Academic Program Description Form

University Name: Tikrit.....

Faculty/Institute: College of Education – Tuzkhurmatu.....

Scientific Department: Department of Biology.....

Academic or Professional Program Name: Bachelor of Biology.....

Final Certificate Name: Bachelor of Biology.....

Academic System: Yearly.....

Description Preparation Date: 2024–2025

File Completion Date: 2025 / /

Signature:

Head of Department Name:

Turkan Ahmed Hama

Date: 2025 / /

Signature:

Scientific Associate Name:

Ali Akram Musa

Date: 2025 / 2 / 2

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department: Ali Salah Zein El Abidine

Date: 2025 /2/2

Signature:

Approval of the Dean

Prof. Dr. Nihad Ali Shafiq

2025 /2/ 2

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 extracurricular activities to achieve the learning outcomes of the program.

1. Program Vision

The vision of the Department of biology Sciences lies in preparing a conscious generation capable of keeping pace with the scientific development in the areas of life in general and life sciences in particular, as this section worked at a high level of efficiency and practical experience.

2. Program Mission

The message of the Department of biology Sciences is purposeful and scientific, working to raise scientific generations capable of keeping pace with scientific developments in various cultural fields, so its supreme mission in presenting the competent professor who is responsible for his reality and its accommodation with a pictured spirit to knowledge and learning.

3. Program Objectives

Preparing teachers and teachers at a high level of skill.

- Preparing a generation of distinguished researchers in life sciences.
- Community service by providing information about life sciences
- Development of faculty members scientifically and culturally.

• Explaining the great importance of science and its role in society.

4. Program Accreditation

There is no

5. Other external influences Is

Many holidays during the education year

نموذج وصف البرنامج الأكاديمي

Academic Program Description Form

University Name: Tikrit University

Faculty/Institute: College of Education Tuzkhurmatu

Scientific Department: Biology

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

Final Certificate Name: B.Edu. in Biology

Academic System: Yearly

Description Preparation Date: 7/3/2024

File Completion Date: 23/1/2025

Signature:	**Signature:**
Head of Department Name:	**Scientific Associate Name:**
Date:	**Date:**

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	**5**	**10**	**%50**	
College Requirements	**2**	**6**	**%20**	
Department Requirements	**5**	**24**	**%50**	
Summer Training	**-**	**-**		
Other				

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

7. Program Description

First Year

Course Name	Course Code	Credit Hours		Units
		Theoretical	Practical	
biology	101BGB	2	2	
Anatomy of the plant	103BPA	2	2	
Cell life	102BCB	2	2	
General chemistry	104BGC	1	2	
Earth	109BGE	1	-	
Fundamentals of education	110FE	1	-	
Psychology growth and educational	106EP	2	-	
Biological security and safety	112BSS	1	-	
Computers	108CO	1	-	
Arabic	105AL	1	-	

8. Expected learning outcomes of the program

Knowledge

The student was able to understand life sciences with its various branches. • Preparing life sciences teachers at levels that keep pace with the development. • The student understands the individual differences between students. • The student understands the correct foundations of scientific research. Providing students with full knowledge in the field of life sciences Preparing staff with high competencies specialized in the field of life sciences

Skills	
• That the student acquires the skills of describing life sciences.	• That the student acquires the skills of describing life sciences.

9. Teaching and Learning Strategies

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

• A lover of his assigned work. • A lover of knowledge. • Adopting the method of dialogue between the student and the professor. • The ability to work in a multidisciplinary team	1. • Class education through scientific lectures. 2. • Preparing reports and research. 3. •. Practical learning in scientific laboratories
Ethics	
• Treatment method using final grades. Random and surprising tests. • Monthly theoretical tests and practical reports in the curriculum that was taught.	

10. Evaluation methods

1. • Treatment method using final grades.
2. Random and surprising tests.
3. • Monthly theoretical tests and practical reports in the curriculum that was taught.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Prof. Dr. Ihsan Abdel Aziz Abdel Rahim	Biological sciences	The vital and evolutionary classification of the plant			✓	
Assist. Dr. Turkan Ahmed Hama Hassan	Biological sciences	parasites			✓	
Assist. Dr. Ali Akram Musa	Agricultural sciences	Forest			✓	
Assist. Dr. Samar grew up on	Agricultural sciences	Plant			✓	
Assis .lect. Zainab Karim Ahmed	Biological sciences	Medical parasites			✓	
Assis .lect Mateen Abdul Amir Mahdi	Chemistry sciences	Life chemistry			✓	
Assis .lect Sajjad Abdullah Hussein	Biological sciences	Animal			✓	
Assis .lect Ahmed Abdel Hussein Qanbar	Chemistry sciences	Physical chemistry			✓	
Assis .lect Haider Mahdi Ahmed	Chemistry sciences	Membership chemistry			✓	
Assis .lect Benin Ali Askar	Biological sciences	Microscopic biology			✓	
Assis .lect Khawla Salem Muhammad	Chemistry sciences	Physian chemistry			✓	
Assis .lect Marwa Jamil Hassan	Arabic	Methods of teaching Arabic			✓	

Assis .lect Batoul Khalaf Muhammad	Biological sciences	Animal			✓	
Assis .lect Ibtisam Jassim Mohammed	Biological sciences	entomology			✓	
Assis .lect Muhammad Hussein Aziz	Agricultural sciences	Garden and garden engineering			✓	
Assis .lect Ramadan Muhammad Qadir Ahmed	Curricula and teaching methods	General teaching methods			✓	

Professional Development

Mentoring new faculty members

The department head directs new faculty members by recommending that they adhere to working hours and adhere to lecture dates and urges them to develop their scientific abilities in order to provide the correct delivery to the student.

Professional development of faculty members

The head of the department developed a plan for faculty members that include class and inflammatory activities for students in order to improve the level of the educational process, and also urges them to adhere to the deadlines for lectures, record absences and pay attention to all tests.

12. Acceptance Criterion

Central admission according to the instructions of the Ministry of Higher Education and Scientific Research.

