Oral exams
14	2	Animal Physiology	Discuss reports	Group Discussions	Homework
15	2	Animal Physiology	Monthly exams		

11. Course Evaluation

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

Daily preparation: 15 Oral exams: 30 Monthly exams: 35 Reports: 20

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	• Animal Physiology 2016 Medhat Hussein • Physiology (2010) Dr. Mahmoud Abu Aoun. • Member functions in 2007, Prof. Dr. Ahmed Al-Qamat
Recommended books and references (scientific journals, reports…)	
Electronic References, Website	