University Name: Tikrit University

Faculty/Institute: Basic education in sharqat

Scientific Department: Department of Science

Academic or Professional Program Name: Bachelor's degree in Science

Final Certificate Name: Bachelor's degree in basic education

Academic System: Courses

Description Preparation Date: 2025/9/1

File Completion Date: 2025/9/18

Signature:

Head of Department Name:

Dr. Ali Alii Khader

Date: 18/9/2025

Signatur

Scientific Associate Name:

Dr. Saad gerges saaed

Date: 2025/9/18

الاستاذ الدكتور
سعد جرجيس سعيد
معاون العميد للشؤون العلمية
/ / ٢٠٢

The file is checked by: Dr. Ahmed Abdulsalam Hasan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature: .Dr Hamid Mohammed Saleh

Date: 18/9/2025

مكتب العميد

Approval of the Dean

2026 - 2025

University Name: Tikrit University

Faculty/Institute: Basic education in sharqat

Scientific Department: Department of Science

Academic or Professional Program Name: Bachelor's degree in Science

Final Certificate Name: Bachelor's degree in basic education

Academic System: Courses

Description Preparation Date: 2026/1/15

File Completion Date: 2026/6/1

Signature:

Head of Department Name:

Dr. Ali Alij Khader

Date: 2026/6/1

Signature:

Scientific Associate Name:

Dr. Saad gerges saaed

Date: 2026/6/1

الاستاذ الدكتور
سعد جرجيس سعيد
معاون العميد للشؤون العلمية
/ / ٢٠٢

The file is checked by: Dr. Ahmed Abdulsalam Hasan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 2026/6/1

Signature: .Dr Hussein Abd Ismail

Date: 2/1/1

جامعة تكريت - كلية التربية الاساسية / الشرقاط
مكتب العميد

Approval of the Dean

1.Program vision

The Science Department is one of the applied science departments. Those who teach science must be equipped with pure sciences according to specific principles and rules, while keeping pace with the development of science. The department seeks to advance knowledge in the field of science to qualify them to .serve society and encourage them to develop their abilities and capabilities

2.Program message

Preparing qualified university teachers in the field of specialization and providing them with the principles of knowledge, scientific and logical thinking, scientific research skills in the sciences, and the skills necessary for future communication with society in the field of work, in addition to providing the student with a set of sciences and knowledge that complete the teacher's culture in general, including cultural requirements, educational requirements, sciences, .and others

3.Program objectives

1- Providing the Ministry of Education with specialized staff to work as university teachers.
2- Enabling students to master the principles of pure sciences.
3- Strengthening scientific concepts, and some basic terms and concepts related to it
4- Understanding the theoretical foundations on which sciences are based.
5- Providing graduates with skills and methods in teaching and learning.
6- Providing the Ministry of Education with specialized staff to work as university teachers.
7- Enabling students to master the principles of pure sciences.
8- Strengthening scientific concepts, and some basic terms and concepts related to it.
9- Understanding the theoretical foundations on which sciences are based.
10.Providing graduates with skills and methods in teaching and learning -10

4. Program Accreditation

Ministry of Higher Education and Scientific Research/National Accreditation Council caep

5. Other External Influences

Science Curriculum Development Project in Iraqi Universities/Ministry of Higher Education and Scientific Research Implementation in schools for two months, field visits to school.

6. Program Structure				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	***Reviews**
Institutional Requirements	**13**	**26**	**19%**	fundamental
College Requirements	**12**	**10**	**29%**	fundamental
Department Requirements	**25**	**70**	**52%**	fundamental
Summer Training				
Other				

.Notes may include whether the course is basic or optional *

7. Program Description				
Credit Hours		**Course Name**	**Course Code**	**Year/Level**
Practical	**Theoretical**			
	1	Democracy and Human Rights		First/First Semester
2	3	General Biology		
2	1	Computer Science		
	3	Developmental Psychology		
2	3	General Chemistry		
	2	Logic (Mathematics)		
	2	Arabic Language		
2	3	General Physics		First/Second Semester
	2	Arabic Language		
	2	English Language		

	3	Principles of Education		
	2	Islamic Education/Civilization		
2	2	Human Biology		
	2	Laboratory Safety and Security		
	2	Arabic Language		Second Chemistry Branch / First Semester
	2	English Language		
2	1	Computer		
	2	Curricula and Textbooks		
2	2	Inorganic Chemistry		
2	2	Volumetric Analytical Chemistry		
2	2	Physical Chemistry		
	2	Crimes of the Baath Regime		
	2	Arabic		Second Biology Branch/First Semester
	2	English		
2	1	Computer		
	2	Curricula and Textbooks		
	2	Crimes of the Baath Regime		
2	3	Microbiology		
2	2	Cytology		
	2	Virology		
2	2	Psychology of classroom learning		Second Chemistry Branch/
	3	Educational Psychology		

2	2	Gravimetric Analytical Chemistry		Second Semester
2	2	Organic Chemistry		
2	2	Representative Element Chemistry		
	2	Differential and Integral Calculus		
2	2	Psychology of classroom learning		Second Biology Branch/ Second Semester
	3	Educational Psychology		
2	2	Invertebrates		
2	2	Histology and Embryology		
	2	Biochemistry		
2	2	Plant Physiology		
	3	General Teaching Methods		Third Chemistry Branch/First Semester
	3	Educational Research Methodology		
2	2	Coordination Chemistry		
2	2	Organic Chemistry		
2	2	Industrial Chemistry		
	3	General Teaching Methods		Third Biology Branch/First Semester
	3	Educational Research Methodology		
2	2	Animal Physiology		
2	2	Parasitology		
2	3	Plant and Animal Production		

	2	Measurement and Evaluation		
	2	Science Teaching Methods		
	2	Curricula and Textbooks		Third Chemistry Branch/Second Semester
	2	Sustainable Development		
	2	Environmental and Health Education		
2	2	Soil Chemistry		
2	2	Oil and Petrochemicals		
2	2	Biochemistry		
	2	Measurement and Evaluation		
	2	Science Teaching Methods		
	2	Curricula and Textbooks		Third Biology Branch/Second Semester
	2	Sustainable Development		
	2	Environmental and Health Education		
	2	Plant classification		
2	2	Immunology		
2	2	Entomology		
	2	Professional Ethics		
	2	Arabic Literature		
	2	Educational Administration and Supervision		Fourth Chemistry Branch/First Semester
4		Practical Education (Observation)		
2	2	Organic Diagnosis		

2	2	Analysis		
	2	Clinical Chemistry		
	2	Chemistry of Natural Products		
	2	Professional Ethics		
	2	Arabic Literature		
	2	Educational Administration and Supervision		
4		Practical Education (Observation)		
2	2	Algae and Fungi		
2	2	Genetics		
	2	Serums and Vaccines		
	2	Endocrine Physiology		
12		Practical Education (Application)		
	2	Graduation Research Project		
12		Practical Education (Application)		
	2	Graduation Research Project		

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcome Statement 1
Skills	
Learning Outcomes 2	Learning Outcome Statement 2
Learning Outcomes 3	Learning Outcome Statement 3
Values	
Learning Outcomes 4	Learning Outcome Statement 4
Learning Outcomes 5	Learning Outcome Statement 5
9. Teaching and learning strategies	

There are many teaching and learning methods used in the Science Department, the most important of which are: (lecture - theoretical and practical, discussion and dialogue, field visits, discussion groups on specific topics, theoretical and practical student research, office activities)

10. Evaluation methods

- Daily and monthly oral and written exams
-Daily assignments and extracurricular activitie