13. The most important sources of information about the program

- Books scheduled by the Ministry of Higher Education and Scientific Research.
- External scientific confiscation.
- The use of central and internet libraries

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First Year	101BGB	biology	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	102BCB	Cell life	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	103BPA	Anatomy	Basic	↗	↗	↗	↗			↗	↗	↗	↗	↗	↗
	104BGC	General chemistry	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	105AL	Arabic	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗			↗
	106EP	Educational psychology	Basic	↗	↗	↗	↗	↗	↗			↗	↗	↗	↗
	107DHR	Human rights and democracy	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	108CO	Computers	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	109BGE	Earth	Basic	↗	↗	↗	↗	↗		↗	↗	↗		↗	↗
	110FE	Fundamentals of education	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
	111EL	English	Basic	↗	↗	↗		↗	↗	↗	↗	↗	↗	↗	↗
	112BSS	Biological security and safety	Basic	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗

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

Course Description Form

1. Course Name:

Cell life

2. Course Code:

102BCB

3. Semester / Year:

Yearly

4. Description Preparation Date:

2025/1/26

5. Available Attendance Forms:

Weekly

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

4/6

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

Assist. Dr. Turkan Ahmed Hama Hassan

8. Course Objectives

Course Objectives	Providing the student with information about the basics and principles of cell science and scientific developments in this field

9. Teaching and Learning Strategies

Strategy	That the student get acquainted with biological scientific concepts For animal and plant cell -The student should have the ability to describe the forms -The student gets to know how to take advantage of the laboratory devices

10. Course Structure

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

1	2	General Introduction to the cell	Understanding the topic of the lecture		
2	2	viruses	Understanding the topic of the lecture		
3	2	chemical components of the cell	Understanding the topic of the lecture		
4	2	studying living cells	Understanding the topic of the lecture		

5	2	e empty cytoplasmic system	Understanding the topic of the lecture		
6	2	the Andoplasmic network - a coli device	Understanding the topic of the lecture		
7	2	- the body bodies)	Understanding the topic of the lecture		
8	2	energy ornaments	Understanding the topic of the lecture		
9	2	cellular division	Understanding the topic of the lecture		
10	2	(ritual and breach division)	Understanding the topic of the lecture		
11	2	study the phenomenon of transit	Understanding the topic of the lecture		
12	2	and genetic boom	Understanding the topic of the lecture		
13	2	Chromosomes	Understanding the topic of the lecture		
14	2	Genetic System	Understanding the topic of the lecture		

15	2	Genetic system	Understanding the topic of the lecture		
16	2	Special chromosomes	Understanding the topic of the lecture		
17	2	Genetic system	Understanding the topic of the lecture		
18	2	Genetic expression	Understanding the topic of the lecture		
19	2	Study the phenomenon of transit	Understanding the topic of the lecture		
20	2	And the genetic boom	Understanding the topic of the lecture		

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)	Theoretical cell book for the first stage Prof. Dr. Gabriel Barhoum Aziz Books and research published from scientific magazines Rinhaina issued by publishing houses (Ambassador-Sprinker- Waili) The electronic virtual library-sober references from Internet
Recommended books and references (scientific journals, reports...)	---------
Electronic References, Websites	**Google Scholar**

Course Description

T.A. Wejdan.Hameed.Ibrahim

This course description provides a concise summary of the main characteristics of the course and the expected learning outcomes that students should achieve, demonstrating whether they have maximized the available learning opportunities. It must also link to the program description.

Educational Institution	University of Tikrit / College of Education Tuz Khurmatu
Scientific Department / Center	Life Sciences
Course Name / Code	Arabic Language, AL105
Available Attendance	Modes In-class Attendance
Semester / Year	2024 / 2025
Total Credit Hours	30 Hours
Date of Preparing this Description	25/ 1 / 2025

Course Instructor Name

M.A. Wejdan.Hameed.Ibrahim **Wejdan.h.ibrahim@tu.edu.iq Gmail**

Course Objectives

Introduction to the subject of general Arabic language.

Familiarity with general issues of spelling and punctuation.

Equipping the student with skills to solve exercises.

Helping the student differentiate between language, speech, and saying

Introduction to literature and its branches.

Developing the student's cognitive motivation.

Cultivating scientific curiosity towards the subject

Teaching and Learning Strategies

.Attention to attending lectures on time

.The lecture

.Discussion

.Solving exercises

Course Structure					
Assessment Method	Teaching Method	Unit or Topic Name	Required Learning Outcomes	Hours	Week
Oral and written exams	Lecture and discussion	Surah Al-Kahf	Understanding and memorizing the topic	1	2 November
Oral and written exams	Lecture and discussion	The Subject and Predicate	Understanding the topic	1	3November
Oral and written exams	Lecture and discussion	The Root and Derived Forms	Understanding the topic	1	4 November
Oral and written exams	Lecture and discussion	The Solar and Lunar Letters	Understanding the topic	1	1 December
Oral and written exams	Lecture and discussion	Punctuation Marks	Understanding the topic	1	2 December
Oral and written exams	Lecture and discussion	Al-Mutanabbi's Nuniyya in Shu'b Buwan	Understanding and memorizing the topic	1	3 December
Oral and written exams	Lecture and discussion	Kana and its Sisters	Understanding the topic	1	4 December
Oral and written exams	Lecture and discussion	The Object	Understanding and memorizing the topic	1	1 January
Oral and written	Lecture and	Excerpt from the	Understand	1	2 January

exams	discussion	Book 'The Life of Muhammad Hussein Heikal'	ing the topic		
Oral and written exams	Lecture and discussion	Verb and Temporal Indications	Understanding the topic	1	3 January
Oral and written exams	Lecture and discussion	Writing the Hamza	Understanding the topic	1	4 January
Oral and written exams	Lecture and discussion	The Object	Understanding the topic	1	1February
Oral and written exams	Lecture and discussion	The Dependents	Understanding the topic	1	2 February
Oral and written exams	Lecture and discussion	Al-Qushayri's Ayniyya	Understanding and memorizing the topic	1	3 February
Oral and written exams	Lecture and discussion	The Absolute Object	Understanding the topic	1	4 February
Oral and written exams	Lecture and discussion	Writing the Letter Taa	Understanding the topic	1	2 March
Oral and written exams	Lecture and discussion	Ealaa Hamish AL siyra "Halima AL -Sadia	Understanding the topic	1	3 March
Oral and written exams	Lecture and discussion	The Circumstantial Object	Understanding the topic	1	4 March
Oral and written	Lecture and	Exception	Understand	1	1 April

exams	discussion		ing the topic		
Oral and written exams	Lecture and discussion	The Dependents	Understanding the topic	1	2 April
Oral and written exams	Lecture and discussion	Numbers	Understanding the topic	1	3 April
Oral and written exams	Lecture and discussion	Primary and Secondary Markers	Understanding the topic	1	4 April
Oral and written exams	Lecture and discussion	Surah Ad-Duha	Understanding and memorizing the topic	1	1 May
Oral and written exams	Lecture and discussion	The Adverbial Case	Understanding the topic	1	2 May
Oral and written exams	Lecture and discussion	The Accompaniment Object	Understanding the topic	1	3 May
Oral and written exams	Lecture and discussion	The Purpose Object	Understanding the topic	1	4 May
Assessment Methods:					
Written daily and monthly tests.					
Learning and Teaching Resources:					
There are no books			Prescribed Required Books (if any):		

Recommended Supporting Sources and References:
.Ibn Aqil's Explanation of Ibn Malik's Alfiyyah .Shadha al-‘Urf fi Funun al-Sarf by Ahmed al-Hamlawi .Jami' al-Durus al-Arabiyya by Mustafa al-Ghlayini Course
Electronic References:
Noor Library: https://search.app/Jq64GAXPLriv3QBK6 Arabic Literature Library: https://t.me/dewan55 General Arabic Language Library: https://t.me/langnnnarabic
Development Plan:
Increasing the number of practical lecture hours and updating the syllabus.

Course Description Form

1. Course Name:
Plant anatomy
2. Course Code:
103BPA
3. Semester / Year:
Year
4. Description Preparation Date:
10/10/2024
5. Available Attendance Forms:
Daily
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: Assist. Prof. Dr Ihsan AbdulAzeez AbduRaheem Email: ihsan.abdulazez@tu.edu.iq
8. Course Objectives

Course Objectives	• **Describing plant anatomy** • **Plant cell and composition** • **Pits** • **Parenchyma tissue** • **Collenchyma tissue** • **Sclerenchyma tissue** • **Permanent tissue** • **Plant apex theories** • **Xylem tissure** • **Phloem tissue** • **Water plants** • **Desert plants**

9. Teaching and Learning Strategies	
Strategy	Definition of plant anatomy Plant tissue benefits Plant tissue parts Living and non living compounds in plant cell

	Student learns plant anatomy Student learns plant plant parts recognizing Student learns plant anatomy slides Student learns answer questions

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2	2	Plant cell	Plant anatomy	Lecture	Questions
3-4	2	Living compounds In plant cell Plant cell	Plant anatomy	Lecture	Questions
5-6	2	Non living compounds	Plant anatomy	Lecture	Questions
7-8	2	Parenchyma tissue	Plant anatomy	Lecture	Questions
9-10	2	Collenchyma tissue	Plant anatomy	Lecture	Questions
11-12	2	Sclerenchyma Tissue	Plant anatomy	Lecture	Questions
13-14	2	Plant apex Theories	Plant anatomy	Lecture	Question
15-16	2	Corek cambiur	Plant anatomy	Lecture	Questions
17-18	2	Corek tissue	Plant anatomy	Lecture	Question
19-20	2	Xylem tissue	Plant anatomy	Lecture	Question
21-22	2	Xylem tissue Monocots.	Plant anatomy	Lecture	Questions
23-24	2	Phloem tissue	Plant anatomy	Lecture	Questions
25-26	2	Roots	Plant anatomy	Lecture	Question
27-28	2	Plant leaf	Plant anatomy	Lecture	Question

29-30	2	Desert plants	Plant anatomy	Lecture	Question

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)	yes
Main references (sources)	Books and internet
Recommended books and references (scientific journals, reports…)	journals
Electronic References, Websites	Websites

Course Description Form

1. Course name:	
General Chemistry Practical	
2. Course code:	
104BGC	
3. Semester/Year: Annual	
Annual	
4. Date this description was prepared	
2025/11/10	
5. Available attendance forms:	
daily	
6. Number of study hours (total) / Number of units (total):	
60 hours /	
7. Name of the course administrator (if more than one name is mentioned)	
the name: Haider Mahdi Ahmed Abdul Sattar Saleh Asi Marwa Gamil Ahmed Abdel Hussein Qanbar Email:haider.m.ahmed@tu.edu.iq	
8. Course objectives	
	1- Understand and comprehend the materialGeneral Chemistry Practical. 2- Dealing withChemical experiments in the field of analytical and organic. 3- Understanding methods and techniquesTo prepare standard solutions solid and liquid substances

9. Teaching and learning strategies	
	1- Explaining the scientific material to students in detail. **2- Student participation inWork to prepare standard solutions in analytical and organic chemistry** **3- Discussion and dialogue on vocabulary related to the topic.**

Course structure .10

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	The week
Daily exams And homework In addition to Exams Monthly	The blackboard What is your data?	Terminology for some laboratory tools and glassware used in experiments	Introducing the student to some laboratory tools and glassware	2	**1**
=	=	Introduction to Chemistry Membership	Student definition In organic chemistry Its importance in our lives	2	**2**
=	=	Crystallization	Student definition of crystallization	2	**3**
=	=	melting point	Student definition Melting point	2	**4**
=	=	And boiling	Student definition boiling	2	**5**