11. Faculty

Faculty members

Academic Rank	Specialization		Requirements/Skills (if any)	Number of Faculty Members	
	general	precise		Cadre	Lecturer
Professor	Educational and Psychological Sciences	Psychological Counseling and Educational Guidance		1	
Professor	Agricultural Sciences	Agricultural Extension		1	
Professor	History	Modern History		1	
Professor	Organic Chemistry	Organic Chemistry		1	
Professor	Agricultural Sciences	Food Science		1	
Assistant Professor	Geology			1	
Assistant Professor	Chemistry	Industrial Chemistry		1	
Lecturer	physics	solid physics		1	
Lecturer	Chemistry	Analytical Chemistry		2	

Lecturer	Chemistry	Physical Chemistry		1	
Lecturer	Chemistry	Organic Chemistry		1	
Lecturer	Management and Economics	Accounting		1	
Lecturer	Biology	Insects		1	
assist. Lecturer	Chemistry	Biochemistry		1	
assist. Lecturer	Agricultural Sciences	Agricultural Extension		2	
assist. Lecturer	Biology			2	
assist. Lecturer	physics			1	
assist. Lecturer	Biology	Plant/Environment and Pollution		2	
assist. Lecturer	Biology	Microbiology		1	
assist. Lecturer	Biology	Histology		2	
assist. Lecturer	Educational Sciences	Teaching Methods		1	
assist. Lecturer	Chemistry	Organic Chemistry		1	
assist. Lecturer	English language			1	
assist. Lecturer	Arabic	Linguistics		1	

assist. Lecturer	Chemistry	Analytical Chemistry		1	

Professional Development
Orientation of New Faculty
Mandatory and developmental courses, teaching qualifications, follow-up by experienced professors and evaluation
Professional development for faculty members
Encouraging them to obtain higher degrees, write research, use modern .scientific references, and keep pace with technical development
12. Acceptance Criteria
Central
13. The most important sources of information about the program
_ The program link on the Internet, and its applications in similar universities. - _ The training courses held by the quality and university performance departments about the program in various institutes and colleges in Iraq -Administrative and scientific data
14. Program Development Plan
Developing skills for teaching scientific and educational courses and developing study materials and curricula

Course Description Form

1. Course Name:
Chemistry Volumetric analysis
2. Course Code:
Chemistry Volumetric analysis
3. Semester / Year:
Chapter one 2025 -2026
4. Description Preparation Date:
2025-9-2
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Sara Abdullah Kamil Email: sara.ab.kamil@tu.edu.iq
8. Course Objectives

Course Objectives	• Introducing the importance of Chemistry Volumetric analysis and the relationship of this science to other sciences. • Developing students' skills in analytical Chemistry sciences. • Learn about voluntary corroction • Study the methods of expressing restrictions
9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 3 September	2	Introduction to analytical Chemistry	Volume analysis	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 September	2	Neutralization Titrations	Titrations Volume	Paper lecture Display	Daily and monthly exams,

				Screen Blackboard and pen	homework
Week 1 October	3	Oxidation and reduction reaction	Concepts relating to interactions, oxidation and reduction and calculation of the number	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 October	4	Methods of expressing conquests	Calculate the rest solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 October	2	Methods of expressing conquests	Calculate the rest solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 October	2	Chemical accounts	Standard solutions and methods of preparation of solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 November	2	First-month exam			
Week 2 November	2	Calculate the pH for the acids and bases	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 November	2	Calculate the pH of the salts	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 November	2	Calculate the pH for common	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 December	2	Calculate the pH for organized solutions	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 December	2	Titrations precipitation	Concepts relating to sedimentation	Paper lecture Display	Daily and monthly exams,

			interactions-dissolve-applications	Screen Blackboard and pen	homework
Week 3 December	2	Second month exam			

11. Course Evaluation
Students are evaluated during the semester according to the following principles: • First-month exam from 10 / Second-month exam from 10 / Daily exam, attendance and participation from 10 • (Practical pursuit 10 + Theoretical pursuit of 30) Pursuit of 40 • Final exam of 60 • Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Theoretical basics of quantitative gravimetric and volumetric analysis of inorganic analytical chemistry, Prof. Dr. Hadi Kazem Awad
Primary references (sources)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986
Recommended supporting books and references (scientific journals, reports...)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986

Course Description Form

1. **Course Name:**
Chemistry gravimetric analysis
2. **Course Code:**
Chemistry gravimetric analysis
Semester / Year:
3. **Chapter two**
4. **Description Preparation Date:**
2025-9-1
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Sara Abdullah Kamel **Email: sara.ab.kamil@tu.edu.iq**
8. Course Objectives

Course Objectives	• Introducing the importance of Chemistry gravimetric analysis and the relationship of this science to other sciences. • Developing students' skills in analytical Chemistry sciences. • Learn about the types of qualitative and quantitative • • Identify sediments, sediment characteristics, and separation methods .....
9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
January 4	2	Introducing the student to analytical chemistry	Types of analytical chemistry and its branches	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

February 1	2	Explanation of laboratory tools and equipment and how to use them	Laboratory glassware and tools	Paper lectures Display screen with laboratory tools display Blackboard and pen	Daily and monthly exams, homework
February 2	2	Filtration and sedimentation reactions	An experiment on how to prepare sparingly soluble salt, methods of drying it and weighing it	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
February 3	2	Correction or calibration methods	Introduction to the titration method, its working conditions and specifications of the standard solution	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
February 2	2	Practical experience of applying calibration and how to find its practical and theoretical calculations	Calculating concentrations of unknown solutions	Manual laboratory methods - dialogue and discussion - blackboard and pen - display screen	Daily and monthly exams, homework
March 1	2	Introduction to chromatography methods and types	Chromatography methods	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
March 2	2	First-month exam			
March 3	2	Introduction to Thin Layer Chromatography and How to Use It	Paper and thin layer chromatography	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

March 4	2	Practical experiment for separation of commercial inks by paper and thin layer chromatography	Paper and thin layer chromatography	Manual laboratory methods - dialogue and discussion - blackboard and pen - display screen	Daily and monthly exams, homework
April 1	2	Introduction to chemical separation methods and types and the objectives of the separation process	Chemical separation methods	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
April 2	2	Explanation of the solvent extraction method	Chemical separation methods	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

April 3	2	Practical experiment on how to estimate the percentage of iodine extraction by an organic solvent	Chemical separation methods	Manual laboratory methods - Dialogue and discussion - Blackboard and pen - Display screen Blackboard and pen	Daily and monthly exams, homework
April 4	0	Second month exam			

11. Course Evaluation
Students are evaluated during the semester according to the following principles: - First-month exam from 10 / Second-month exam from 10 / Daily exam, attendance and participation from 10 - (Theoretical pursuit of 30 + Practical pursuit of 10) Pursuit of 40 - Final exam of 60 - Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Theoretical basics of quantitative gravimetric and volumetric analysis of inorganic analytical chemistry, Prof. Dr. Hadi Kazem Awad
Primary references (sources)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986
Recommended supporting books and references (scientific journals, reports...)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986

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

2026 - 2025

Course Description Form

1. Course Name:
biochemistry
2. Course Code:
The third stage is chemistry
3. Semester / Year:
Chapter II
4. Description Preparation Date:
2026/01/11
5. Available Attendance Forms:
In-person class lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
/**24** hours
7. Course administrator's name (mention all, if more than one name)
Name: Ziad Tariq Taha , Arkan Tawfiq Muhammad Email: ziad.taha21@tu.edu.iq , arkan.tawfh.m@tu.edu.iq
8. Course Objectives

Course Objectives	1-For the student to learn about the nature of biochemistry and the important biomolecules in the body, and to study their details. 2-Studying important life molecules in the bodies of living organisms such as humans, such as carbohydrates, fats, proteins, and amino acids. 3-Study the details of the compounds mentioned and distinguish between them. 4-Knowing how to write the structural formulas of these compounds and their important interactions. 5-The student's knowledge of the functions of these compounds and their importance to the health of the human body.

9. Teaching and Learning Strategies	
Strategy	- Using the lecture method and using the interactive whiteboard through explanation and clarification. - Providing students with the basics and additional topics related to the outcomes of biochemical thinking and analysis. - Asking students to write objective reports about some life molecules with the aim of learning and knowing the research method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, first week	2	**Introducing the student to biochemistry .Its importance in our lives**	**Introduction to biochemistry**	**Lecture and discussion**	**Class performance**
February, second week	2	**Introducing the studen molecules and life, models of living cells, properties and functions of cell parts. With hydrocarbons and their types**	**Biomolecules an living cells**	**Lecture and discussion**	**Class performance**
February, third week	2	**Familiarize the student with the characteristics Water, solutions, and dissolution of compounds Polarity and ion concentration calculations Hydrogen and measurement curve Al-Calibration**	**Water and solutions**	**Lecture and discussion**	**Class performance**

February, fourth week	2	**Introducing the student to carbohydrates Its importance, composition, classification, types .and characteristics**	**Carbohydrates**	**Lecture and discussion**	**Class performance**
April, first week	2	**Introducing the student to monosaccharides Its types, cyclic structure, and effectiveness Visual**	**Monosaccharides**	**Lecture and discussion**	**Class performance**
April, second week	2	**Introducing the student to interactions Monocarbohydrates are the most important Monosaccharides and their derivatives**	**Monocarbohydrate reactions and their most important types**	**Lecture and discussion**	**Class performance**
April, third week	2	**Student definition of limited sugars oligosaccharides units (Disaccharides, sugars Many units .polysaccharides**	**Complex sugars**	**Lecture and discussion**	**Class performance**
April, fourth week	2	**the first exam**	**First month exam**	**Lecture and discussion**	**Class performance**
The first week of May	2	**Fats, their properties and importance, Its composition, classification, types and functions**	**Fats**	**Lecture and discussion**	**Class performance**

May, second week	2	**Simple fats , Triglycerides Oils, fatty acids, Phospholipids**	**Types of fats**	**Lecture and discussion**	**Class performance**
May, third week	2	**Proteins, their structure and classification Plasma proteins, changing characteristics General proteins**	**Proteins**	**Lecture and discussion**	**Class performance**
May, fourth week	2	**Second exam**	**Second month exam**	**Lecture and discussion**	**Class performance**

11.Course evaluation	
First month exam from 15 / Second month exam from 15 / Add and divide by 2. Oral exam, daily preparation, attendance and participation of 10 + 15 marks, practical part. We extract from it a pursuit score of 40 The final written exam is 60 The final grade is 100	
12.Learning and teaching resources	
Introduction to biochemistry / Dr. Khawla Ahmed Biochemistry./ Dr. Sami Al-Mudhafer Al-Wajeez in Biochemistry./ Dr. Qusay Al-Chalabi	(Required textbooks (methodology, if any)
1- Harpers Revew of Biochemistry, 2- Principle of Bio Chemistry, Smith &White 3- Biochemistry by Armstrong	(Main references (sources)
Biochemistry book, part one / Dr. Tariq Younis	Recommended supporting books and (...references (scientific journals, reports
www.bytoco.com	Electronic references, Internet sites

Course Description Form

1. Course Name: Animal Physiology (theoretical)
2. Course Code: The Third stage is Biology
3. Semester / Year: Chapter I/2025-2026
4. Description Preparation Date: 1/9/2025
5. Available Attendance Forms: class lectures
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: Huda Shareef Diab Email: huda.sh.diab@tu.edu.iq

8. Course Objectives

Course Objectives	1-To enable students to understand the complex functional mechanisms of various animal body system. 2-To study the integration between anatomical structure and physiological function. 3-To explain the mechanisms of homeostatic regulation under different environmental conditions.

9. Teaching and Learning Strategies

Strategy	**Interactive Lectures**: Direct explanation using whiteboards and colored markers for physiological diagrams. **Visual Learning:** Utilizing Smart Boards (Data Show) to present 3D videos and animated physiological models. **Brainstorming**: Presenting physiological scenarios to stimulate students' analytical thinking.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Sebtember, One week	2	Understanding the definition of physiology and how tissues adapt to temperatures	Introduction to Physiology and Effect/Impact	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
Sebtember ,Two week	2	Describing the structure of the neuron and explaining the mechanism of ion exchange (action .potential)	Physiology of the Nervous System: Its Structure and Generation of the Nerve	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
October,three week	2	Functional differentiation between the brain, spinal cord, and peripheral nerves	The Central and Peripheral Nervous System	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
October ,four week	2	Explaining the sliding filament theory and the role of calcium and ATP in contraction.	Physiology of the Muscular System: Muscle Structure and the Mechanism of Their Contraction and Relaxation	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
October ,Five week	2	Understanding the partial pressures of gases and how oxygen transfers from the lungs to the blood and the transfer of CO2 from tissues to the blood then to the lungs.	Physiology of the Respiratory System: The Structure of the System and the Mechanism of Inhalation and Exhalation and the Factors Affecting It	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method

Octobe r ,Six week	2	**Analyzing the cardiac cycle (systole and diastole) and the function of heart valves.**	**Physiology of the Circulatory System: The Structure of the Heart**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Novem ber, seven week	2	**the first exam**			
Novem ber, Eight week	2	**nowing the proportions of blood components from cells and plasma, knowing the components of plasma, and the role of lymphatic fluid in balance.** **Explaining the functions of blood cells (RBC, WBC) and the blood clotting process**	**Blood Components and the Lymphatic System.** **Physiology of Blood**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Novem ber, Nine week	**2**	Describing mechanical and chemical digestion and the role of salivary and gastric enzymes	**hysiology of the Digestive System: Structure of the Mouth, Esophagus, and Stomach**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Novem ber, Ten week	**2**	Understanding the role of bile and pancreatic juice in the emulsification of fats.	**The Small and Large Intestine**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**

December, Eleven week	**2**	Explaining how amino acids and sugars are transported across the villi.	**he Mechanism of Digestion and Absorption in the Digestive System**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Decembe, Twelve week	**2**	Understanding the stages of urine formation (filtration, reabsorption, secretion).	**Physiology of the Urinary System: Structure of the Kidney and Nephron**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Decembe, Thirteen week	**2**	ntroduction and mechanism of action, classification of hormones according to chemical structure and understanding the function of receptors, studying the effect of pituitary and thyroid hormones on vital processes.	**Hormones and Functional Classification**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Decembe, Fourteen week	**2**	nderstanding the Role of Sex Hormones in Regulating Reproductive Functions	**Reproduction Hormones**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
Decembe,Fifteen week	**2**	**Second exam**			

11. Course evaluation

First monthly exam out of 20/Second monthly exam out of 20/summed and divided by 2.

Daily quizzes,attendance , and Participation out of 10.

Theoretical courswork out of 30+ Practical coursework out of 10.

The final coursework grad is obtained out of 40.

Final written theoretical exam (50) +final practical exam (10).

The final grade is out of 100.