=	=	Distillation and its types	Introducing the student to distillation and explaining it Its types	2	**6**
=	=	Extraction	Introducing the student to extraction	2	**7**
=	=	Aspirin preparation	Detailed explanation of how Aspirin preparation	2	**8**
=	=	eparation of salicylic acid from aspirin	Detailed explanation of how Preparation of salicylic acid aspirin	2	**9**
=	=	Acid hydrolysis of acetylsalicylic acid	Detailed explanation of decomposition acidic water acid Acetylsalicylate	2	**10**
=	=	Alcohol detection	Student definition of Alcohol Tests	2	**11**
=	=	Detection of aldehydes	Student definition of aldehyde detection	2	**12**
=	=	Ketone detection	Student definition of statements Ketones	2	**13**
=	=	Introduction to Chemistry Analytical	Introducing the student to chemistry Analytical and its types	2	**14**

=	=	Correction	Introducing the student to correction	2	**15**
=	=	Methods of expressing solution concentrations in analysis and quantitative calculations related to volumetric analysis	Introducing the student to volumetric analysis	2	**16**
=	=	Prepare a solution of a solid substance of sodium chloride salt at a concentration of 0.5 M and size 500 ml	Detailed explanation of how to prepare Standard solution of a solid	2	**17**
=	=	Prepare a solution of a liquid substance of concentrated hydrochloric acid at a concentration of 0.12 N and 250 ml volume	Detailed explanation of how Preparing a standard solution of a liquid substance	2	**18**
=	=	Volumetric analysis reactions	Student definition Volumetric analysis reactions	2	**19**
=	=	Prepare a solution0.1 N of hydrochloric acid and titrate it with a standard solution of carbonate. Sodium	Detailed explanation of how Hydrochloric preparation And calibrate it with a solution Standard carbonate Sodium	2	**20**

=	=	Prepare a solution0.1 N of NaOH and its comparison with a standard solution of HCl	Detailed explanation of how Hydroxide preparation Sodium from solution Standard Hydrochloric	2	**21**
=	=	Complex formation reactions	Introducing the student to interactions Complex Formation	2	**22**
=	=	Set vinegar quality	Student definition of appointment Vinegar quality	2	**23**
=	=	Estimation of water hardness	Student definition of appreciation Hardness in water	2	**24**

.11 Course Evaluation

1. **Daily tests with multiple choice questions that require scientific skills.**
2. **Participation scores for competition questions for academic topics**
3. **Grading homework**
4. **Practical tests**
5. **Reports and studies**

Learning and teaching resources .12	
	quired Textbooks ethodology if any)
1.Skoog DA, West DM, Holler FJ and Crouch SR 2013. Fundamentals of analytical chemistry, Nelson Education. 2.John H. Kennedy1991. Fundamentals of Practical Analytical Chemistry. Translated by Sarmed Bahjat Dikran and NabilAdel Fakhry. University of Salahaddin. .March's 2007 Advanced Organic Chemistry: Reactions, Mechanisms, and Structure, Sixth Edition (March's Advanced Organic Chemistry) P.2,377. .Hanan Abdel Jalil Rady, Mohamed Ahmed Abdel.2004 Practical Organic Chemistry. University of Basra	in References (Sources)
WWW.chemicalprocessing.com	Recommended supporting books and references (scientific journals, reports, etc.)
https://learnchemistry12.com/	Electronic references, websites

Course Description Form

1. Course Name: Foundations of education and educational guidance

2. Course Code: 1 Rating: 016 A S T

3. Semester / Year:yearly

4. Description Preparation Date: 10/10/2024

5. Available Attendance Forms: Basic attendance

6. Number of Credit Hours (Total) / Number of Units (Total)60 hour

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

Name: Zainab Chalabi Mohamad
Email: Zinab.g.mohamad@tu.edu.iq

8. Course Objectives

General Objectives •Increase the student's understanding of the educational and social reality throughout the ages •Realize the educational process in its most essential necessities •Understand educational theories of various peoples, ancient and modern A-Cognitive Objectives A1- The student should possess the knowledge and information that help achieve adaptation and compatibility as well as psychological adaptation to solve life and daily problems	**B – Program specific skill objectives** **B1– Developing the student's skill towards increasing the research skill and scientific achievement** **B2– Developing the student's skill towards increasing the effectiveness of scientific achievement** **B3-– Developing the student's skill towards increasing interaction with others** **B4-– Developing the student's skill towards increasing understanding of the foundations and principles of general education in the past and present** **C– Emotional and value objectives.** **C1– The student adheres to professional ethics.** **C2– The student possesses literary and human thinking skills.**

A2- The student should learn about the meaning of the foundations of education, its goals and theories A3- Understand the basic principles of the foundations of education and enable the student to apply them in life A4- The student should learn about the historical educational foundation and understand the main ideas put forward by scholars and thinkers A5- Provide the student with sufficient information and knowledge to enable him to analyze and evaluate them A6- The student should learn about the meaning of intellectual development and how to achieve scientific gains	**C3- The student possesses critical thinking skills.** **C4- The student possesses decision-making skills.** **C5- The student listens well to the lesson topic** **C6- The student responds to questions related to the fields of education and its foundations** **C7- The student accepts the subject of education and its foundations** **C8- The student compares between the fields of education in societies** **C9- The student evaluates the fields of education its foundations**

9. Teaching and Learning Strategies

Strategy	Brainstorming, dialogue, discussion and some classroom activities. - Using educational discussion (educational dialogue) which depends on exchanging ideas to reach the facts. - Group memo to involve all students in the classroom activity