12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	Physiology by Dr. Sabah Nasir Al-Allooji/2014 Principles of Animal Physiology by Dr. Khalid Ahmed Al-Hay
Main references(sources)	Textbook of Medical Physiology - (Guyton and Hall)
Recommended books and references (scientific journais, reports…)	journal of Basic and Applied Zoology,JOBA Journal of Animal Physiology and Animal Nutrition
Electronic references, websites	-Specialized topic websites from Google search - Pubmed موقع https://pubmed.ncbi.nlm.nih.gov

Course Description Form

1. Course Name: animal physiology Practical
2. Course Code: The Third stage is Biology
3. Semester / Year: Chapter 2/2025-2026
4. Description Preparation Date: **1/9/2025**
5. Available Attendance Forms: class lectures
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: Hhda Shareef Diab Email: huda.sh.diab@tu.edu.iq Name: Ragda Mahmood Hamad Email: raghada.hamad21@tu.edu.iq

8. Course Objectives

Course Objectives	quip students with fundamental practical skills in laboratory animal dissection and physiological specimen preparation 2. Train students to conduct physiological experiments and measure vital indicators using laboratory equipment 3. Develop students' ability to analyze physiological data, interpret results scientifically, and relate them to theoretical concepts 4. Enhance teamwork skills and students' commitment to laboratory safety rules and scientific ethics

9. Teaching and Learning Strategies

Strategy	Learning by Practice: Direct application of laboratory skills under instructor supervision • Collaborative Learning: Working in small groups to complete experiments and share experiences • Individual Guidance: Monitoring each student's performance and providing immediate feedback

	• Discovery Learning: Encouraging students to observe and draw conclusions from experimental results • Scientific Report Writing: Documenting experiments and results in a systematic scientific manner

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
september, 1 week	2	**Adhere to laboratory safety rules Master external frog identification techniques Perform accurate dissection**	**General Laboratory Guidelines Frog Identification / Frog Dissection**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
september, 2 week	2	**Accurately locate sciatic nerve Master gastrocnemius muscle isolation techniques Maintain tissue integrity**	**Preparation of Sciatic Nerve and Gastrocnemius Muscle**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October, 3 week	2	**Study temperature effect on contraction • Understand summation and tetanus • Analyze results and relate to theory**	**Effect of Heat on Muscle Contraction / Summation and Tetanus Phenomena**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October, 4 week	2	**Determine stimulus-response relationship • Plot response curve • Interpret data scientifically**	**Relationship Between Stimulus Strength and Response Magnitude**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

October,5 week	2	**• Accurately measure nerve conduction speed • Understand nerve transmission mechanism • Perform necessary calculations**	**Measurement of Nerve Conduction Velocity**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October,6 week	2	**Safely master toad dissection • Properly isolate the heart • Prepare heart for experiments**	**Toad Dissection and Heart Preparation**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
November,7 week	2	**The first Exam**			
November, 8 week	**2**	**Study effects of different ions • Understand drug effects on heart • Compare different effect**	**Effect of Ions and Drugs on Simple Contraction**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
November, 9 week	**2**	Master hemocytometer use • Accurately count blood cells • Calculate total concentration	**Counting Red and White Blood Cells**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
November, 10 week	**2**	Use hemoglobin meter • Accurately estimate hemoglobin percentage • Interpret results clinically	**Hemoglobin (HB) Estimation**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**

December,11 week	**2**	Measure erythrocyte sedimentation rate • Determine ABO blood groups • Apply compatibility tests	**ESR Estimation - Blood Group Determination**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December,12 week	**2**	Perform electrocardiography • Measure heart rate • Read and interpret ECG	**ECG and Heart Rate Measuremen**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December,13 week	**2**	Understand osmotic properties • Study cellular shrinkage and swelling • Apply concepts to living models	**Study of Osmotic Conditions (Using Hen Eggs and Blood Cells - Crenation and Swelling)**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December,14 week	**2**	Master blood pressure measurement • Use different devices • Interpret normal and abnormal readings	**Blood Pressure and Measurement Methods Using Different Devices (Mercury, Electronic)**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December,15 week	**2**	**The Second exam**			

11. Course evaluation

Students are assessed during the semester according to the following criteria:

First monthly exam out of 10 / Second monthly exam out of 10 / Daily quizzes

and participation out of 10. These grades are summed and divided by 3 to obtain the coursework grade of 10.

Final exam out of 10.

12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	Handbook of Animal Physiology Practical Authors: Various contributors
Main references(sources)	**1-Laboratory Manual for Animal Physiology** **2. Comparative Animal Physiology - Knut Schmidt-Nielsen**
Recommended books and references (scientific journais, reports…)	journal of Experimental Biology Impact Factor: 3.24 https://journals.biologists.com/jeb American Journal of Physiology Impact Factor: 3.52 | Publisher: A merican Physiological Society
Electronic references, websites	Physiological Society https://www.physoc.org

Physiology Web https://www.physiologyweb.com موسوعة تعليمية في الفسلجة	

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

2026 - 2025

Introduction:

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

The academic program description is a short summary of the main features of the program and its courses. It shows what skills students are working to develop based on the program's goals. This description is very important because it is the main part of getting the program accredited, and it is written by the teaching staP 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, quaJerly), 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.

1. Program Vision
Program vision is written here as stated in the university's catalogue and website.
2. Program Mission
Program mission is written here as stated in the university's catalogue and website.
3. Program Objectives
General statements describing what the program or institution intends to achieve.
4. Program Accreditation
Does the program have program accreditation? And from which agency?
5. Other external influences
Is there a sponsor for the program?

6 Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews•
Institution Requirements				
College Requirements				

Department Requirements				
Summer Training				
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical

8. Expected learning outcomes of the program

Knowledge

Learning Outcomes 1	Learning Outcomes Statement 1

Skills

Learning Outcomes 2	Learning Outcomes Statement 2
Learning Outcomes 3	Learning Outcomes Statement 3

Ethics

Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes S	Learning Outcomes Statement 5

9. Teaching and Learning Strategies

Teaching and learning strategies and methods adopted in the implementation of the program in general.

10. Evaluation methods

Implemented at all stages of the program in general.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	**Lecturer**

Professional Development

Mentoring new faculty members

Briefly describes the process used to mentor new, visiting, full—time, and part—time faculty at the institution and department level.

Professional development of faculty members

Briefly describe the academic and professional development plan and arrangements for faculty such as teaching and learning strategies, assessment of learning outcomes, professional development, etc.

12. Acceptance Criterion

(Setting regulations related to enrollment in the college or institute, whether central admission or others)

13. The most important sources of information about the program

State briefly the sources of information about the program.

14. Program Development Plan

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

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

Course Description Form

1. Course Name:
Clinical Biochemistry
2. Course Code:
Fourth stage Chemistry
3. Semester / Year:
Chapter I
4. Description Preparation Date:
01/09/2025
5. Available Attendance Forms:
In-person class lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
/**24** hours
7. Course administrator's name (mention all, if more than one name)
Name: Ziad Tariq Taha , Arkan Tawfiq Mohammad Email: ziad.taha21@tu.edu.iq , arkan.tawfh.m@tu.edu.iq
8. Course Objectives

Course Objectives	1- For the student to become familiar with the nature of clinical biochemistry and the important biological fluids in the body, their nature, and to study their details. 2- Study of important biological molecules in the bodies of living organisms such as humans, such as carbohydrates, fats, proteins, and amino acids, and their clinical importance. 3-Study the details of the compounds mentioned and distinguish between them. 4- Knowing the normal levels of these fluids in the pathological state. 5- To familiarize the student with the functions and clinical importance of various fluids and their importance to human health.

9. Teaching and Learning Strategies	
Strategy	- Using the lecture method and using the interactive whiteboard through explanation and clarification. - Providing students with the basics and additional topics related to the outcomes of biochemical thinking and analysis. - Asking students to write objective reports about some life molecules with the aim of learning and knowing the research method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
September, fourth week	2	**Introducing the student to clinical chemistry and its importance in our lives**	**Introducing the student to clinical chemistry**	**Lecture and discussion**	**Class performance**
October, first week	2	**Introducing the studen the most important body fluids**	**Introducing the student to the most important body fluids**	**Lecture and discussion**	**Class performance**
October, third week	2	**Introducing the student to the clinical importance of urethra**	**clinical importance of urethra**	**Lecture and discussion**	**Class performance**
October, fourth week	2	**Introducing the student to urinary .tract stones**	**urinary tract stones**	**Lecture and discussion**	**Class performance**
November, first week	2	**Introducing the student to gallstones, salivary gland stones, and prostate stones**	**gallstones, salivary gland stones, and prostate stones**	**Lecture and discussion**	**Class performance**

November, second week	2	**Introducing the student to carbohydrates and their clinical importance**	**carbohydrates and their clinical importance**	**Lecture and discussion**	**Class performance**
November, third week	2	**Introducing the student to blood (its components, clotting factors), blood functions, and plasma**	**blood (its components, clotting factors), blood functions, and plasma**	**Lecture and discussion**	**Class performance**
November, fourth week	2	**the first exam**	**First month exam**	**Lecture and discussion**	**Class performance**
The first week of December	2	**Types of anticoagulants (their chemical composition and functions)**	**Types of anticoagulants**	**Lecture and discussion**	**Class performance**
December, second week	2	**Blood ions (sodium, potassium, phosphate, calcium, iron) and their clinical importance and normal and pathological levels.**	**Blood ions**	**Lecture and discussion**	**Class performance**
December, third week	2	**Methods of collecting blood samples**	**Methods of collecting blood samples**	**Lecture and discussion**	**Class performance**
December, fourth week	2	**Second exam**	**Second month exam**	**Lecture and discussion**	**Class performance**

11.Course evaluation	
First month exam from 15 / Second month exam from 15 / Collection only. Oral exam, daily preparation, attendance and participation of 10. We extract from it a pursuit score of 40 The final written exam is 60 The final grade is 100	
12.Learning and teaching resources	
Introduction to biochemistry / Dr. Khawla Ahmed Biochemistry./ Dr. Sami Al-Mudhafer Al-Wajeez in Biochemistry./ Dr. Qusay Al-Chalabi	(Required textbooks (methodology, if any)
1- Harpers Revew of Biochemistry, 2- Principle of Bio Chemistry, Smith &White 3- Biochemistry by Armstrong	(Main references (sources)
Biochemistry book, part one / Dr. Tariq Younis	Recommended supporting books and (...references (scientific journals, reports
www.bytoco.com	Electronic references, Internet sites

Course Description Form

1. Course Name: Practical biochemistry
2. Course Code: The second stage is biology
3. Semester / Year: Chapter II
4. Description Preparation Date: **11/1/2026**
5. Available Attendance Forms: class lectures
6. Number of Credit Hours (Total) / Number of Units (Total) **26**/ hours
7. Course administrator's name (mention all, if more than one name)
Name: Heba saad asal Sara Abdullah Kamil ， Suzan Gumaah Harim Email: heba.s.asal@tu.edu.iq Sara.ab.kami@tu.edu.iq Suzan.jumah.h@tu.edu.iq
8. Course Objectives

Course Objectives	1-For the student to learn about the nature of biochemistry and the important biomolecules in the body, and to study their details. 2-Studying important life molecules in the bodies of living organisms such as humans, such as carbohydrates, fats, proteins, and amino acids. 3-Study the details of the compounds mentioned and distinguish between them. 4-Knowing how to write the structural formulas of these compounds and their important interactions. 5-The student's knowledge of the functions of these compounds and their importance to the health of the human body.

9. Teaching and Learning Strategies	
Strategy	- Using the lecture method and using the interactive whiteboard through explanation and clarification. - Providing students with the basics and additional topics related to the outcomes of biochemical thinking and analysis. - Asking students to write objective reports about some life molecules with the aim of learning and knowing the research method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, first week	2	**Introducing the student to biochemistry .Its importance in our lives**	**Introduction to biochemistry**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
February, second week	2	**Introducing the studen molecules and life, models of living cells, properties and functions of cell parts. With hydrocarbons and their types**	**Biomolecules an living cells**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
februa ry, week3	2	**Familiarize the student with the characteristics Water, solutions, and dissolution of compounds Polarity and ion concentration calculations Hydrogen and**	**Water and solutions**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

		measurement curve Al-Calibration			
februa ry, week 4	2	**Introducing the student to carbohydrates Its importance, composition, classification, types .and characteristics**	**Carbohydrates**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week1	2	**Introducing the student to monosaccharides Its types, cyclic structure, and effectiveness Visual**	**Monosaccharide s**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week2	2	**Introducing the student to interactions Monocarbohydrates are the most important Monosaccharides and their derivatives**	**Monocarbohydr ate reactions and their most important types**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week 3	2	**Student definition of limited sugars oligosaccharides units (Disaccharides, sugars Many units .polysaccharides**	**Complex sugars**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

march, week 4	2	**the first exam**	**First month exam**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April, week 1	2	**Fats, their properties and importance, Its composition, classification, types and functions**	**Fats**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April, week2	2	**Simple fats , Triglycerides Oils, fatty acids, Phospholipids**	**Types of fats**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April, week3	2	**Proteins, their structure and classification Plasma proteins, changing characteristics General proteins**	**Proteins**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April week4	2	**Second exam**	**Second month exam**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

11.Course evaluation	
First month exam from 10 / Second month exam from 10 / Add and divide by 2. Oral exam, daily preparation, attendance and participation in the practical part and conduct experiments of 5 + 25 marks, practical part. We extract from it a pursuit score of 40 The final written exam is 60 The final grade is 100	
12.Learning and teaching resources	
Introduction to biochemistry / Dr. Khawla Ahmed Biochemistry./ Dr. Sami Al-Mudhafer Al-Wajeez in Biochemistry./ Dr. Qusay Al-Chalabi	(Required textbooks (methodology, if any)
1- Harpers Revew of Biochemistry, 2- Principle of Bio Chemistry, Smith &White 3- Biochemistry by Armstrong	(Main references (sources)
Biochemistry book, part one / Dr. Tariq Younis	Recommended supporting books and (...references (scientific journals, reports
www.bytoco.com	Electronic references, Internet sites

Course Description Form

1. Course Name: Practical biochemistry
2. Course Code: The second stage is biology
3. Semester / Year: Chapter II
4. Description Preparation Date: **11/1/2026**
5. Available Attendance Forms: class lectures
6. Number of Credit Hours (Total) / Number of Units (Total) **26**/ hours
7. Course administrator's name (mention all, if more than one name)
Name: Heba saad asal Sara Abdullah Kamil Email: heba.s.asal@tu.edu.iq Sara.ab.kami@tu.edu.iq
8. Course Objectives

Course Objectives	1-For the student to learn about the nature of biochemistry and the important biomolecules in the body, and to study their details. 2-Studying important life molecules in the bodies of living organisms such as humans, such as carbohydrates, fats, proteins, and amino acids. 3-Study the details of the compounds mentioned and distinguish between them. 4-Knowing how to write the structural formulas of these compounds and their important interactions. 5-The student's knowledge of the functions of these compounds and their importance to the health of the human body.