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Meaning and goals of education Its functions, characteristics	e meaning and als of education functions, characteristics	Dialogue, discussion and brainstorming	Oral written test
2	2	Its functions, characteristics Historical basis of	storical basis of education	Dialogue, discussion and brainstorming	

		education			
3	2	Historical basis of education	storical basis of education	Dialogue, discussion and brainstorming	
4	2	Historical development through the ages, primitive education, Historical basis of education	storical basis of education	Dialogue, discussion and brainstorming	
5	2	Education in Mesopotamia and Chinese education Historical basis of education	storical basis of education	Dialogue, discussion and brainstorming	
6	2	Greek education Historical basis of education Dialogue.	storical basis of education	Dialogue, discussion and brainstorming	
7	2	Pre-Islamic Arab education Historical basis of education	storical basis of education	Dialogue, discussion and brainstorming	
8	2	Education after Islam, its goals, curricula, centers,	storical basis of education	Dialogue, discussion	

		institutions, characteristics The historical basis of education		and brainstorming	
9	2	Leaders of Arab Islamic thought (Al-Ghazali, Ibn Khaldun and Ibn Sina) The historical basis of education	storical basis of education	Dialogue, discussion and brainstorming	
10	2	The educational role of the family The social basis of education	cial basis of education	Dialogue, discussion and brainstorming	
11	2	The educational role of society The social basis of education	cial basis of education	Dialogue, discussion and brainstorming	
12	2	Equal educational opportunities The social basis of education	cial basis of education	Dialogue, discussion and brainstorming	
		Media and education The social			

13	2	basis of education Education and its impact on National	cial basis of education	Dialogue, discussion and brainstorming	
14	2	Development The Economic Basis of Education	e economic asis of education	Dialogue, discussion and brainstorming	
15	2	Education and its Impact on Human Resources Development The Economic Basis of Education	e economic asis of education	Dialogue, discussion and brainstorming	
16	2	Economic Factors in Education The Economic Basis of Education	e economic asis of education	Dialogue, discussion and brainstorming	
17	2	Education and Research Methodology The Scientific Basis of Education	entific basis of education	Dialogue, discussion and brainstorming	
18	2	Education and Scientific and Technological Progress The Scientific Basis of Education	entific basis of education	Dialogue, discussion and brainstorming	

19	2	National and Social Foundations National and Social Foundations	tional and cial foundations	Dialogue, discussion and brainstorming	
20	2	Modern Education Modern Education Features and objectives	Modern education	Dialogue, discussion and brainstorming	
21	2	Modern education Functions of contemporary education	Modern education	Dialogue, discussion and brainstorming	
22	2	Modern education Modern thought figures	Modern education	Dialogue, discussion and brainstorming	
23	2	(Pestalozzi) Modern education Rousseau and John Dewey	Modern education	Dialogue, discussion and brainstorming	
24	2	Modern education , That the individual has a specific social need.	Modern education	Dialogue, discussion and brainstorming	

25	2	Educational Administration The Concept of Educational Administration	Modern education	Dialogue, discussion and brainstorming	
26	2	Educational Administration Management Styles		Dialogue, discussion and brainstorming	
27	2	Educational Administration Duties of the School Principal and	Modern education	Dialogue, discussion and brainstorming	
28	2	Characteristics of a Successful Principal		Dialogue, discussion and brainstorming	
29	2	Educational Administration Parent-Teacher Councils (Objectives	Modern education	Dialogue, discussion and brainstorming	
30	2	and Role) Educational Administration	Modern education	Dialogue, discussion and brainstorming	

11.
Theoretical exams • Out of the box questions. Oral tests

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	methodical book
Main references (sources)	

Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course description form

1- Course name:
Educational Psychology / First Stage / Bachelor's Degree
2-Course code:
106ep
3- Semester/year:
Annual
4- Date this description was prepared:
2024/10/10
5- Available attendance forms:
The presence
6- Number of study hours (total)/number of units (total):
60hours
7- Name of the course administrator (if more than one name is mentioned)
Name: **M.M. Marwa Gamil Hassan** **M.M Noura Abdul Hamid Rashid** **Emil: Marwa. jamil@tu.edu. Iq**
1- Course objectives
- Learn about the study courses **2- Defining the scientific material and general objective** **3- Determine the behavioral objectives of the scientific material** **4- Set and adjust study times throughout the year.** **5- Distributing vocabulary objectives over a full academic year**
2- Teaching and learning strategies
1-Discussion method **2-Brainstorming method** **3-Problem solving method**

3-Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	week
The extent of student participation in class discussion	**Free discussion**	**Historical development of psychology Objectives of psychology**	**Educational psychology**	**2**	**1**
The extent of student participation in class discussion	**Brainstorming**	**Branches of Psychology Behavior, its definition and factors affecting behavior**	**Branches of psychology**	**2**	**2**
Discussions and evaluation of student research	**Problem solving**	**Branches of Psychology Behavior, its definition and factors affecting behavior**	**Motivation**	**2**	**3**
Discussions and short exam	**Discussion**	**Attention and Perception Distractions Factors Affecting Attention**	**Attention**	**2**	**4**
Student participation in discussions	**Class discussions**	**Sensory perception Types of sensations Factors affecting sensation and perception**	**Sensory perception**	**2**	**5**
Student participation in discussions	**Class discussions**	**Remembering and forgetting Types of memory Factors affecting the processes of remembering and forgetting**	**Remembering and forgetting**	**2**	**6**
Research discussion and exam	**Readings and discussions**	**Ways to improve the processes of remembering and forgetting**	**Remembering and forgetting**	**2**	**7**
Research discussion	**Readings and discussions**	**The concept of transfer of learning and its importance**	**transmission of knowledge**	**2**	**8**

Research discussion	**Brainstorming**	**Its types, conditions, and how to benefit from the transfer of learning effects in learning**	**Type of transmissio n of knowledge**	**2**	**9**
Research discussion	**Free chat**	**Feedback The importance of studying feedback Types of feedback**	**Curriculum development**	**2**	**10**
Research discussion	**Problem solving**	**Behavioral objectives Thinking Types of thinking Ways to stimulate and develop thinking**	**Developmen t methods**	**2**	**11**
Research discussion	**Brainstorming**	**Learning Theories Associative Theories (Pavlov)**	**Learning theories**	**2**	**12**
Research discussion	**Brainstorming**	**Insight Learning Theory (Kohler) Sultan Monkey Experiment Gestalt Theory Assumptions**	**Clairvoyance**	**2**	**13**
Research discussion short	**Problem solving**	**Learn the concepts Definition of the concept Nature of the concept**	**Concepts**	**2**	**14**
Research discussion	**Free discussion**	**Basic stages of learning the concept Acquisition of concepts**	**Concepts**	**2**	**15**