9. Teaching and Learning Strategies	
Strategy	- Using the lecture method and using the interactive whiteboard through explanation and clarification. - Providing students with the basics and additional topics related to the outcomes of biochemical thinking and analysis. - Asking students to write objective reports about some life molecules with the aim of learning and knowing the research method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, first week	2	**Introducing the student to biochemistry .Its importance in our lives**	**Introduction to biochemistry**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
February, second week	2	**Introducing the studen molecules and life, models of living cells, properties and functions of cell parts. With hydrocarbons and their types**	**Biomolecules an living cells**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
februa ry, week3	2	**Familiarize the student with the characteristics Water, solutions, and dissolution of compounds Polarity and ion concentration calculations Hydrogen and measurement curve Al-Calibration**	**Water and solutions**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

februa ry, week 4	2	**Introducing the student to carbohydrates Its importance, composition, classification, types .and characteristics**	**Carbohydrates**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week1	2	**Introducing the student to monosaccharides Its types, cyclic structure, and effectiveness Visual**	**Monosaccharide s**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week2	2	**Introducing the student to interactions Monocarbohydrates are the most important Monosaccharides and their derivatives**	**Monocarbohydr ate reactions and their most important types**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week 3	2	**Student definition of limited sugars oligosaccharides units (Disaccharides, sugars Many units .polysaccharides**	**Complex sugars**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
march, week 4	2	**the first exam**	**First month exam**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

April, week 1	2	**Fats, their properties and importance, Its composition, classification, types and functions**	**Fats**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April, week2	2	**Simple fats , Triglycerides Oils, fatty acids, Phospholipids**	**Types of fats**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April, week3	2	**Proteins, their structure and classification Plasma proteins, changing characteristics General proteins**	**Proteins**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
April week4	2	**Second exam**	**Second month exam**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

11.Course evaluation	
First month exam from 10 / Second month exam from 10 / Add and divide by 2. Oral exam, daily preparation, attendance and participation in the practical part and conduct experiments of 5 + 25 marks, practical part. We extract from it a pursuit score of 40 The final written exam is 60 The final grade is 100	
12.Learning and teaching resources	
Introduction to biochemistry / Dr. Khawla Ahmed Biochemistry./ Dr. Sami Al-Mudhafer Al-Wajeez in Biochemistry./ Dr. Qusay Al-Chalabi	(Required textbooks (methodology, if any)
1- Harpers Revew of Biochemistry, 2- Principle of Bio Chemistry, Smith &White 3- Biochemistry by Armstrong	(Main references (sources)
Biochemistry book, part one / Dr. Tariq Younis	Recommended supporting books and (...references (scientific journals, reports
www.bytoco.com	Electronic references, Internet sites

Course Description Form

1. Course Name: Practical Coordination chemistry
2. Course Code: The Third stage is chemistry
3. Semester / Year: Chapter I
4. Description Preparation Date:**1/9/2025**
5. Available Attendance Forms: class lectures
6. Number of Credit Hours (Total) / Number of Units (Total) 28/ hours
7. Course administrator's name (mention all, if more than one name)
Name: Heba Saad Asal Email: heba.s.asal@tu.edu.iq Name: Ziad Tariq Taha Email : ziad.taha21@tu.edu.iq
8. Course Objectives

Course Objectives	The student will be familiar with some basic concepts in coordination chemistry. At the end of the stage, the student will be able to name coordination compounds, identify coordination complexes, hybridize coordination compounds, geometric shapes of complexes, magnetic properties of isomers formed by these compounds and know the theories that explain coordination complexes.

9. Teaching and Learning Strategies

Strategy	A performance evaluation form according to a standard that depends on the nature of the scientific material. - Works within group work. - Tests (written and oral). - General and transferable qualification skills (other skills related to

	employability and personal development). - Training students to use modern teaching methods and techniques, including integrated education using technology. - Multimedia. - Assigning students to conduct research related to the fields of scientific material. - Enabling students to use their personal skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
September, 4 week	2	Introduction to Coordination Chemistry		**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October, 1 week	2	General Guidelines for Using Glassware and Laboratory Handling		**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October, 2 week	2	Preparation of Coordination Complexes		**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
October, 3 week	2	Nomenclature of Coordination Complexes		**A lecture and a display screen with blackboard and pen with**	**Daily and monthly exams and homework with discussion**

				procedure experiences practical	method
October, 4 week	2	Experiment One: Preparation of Copper Complexes		A lecture and a display screen with blackboard and pen with procedure experiences practical	Daily and monthly exams and homework with discussion method
November, 1week	2	the first exam			
November, 2week	2	Preparation of Cobalt Complexes		A lecture and a display screen with blackboard and pen with procedure experiences practical	Daily and monthly exams and homework with discussion method
November, 3 week	2	Geometric Isomers of Coordination Complexes		A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
November, 4 week	2	Preparation of Cis and Trans Isomers of Chromium Complexes		A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method

December, 1 week	**2**	Preparation of Hexavalent Cobalt Complex.		**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December, 2 week	**2**	Preparation of Hexacoordinated Cobalt Complex		**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
December, 3 week	**2**	**Second exam**			
December, 4 week	**2**	**General Review of the Syllabus**			

11. Course evaluation

First month's exam out of 5 / Second month's exam out of 5 / Gather and divide by 2.

Daily exam and attendance and participation in the practical part out of 5.

(The theoretical effort out of 30 + the practical part out of 10)

We extract from it the final effort grade out of 40.

The final exam is written out of 60.

The final grade is out of 100.

12. Learning and Teaching Resoures

Required textbooks(curricular books, if any)	Fundamentals of coordination chemistry - Al-Azhar University - Faculty of Science - Department of Chemistry
Main references(sources)	Inorganic chemistry; Chatherine E.Houscroft and Alan G.Sharpe
Recommended books and references (scientific journais, reports…)	- Inorganic Chemistry Transition Elements - Coordination Principles Authored by: Dr. Naaman Saad Al-Din Al-Naimi and his group. - Coordination Chemistry. Authored by: Dr. Essam Gerges
Electronic references, websites	Google searching for Coordination Chemistry

Course Description Form

1. Course Name: (Theoretical + Practical) biochemistry
2. Course Code: The second stage is biology
3. Semester / Year: Chapter II
4. Description Preparation Date:**11 /1/2026**
5. Available Attendance Forms: In-person class lectures
6. Number of Credit Hours (Total) / Number of Units (Total) **28**/ hours Theoretical and **26** hours Practical
7. Course administrator's name (mention all, if more than one name)
Name: Heba saad asal Email: heba.s.asal@tu.edu.iq
8. Course Objectives

Course Objectives	1-For the student to learn about the nature of biochemistry and the important biomolecules in the body, and to study their details. 2-Studying important life molecules in the bodies of living organisms such as humans, such as carbohydrates, fats, proteins, and amino acids. 3-Study the details of the compounds mentioned and distinguish between them. 4-Knowing how to write the structural formulas of these compounds and their important interactions. 5-The student's knowledge of the functions of these compounds and their importance to the health of the human body.