4- Course evaluation

Theoretical exams
Oral exams
Out of the box questions

5- Learning and teaching resources	
Educational psychology	**Required textbooks (methodology) if any**
Zayer, Saad Ali, Daoud Abdel Salam Sabry, and • Muhammad Hadi Hassan, General Teaching .Methods, Safa Publishing House, Amman, 2014	**Main References (Sources)**
Ain Shams Magazine, Sharjah Magazine, General Psychological and Educational Sciences Magazines	**Recommended supporting books and references (scientific) journals, reports, etc**
Lisan Al Arab Blog Comprehensive Library	**Electronic references, websites**

Course Description Form

1. Course Name:
Practical plant anatomy
2. Course Code:
١٠٣BPA
3. Semester / Year:
Year
4. Description Preparation Date:
١٢/١٠/٢٠٢٤
5. Available Attendance Forms:
Daily
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Hussein Aziz Samar Nashat Ali Marwa Gamil Nora Abdul Hamed Email: mohammed.h.aziz@tu.edu.iq
8. Course Objectives

Course Objectives	• **Student learns plant anatomy**….. • **Student learns plant anatomy slides**…. • **Student learns answer questions**…..
9. Teaching and Learning Strategies	
Strategy	1-Introducing students to plant anatomy 2-Living (or Protoplasmic) Contents in Plant Cell 3- Non-Living (or Non-Protoplasmic) Contents in Plant Cell 4-Pits 5-Permanent tissue 6- Tissue System

10. Course Structure

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

		Outcomes			
1	2	plant anatomy	Intrduction plant anatomy	Lecture	Exam Semester Daily Exam Evaluation of student activity Performance in Lecture Homework
2	2		Plant cell		
3	2		Cell wall		
4	2				
5	2		Living compounds In plant cell		
6	2		Non living compounds In plant cell		
7	2		Meristematic Tissue		
8	2		Permanent tiss		
9	2		Tissue System		
10	2		Stomata		
11	2		Parenchyma tissue		
12	2		Collenchyma tissue		
13	2		Sclerenchyma Tissue		
14	2		Plant apex Theories		
15	2		Epiderm hairs		
16	2		Root Anatomy		

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)	yes
Main references (sources)	Plant anatomy-Muhammad Sulaim Dar Kunuz Ashbilia for publish and Distribution Riyadh 1424. Practical Plant Anatomy Abdullah Rashid Al-Daiji and Muhammad Ab - Al-Awdat King Saud University Press, Deanship of Library Affairs,

	Riyadh (1992).
Recommended books and references (scientific journals, reports…)	journals
Electronic References, Websites	Websites

Course Description Form

1. Course name:

Biosecurity and safety

2. Course code:

3. Semester/Year:

Annual

4. Date this description was prepared:

2024/10/10

5. Available forms of attendance:

In-person education

6. Number of study hours (total) / Number of units (total):

15 hours theoretical

7. Name of the course supervisor (if more than one name is mentioned)

Name:. Baneen Ali Asker
Email: banen.ali.tuz.@tu.edu.iq

8. Course objectives

Introducing students to the concepts of safety and biosecurity, the types of biological risks to which workers in biological laboratories are exposed, and the levels of safety in biological laboratories.

Personal and public safety equipment, as well as methods and procedures for reducing risks.

9. Teaching and learning strategies

Cognitive objectives	**1-** Students understand and differentiate between the concepts of biosafety and biosecurity. **2-** Students know the levels of laboratory safety. **3-** Students learn about the types of biological waste in the laboratory. Students learn **4-** about the mechanism for disposing of biological waste in laboratories. Students learn **5-** about the methods for containing biological hazards in the laboratory.
Specific skill goals	**1- Students learn how to use personal protective equipment (laboratory gowns,** **And gloves and various protectors).** **2- Introducing students to dealing with different sharp tools.** **Glassware in the laboratory.** **3-** Students differentiate between types of biological waste. **4-** Students distinguish between different guidance and warning signs.

10. Course structure

The week	Watches	Required learning outcomes	Unit name or the topic	Learning method	Evaluation method
the first	1 hour theoretical	Definition of safety and health Professionalism and its objectives And how to achieve it	Occupational Safety and Health	According to point 9 above and as needed.	According to point 11 Below and only need
the second	1 hour theoretical	1- Distinguish between the concept of safety 1- Vitality and biosecurity. 2- Determine the level Laboratory safety	Introduction to Safety And biosecurity in The laboratory 2- Safety levels Vitality	According to point 9 above and only The need.	According to point 11 Below and only need
the third	1 hour theoretical	1- Identify the type Biological hazards 2- Determine the level of danger of the organism or agent. Pathogenic Biologist	Biological hazards	According to point 9 above and only The need.	According to point 11 Below and only need
Fourth	1 hour theoretical	Students distinguish between safety requirements and follow procedures to contain risks.	Ways to control Biological hazards	According to point 9 above and only The need.	According to point 11 Below and only need
Fifth-Sixth	1 hour theoretical	Students distinguish between types of signposts.	Signs And the warning	According to point 9 above and only The need.	According to point 11 Below and only need
Seventh	1 hour theoretical		First exam		
Eighth-Ninth	1 hour theoretical	1- Students distinguish between types biological waste 2- Students learn about the methods Trading and dealing With laboratory waste	Types of biological waste	According to point 9 above and only need	According to point 11 Below and only need
tenth	1 hour theoretical	Students learn the concept of biosecurity and the impact of factors Biology on society and environment	Biosecurity	According to point 9 above and only need	According to point 11 Below and only

					need
eleventh	1 hour theoretical	Students learn the basics of risk assessment.	Biological risk assessment	According to point 9 above and only need	According to point 11 Below and only need
twelfth	1 hour theoretical		Second exam		According to point 11 Below and only need
13th 1 hour		Learn how to manage Risks	Risk management methodology	According to point 9 above and only need	According to point 11 Below and only need
14th 1 hour	theoretical	1- Identify policies Handling information sensitive related With the security program Biology. 2- Introducing students to the mechanisms Transport of biological materials Methods of containing risks during transportation	Information security	According to point 9 above and only need	According to point 11 Below and only need
15th	1 hour theoretical	Students learn about the criteria and conditions. Allowed research	Sharia research and codes of conduct and practice	According to point 9 above and only need	According to point 11 Below and only need

11. Course Evaluation

1- Oral assessment through student participation in
2- discussions. Short tests (Quiz).
3- Monthly and semester exams.