9. Teaching and Learning Strategies

Strategy	- Using the lecture method and using the interactive whiteboard through explanation and clarification. - Providing students with the basics and additional topics related to the outcomes of biochemical thinking and analysis. - Asking students to write objective reports about some life molecules with the aim of learning and knowing the research method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
february, first week	2	**Introducing the student to biochemistry .Its importance in our lives**	**Introduction to biochemistry**	**Lecture and discussion**	**Class performance**
february, second week	2	**Introducing the studen molecules and life, models of living cells, properties and functions of cell parts. With hydrocarbons and their types**	**Biomolecules an living cells**	**Lecture and discussion**	**Class performance**
february, week3	2	**Familiarize the student with the characteristics Water, solutions, and dissolution of compounds Polarity and ion concentration calculations Hydrogen and measurement curve Al-Calibration**	**Water and solutions**	**Lecture and discussion**	**Class performance**

februa ry, week 4	2	**Introducing the student to carbohydrates Its importance, composition, classification, types .and characteristics**	**Carbohydrates**	**Lecture and discussion**	**Class performance**
march, week1	2	**Introducing the student to monosaccharides Its types, cyclic structure, and effectiveness Visual**	**Monosaccharide s**	**Lecture and discussion**	**Class performance**
march, week2	2	**Introducing the student to interactions Monocarbohydrates are the most important Monosaccharides and their derivatives**	**Monocarbohydr ate reactions and their most important types**	**Lecture and discussion**	**Class performance**
march, week 3	2	**Student definition of limited sugars oligosaccharides units (Disaccharides, sugars Many units .polysaccharides**	**Complex sugars**	**Lecture and discussion**	**Class performance**
march, week4	2	**the first exam**	**First month exam**	**Lecture and discussion**	**Class performance**
April, week 1	2	**Fats, their properties and importance, Its composition, classification, types and functions**	**Fats**	**Lecture and discussion**	**Class performance**

April , week2	2	**Simple fats , Triglycerides Oils, fatty acids, Phospholipids**	**Types of fats**	**Lecture and discussion**	**Class performance**
April, week3	2	**Proteins, their structure and classification Plasma proteins, changing characteristics General proteins**	**Proteins**	**Lecture and discussion**	**Class performance**
April week4	2	**Second exam**			
May,1 week		**General Review of the Syllabus**			

11.Course evaluation	
First month exam from 15 / Second month exam from 15 / Add and divide by 2. Oral exam, daily preparation, attendance and participation of 10 + 15 marks, practical part. We extract from it a pursuit score of 40 The final written exam is 60 The final grade is 100	
12.Learning and teaching resources	
Introduction to biochemistry / Dr. Khawla Ahmed Biochemistry./ Dr. Sami Al-Mudhafer Al-Wajeez in Biochemistry./ Dr. Qusay Al-Chalabi	(Required textbooks (methodology, if any)
1- Harpers Revew of Biochemistry, 2- Principle of Bio Chemistry, Smith &White 3- Biochemistry by Armstrong	(Main references (sources)
Biochemistry book, part one / Dr. Tariq Younis	Recommended supporting books and (...references (scientific journals, reports
www.bytoco.com	Electronic references, Internet sites

Course Description Form

1. Course Name: Immunology (theoretical)
2. Course Code: The Third stage is Biology
3. Semester / Year: Chapter **2** /2025-2026
4. Description Preparation Date:11/1/2026
5. Available Attendance Forms: class lectures
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: Huda Shareef Diab Email: huda.sh.diab@tu.edu.iq

8. Course Objectives	
Course Objectives	1. Understanding the fundamental principles of the immune system, its components, and mechanisms. 2. Identifying immune cells and organs and their various functions. 3. Studying normal and pathological immune responses in depth.

9. Teaching and Learning Strategies	
Strategy	Interactive Lectures: Explaining concepts and theories using visual aids • Group Discussions: Exchanging ideas about complex topics. • Case Studies: Analyzing real clinical cases. • Presentations: Developing research and scientific presentation skills. • E-Learning: Using digital resources and recorded lectures.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, One week	2	Understand the basic concepts of immunology the Recognize historical development of immunology	Definition of Immunology and Distinguishing the Development of Immunology	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
February, Tow week	2	Distinguish between innate and acquired immunity Understand natural and artificial immunity types	Types of Immunity	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
February, Three week	2	Identify components of the immune system Understand functions of lymphoid organs	immune System	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
February, four week	2	Study primary and secondary lymphoid organs Understand functions of spleen and thymus	Immune Organs	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method
March, Five week	2	Identify types of immune cells Understand lymphocyte and phagocyte functions	Immune Cells (White Blood Cells)	A lecture and a display screen with blackboard and pen	Daily and monthly exams and homework with discussion method

March , Six week	2	**Explain T cell functions** **Distinguish between helper and killer T cells**	**Functions of T-Lymphocytes**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
March, seven week		**the first exam**			
March, Eight week	2	**Understand B cell role** **Explain antibody production mechanism**	**Functions of B-Lymphocytes**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
March, Nine week	**2**	**Distinguish between antibody types** **Understand structure and function of each type (IgG, IgM, IgA, IgE, IgD)**	**Types of Antibodies**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April,Ten week	**2**	Understand antigen characteristics Distinguish between complete and incomplete antigens	**Antigens**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April , Eleven week	**2**	Understand antigen-antibody interaction mechanisms Study factors affecting immune reactions	**Antibody and Antigen Interaction**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**

April, Twelve week	**2**	Understand complement system and components Study classical and alternative pathways	**Complement**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April , Thirteen week	**2**	Compare humoral and cellular immunity Understand mechanisms of each response type	**Humoral and Cellular Immune Response**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
May, Fourteen week	**2**	Distinguish between four types of hypersensitivity Understand pathological mechanisms of each type Distinguish between primary and secondary immunodeficiency Study causes and mechanisms of immunodeficiency	**Hypersensitivity** **Immunodeficiency**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
May, Fifteen week		**Second exam**			

11.Course evaluation

First monthly exam out of 20/Second monthly exam out of 20/summed and divided by 2.

Daily quizzes,attendance , and Participation out of 10.

Theoretical courswork out of 30+ Practical coursework out of 10.

The final coursework grad is obtained out of 40.

Final written theoretical exam (50) +final practical exam (10).

The final grade is out of 100.

12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	● **Cellular and Molecular Immunology (10th Edition, 2021)** Authors: Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai ● **Janeway's Immunobiology (9th Edition, 2016)** Authors: Kenneth Murphy, Casey Weaver
Main references(sources)	● Basic Immunology: Functions and Disorders of the Immune System (6th Edition) Authors: Abul K. Abbas, Andrew H. Lichtman ● The Immune System (4th Edition) - Peter Parham ● How the Immune System Works (6th Edition) - Lauren Sompayrac ● Medical Immunology (7th Edition) - Gabriel Virella
Recommended books and references (scientific journais, reports…)	● **Nature Immunology** Impact Factor: 31.25 | Publisher: Nature Publishing Group Website: https://www.nature.com/ni/ ● **Immunity** Impact Factor: 43.47 | Publisher: Cell Press Website: https://www.cell.com/immunity/ ● **Journal of Experimental Medicine** Impact Factor: 16.58 | Publisher: Rockefeller University Press
Electronic references, websites	● American Association Immunologist (AAI) https://www.aai.org ● International Union of Immunological Societies(IUIS) https://www.iuis.org

Course Description Form

1. Course Name: Immunology Practical
2. Course Code: The Third stage is Biology
3. Semester / Year: Chapter 2/2025-2026
4. Description Preparation Date:11/1/2026
5. Available Attendance Forms: class lectures
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: Hhda Shareef Diab Email: huda.sh.diab@tu.edu.iq Name:Dhuha Kahtan Taha Email: dhuha.k.taha@tu.edu.iq
8. Course Objectives