12. Learning and teaching resources

Required textbooks (methodology if any)	
Main References (Sources)	Iraqi Ministry of Health, 2020. Shamisen, Amman, of higher education and scientific research and practices material. In corporation of Iraqi Ministry 1-The guidance of Biosafety managements, Jordan

	2- WHO, 2020, Laboratory biosafety manual Fourth edition, Geneva, Austria. Associations, Laboratory Biosafety and Biosecurity 3-The International Federation of Biosafety Risk Assessment Technical Guidance Document, SANDIA National Laboratories, USA. 4- Guidelines for the Shipping and Receiving .Biological Materials
Recommended supporting books and references (scientific journals, reports...)	
Electronic references, websites	-WHO, 2020, Laboratory biosafety manual fourth edition, Geneva, Austria. -The International Federation of Biosafety Guidance Document, SANDIA National Biosecurity Risk Assessment Technical Associations, Laboratory Biosafety and Laboratories - Guidelines for the Shipping and Receiving Biological Materials. Northern Kentucky University.

Course Description Form

1. Course Name:
Practical cell biology
2. Course Code:
102BCB
3. Semester / Year:
Annual
4. Description Preparation Date:
26 / 1 / 2025
5. Available Attendance Forms:
Scientific lectures in the laboratory
6. Number of Credit Hours (Total) / Number of Units (Total)
60 hours
7. Course administrator's name (mention all, if more than one name)
Name: Mohammed Hussein Aziz Sajad Abd allah Hussein Email: mohammed.h.aziz@tu.edu.iq
8. Course Objectives

Providing the student with information about basics and principles of cell science and scient developments in this field.	• ..... • ..... • .....

9. Teaching and Learning Strategies	
Strategy	1. The student should be familiar with the scientific biologi concepts of the plant cell. 2. The student should be familiar with the scientific biologi concepts of the animal cell. 3. The student should be familiar with how to benefit from a use laboratory equipment. 4. The student should be able to describe models and laborato media.

10. Course Structure

Week	Hours	Required	Unit or subject	Learning	Evaluation

		Learning Outcomes	name	method	method
1-2	2	Introduci the stude to the microsco its parts and how use it	Microscope and its parts	Blackboa and da show	Daily exams a homewo in additi to monthly exams.
3-4	2	Introduci the stude to shapes a sizes cells usin microsco	Cell shap and sizes	=	=
5-7			Cell membrane and modificatior	=	=
8-11			Living organelles the c (mitochondr Golgi apparatus, plastids, nucleus)	=	=
12-15			Mitosis Genetic mutation, making a glass slide to study the stages of division in th	=	=

			apex of the onion root by mashing		
16-17			meiosis	=	=
			Chromosom analysis	=	=
			Special chromosome	=	=

11. Course Evaluation

1. Daily tests with multiple-choice questions that require scientific skills
2. Participation grades for competition questions for academic topics
3. Homework grading
4. Scientific tests
5. Reports and studies

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Asst. Prof. Dr. Gabriel Barhoum Aziz
Main references (sources)	
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	

Course Description Form

1. Course name: Foundations of Education and Educational Guidance

General Chemistry \ Theoretical

Course code:

104 BGC

Chapter/Year:

annual

4. Date of preparation of this description: Beginning of the academic year

2024-2025

5. Available forms of attendance:

My presence

6. Number of study hours (total) / Number of units (total):

60 hours number of units2

7. Name of the course supervisor (if more than one name is mentioned) /

Name: Khawla Salem Mohammed

Email:Khawla.mohammed122@st.tu.edu.ig

8. Course objectives

1- Explaining the concept of chemistry

2- Explanation of mathematical problems on methods of expressing concentrations

3-**Detailed explanation of organic chemistry with sufficient examples**

For chemical equations to illustrate single and double bonds

And the trilogy

9. Teaching and learning strategies

- Direct explanation and delivery, using the board to solve mathematical problems, and discussing the mathematical problems with students through

Ask questions and encourage them to participate in solving some problems on the board after explaining and clarifying the problem to encourage them in the same way.

The solution to get it stuck in their brains

2- Students' participation in solving mathematical problems on the board while explaining the scientific material. 4- Students' discussion of some chemical terms.

00. Course structure					
The week	Watches	Required learning outcomes	Name of unit or topic	Learning method	Evaluation method
1	2	Explaining the concept of science Chemistry	Introduction to Chemistry	blackboard	**Daily exams** **With participation in Solving problems** **Arithmetic on Blackboard**
2	2	Student definition with periodic properties In the periodic table	Periodic properties of atoms	=	=
3	2	Clarification of elements in periodic table	Classification of elements in Periodic table by Electronic arrangement	=	=
4	2	Detailed explanation of Equilibrium law with Application of special issues Balance	Chemical equilibrium and the law of mass action	=	=
5	2	Solve math problems Multiple to know the function Whether acidic or basicity	Ionic equilibrium calculations Acid-base function	=	=
6	2	Hydrolysis explained With application issues Related to the topic	Hydrolysis of salts And the action of the common ion Buffer solution	=	=
7	2	Concept clarification Volumetric analysis Solve problems about Concentrations of it (normal, formalism, standard . . . . etc.)	Volumetric analysis - Methods of expressing concentration - Standard solutions	=	=
8	2	Explain interactions tie up Detailed	neutralization reactions And use it in analysis Volumetric	=	=

9	2	Explain interactions Equalization and evidence	Neutralization reactions and indicators used	=	=
10	2	Solve problems about Precipitation reactions Including correction in Volumetric analysis	Precipitation reactions – Sedimentation refinements And use it in analysis Volumetric	=	=
11	2	Analysis clarification Weight	Gravimetric analysis	=	=
12	2	Mathematical problems application Multiple on the worker Weight	Weight factor and calculations	=	=
13	2	Spectral analysis explained With application explanation Mathematical problems about the topic	Spectral analysis - Lambert's law - Calculations - Analytical applications	=	=
14	2	Explain the concept of chemistry Membership	Organic Chemistry – introduction	=	=
15	2	Concept clarification Al-Tasr Vehicles carbon	Chemical bond For carbon compounds	=	=
16	2	Explain in detail Polar compounds	Polar and nonpolar molecules Polarity of vehicles single carbon Binary and triad	=	=
17	2	Concept clarification stereochemistry	stereochemistry	=	=

00. Course Evaluation

- Out of the box questions
- Oral tests
  - Midterm and final exams
  - Daily exams and students' participation in the questions asked during the lesson

02. Learning and teaching resources	
Required textbooks (methodology if any)	
Main References (Sources)	Asst. Prof. Dr. Ilham Nghamish Muzal Hussein Analytical Chemistry for the first stage basrah mistry. College of science university of layla s. Al-omran- department of
Recommended supporting books and references (scientific journals, reports, etc.)	Summary of solving quantitative analytical chemistry problems, Prof. Dr. Munther Salim Abdul Latif
Electronic references, websites	Organic Chemistry for First Year Students Prof. Dr. Abdullah Hussein Kashash

Course Description Form

.1 Course name:	
Earth Science/First Stage/Bachelor	
.2 Course code:	
BGE109	
.3 the chapter/Year:Annual/	
Annual /	
.4 Date this description was prepared/	
10/10/2024	
.5 Available attendance forms:	
Daily attendance	
.6 Number of study hours (total) / Number of units (total):	
30hour	
.7 Name of the course administrator (if more than one name is mentioned)	
Name: Dr. Abdullah Saleh Mahdi Email: Abdullah.saleh.tuz@tu.edu.iq	
.8 Course objectives	
	Student definitionEarth science concept **Student definitionEarth science and its branches and branches related to Earth science** **Enabling students toEarth science and the importance of studying Earth science and the basic branches of Earth science and the branches related to Earth science and knowing the types of rocks** arn about the latest trends inStudy of Earth Science and its Applications

Teaching and learning strategies .9	
1- What is the definition of Earth science and what is the importance of studying Earth science? 2- What are the basic branches of earth science? 3- What are the Earth's layers? 4- What is meant by mineralogy? 5- What is meant by rocks and what are the types of rocks? 6- What is meant by earthquakes?	**Cognitive objectives**
1- Lecture on the textbook. 2- Conducting research studies by students. Asking students questions about the study topic.	**2-Skill objectives of the course.**
1- Assigning the student to write reports according to the curriculum's vocabulary. 2- Assigning students to obtain data and information related to some of the curriculum's components. Give them some external questions related to the curriculum vocabulary.	**r emotional and valuable purposes:**

Course structure .10

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	Watches	The week
Discussion and exchange of views	**Lecture style and discussion**	**ntroduction to Science the earth**	**roducing the student to th science and its importance**	1	1-2

Discussion and exchange of views	**Lecture style and discussion**	**Branches sic Earth Science**	**roducing the student to each e of basic earth science branch**	1	3-4
Discussion and exchange of views	**Lecture style and discussion**	**Branches ated to arth science**	**fining for the student each e of earth science branch related to earth science**	11	5-6
Discussion and exchange of views	**Lecture style and discussion**	**Applied branches For science the earth**	**fining the student for each e of applied geoscience branch**	1	7-8
Discussion and exchange of views	**Lecture style and discussion**	**Earth's envelopes**	**ntify each type of Earth's crust.**	1	9-10
Participation and discussion	**Lecture style and discussion**	**metallurgy**	**finition of mineralogy and ntification of the methods of formation of minerals**	1	11-12

Participate in presentation and discussion	**Lecture style and discussion**	**Petrology**	**udent definition of petrology**	1	13-14
Participation and discussion	**Lecture style and discussion**	**Rocks Fiery**	**dent definition of igneous ks, types of igneous rocks and how they are formed**	1	15-16
	semester exam the first			1	17-18
Discussion and exchange of views	**cture + discussions Safiya**	**Rocks edimentary**	**finition of sedimentary rocks l the student's knowledge of processes that lead to the mation of sedimentary rocks**	1	19-20
Discussion and exchange of views	**Lecture style and discussion**	**Rocks The trans**	**dent definition of metamorphic rocks**	1	21-22
Discussion and exchan	**Lecture style and discussion**	**arthquakes**	**roducing students to earthquakes and how they rthquake occurrenceWhat s it? benefit Earthquakes**	1	23-24

ge of views					
Discussion and exchange of views	Lecture and discussion style	roundwater	inition of student groundwater areas of groundwater presence and connection to groundwater	1	25-26
Discussion and exchange of views	ond semester exam			1	27-28
Discussion and exchange of views	Lecture style and discussion	leontology	dent Definition of Paleontology	1	29-30

Course Evaluation .11	
Written semester exam, oral exam, and research preparation.	
C- Emotional and valuable goals: A1- Assigning the student to write reports according to the curriculum's vocabulary. A2- Assigning students to obtain data and information related to some of the curriculum's components. A3- Giving them some external questions related to the curriculum vocabulary.	
	Required textbooks (methodology if any)
Earth Science / Dr. Yasser Shaaban	Main References (Sources)
	Recommended supporting books and references (scientific journals, reports, etc.)
	Electronic references, websites