Course Objectives	1. Acquiring practical skills in conducting immunological tests and analyses. 2. Applying immunological knowledge in laboratory and clinical diagnosis. 3. Understanding immune diseases, their occurrence mechanisms, and diagnostic methods. 4. Developing scientific research skills and critical thinking in immunology.
9. Teaching and Learning Strategies	
Strategy	Laboratory Applications: Hands-on training in immunological techniques • Teamwork: Conducting experiments in groups • Scientific Report Writing: Documenting and analyzing results • Small Research Projects: Applying knowledge in practical research • Learning by Practice: Training on modern

	analytical equipment

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, One week	**2**	**Adhere to laboratory safety rules**	**Instructions and Conditions to be Followed in the Laboratory**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
February, Tow week	**2**	**Master handling laboratory animals** **Learn different injection techniques**	**Teaching Laboratory Animals and Injection Methods**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
February, three week	**2**	**Master blood drawing techniques safely** **Learn blood component separation methods**	**Methods of Blood Collection, Gathering, and Separation**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
February, Four week	**2**	**Prepare blood smears** **Differentiate types of white blood cells**	**Differential Blood Smear Examination**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**

March, Five week	**2**	**Perform serial dilutions** **Apply dilution concept in tests**	**Dilution Concept**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
March, Six week	**2**	**Understand titer concept** **Apply titer measurements**	**Titer Concept**	**A lecture and a display screen with blackboard and pen with procedure experiences practical**	**Daily and monthly exams and homework with discussion method**
March, Seven week	**2**	**Master serum collection and preservation** **Learn complement removal methods**	**Serum Extraction, Preservation, and Complement Removal**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
March, Eight week	**2**	**the first exam**			
March, Nine week	**2**	**Study complement system** **Measure complement activity in laboratory**	**Complement Activity in Bacterial Killing**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April, Ten week	**2**	Measure total protein Estimate immunoglobulins	**Estimation of Total Protein and Immunoglobulin in Serum and Secretions**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**

April, Eleven week	**2**	Perform skin sensitivity tests Interpret skin test results	**Hypersensitivity Reactions (Skin Test Method**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April, twelve week	**2**	Perform agglutination tests Interpret agglutination test results	**Agglutination Test**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
April, Thirteen week	**2**	Apply blood grouping tests Determine blood compatibility	**Direct Agglutination Applications (Blood Grouping**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
May,Four teen week	**2**	Perform RF and CRP tests Diagnose autoimmune diseases	**Indirect Agglutination Applications (C-Protein Test and/or RF Test and/or CRP Test)**	**A lecture and a display screen with blackboard and pen**	**Daily and monthly exams and homework with discussion method**
May,Fifte en week		**Second exam**			

11.Course evaluation

Students are assessed during the semester according to the following criteria:

First monthly exam out of 10 / Second monthly exam out of 10 / Daily quizzes and participation out of 10. These grades are summed and divided by 3 to obtain the coursework grade of 10.

Final exam out of 10.

12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	
Main references(sources)	**1- Immunology for Medical Students (3rd Edition) - Matthew Helbert** **2- Case Studies in Immunology: A Clinical Companion (7th Edition) - Raif Geha, Luigi Notarangelo**
Recommended books and references (scientific journais, reports…)	Frontiers in Immunology(Open Access) Website: https://www.frontiersin.org/journals/immunology Clinical Immunology Website: https://www.sciencedirect.com/journal/clinical-immunologyl
Electronic references, websites	Pubmed https://pubmed.ncbi.nlm.nih.gov WHO-Immunization https://www.who.int

Course Description Form

1. Course Name:
General Chemistry
2. Course Code:
General Chemistry
3. Semester / Year:
Chapter one / 2025 - 2026
4. Description Preparation Date:
11-9-2025
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
33 hours
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Abdulwahid AbdulSattar Talouh Email: altlwhbdalwahd @gmail.com Name: Assistant lecturer Sara Abdullah kamil Email: sara.ab.kamil@tu.edu.iq
8. Course Objectives

Course Objectives	A- Cognitive Objectives: 1- Providing the student with sufficient information to acquire expertise in the classification of chemical compounds. 2- Equipping the student with the knowledge of all branches of chemistry. 3- Providing the student with sufficient knowledge to understand the fundamentals of chemistry.

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hou	Required Learning Outcomes	Unit or sub name	Learning method	Evaluation method
1	3	Understanding the nature of laboratory work and the types of tools, glassware, and equipment used within .the laboratory	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily, monthly exams, homework

2	3	Understanding the instructions and guidelines to be followed within the laboratory	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
3	3	Learn how to prepare solutions in a practical, hands-on way.	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
4	3	Learn how to find the numbe water of crystallization molecules in chemical .compounds	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
5	3	Learn how to form precipita and separate dissolved ions .from the precipitate	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
6	3	First-month exam			
7	3	Learn how to separate sedime practically by first performing the calculations theoretically and then carrying out the .practical application	General Chem	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
8	3	Learn how to conduct distillation experiments	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
9	3	Understanding the differences between types of distillation	General Chemistry	Projector screen, whiteboard, pen, and laboratory	Daily and monthly exams, homework

				equipment ,paper , Laboratory equipment	
10	3	Understanding the concept crystals in chemistry	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
11	3	Conducting a practical experim involving the formation of crystals of specific compounds	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
12	3	A comprehensive review of the basic concepts in the course	General Chemistry	Projector screen, whiteboard, pen, and laboratory equipment ,paper , Laboratory equipment	Daily and monthly exams, homework
13	3	Second month exam			

11. Course Evaluation

Students are evaluated during the semester according to the following principles:

- First-month exam from 20 / Second-month exam from 20 / Daily exam, attendance and participation from 10
- (Theoretical pursuit of 30 + Practical pursuit of 10) Pursuit of 40
- Final exam of 60
- Final score out of 100

12. Learning and teaching resources

Required textbooks	Chemistry: The Central Science

	: Brown, LeMay, Bursten, Murphy, Woodward
Primary references (sources)	General Chemistry: Principles and Modern Applications
Recommended supporting books and references (scientific journals, reports...)	1. Journal of the American Chemical Society (JACS) 2. Nature Chemistry 3. Chemical Reviews 4-Angewandte Chemical International Edition

Course Description Form

1. Course Name : Microbiology – practical
2. Course Code: 2nd class
3. Semester / Year: Courses system
4. Description Preparation Date: 2/ 9 / 2025
5. Available Attendance Forms:Presency class lectures
6. Number of Credit Hours (Total) / Number of Units (Total) : 39 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Lecturer : Abdulrahman Jirgees Younis Email: abdulrahman.j.younis@tu.edu.iq

8. Course Objectives	
Course Objectives	• Introducing the different types of bacteria and their relationship to the environment and humans , and knowing the beneficial and harmful types and their relationship to human diseases . •Raise student's practical skills in how to provide appropriate environmental conditions for the growth of microorganisms in the laboratory to study them , prepare the cultural media on which these organisms grow , and learn methods for their diagnosis. •Empowering students and raising their abilities in how to prepare the appropriate medium for the growth of each microorganism (bacterial) according to its requirements . •Training students on how to use the necessary equipments in the microbiology laboratory , especially the microscope .

9. Teaching and Learning Strategies	
Strategy	Using the standard method (delivering lectures) and presenting slides via Powerpoint .

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
September third week	3	Laboratory safety	Laboratory tools and devices and how to use them	Using the data show and presenting theoritical material	oral and written questions
September fourth week	3	Sterilizations and disinfection methods	Identify the mechanisms of physical sterilization and chemical disinfection	Use the Data show	Quiz , oral and written questions
October First week	3	Sterilizations and disinfection methods	Identify the mechanisms of physical sterilization and chemical disinfection	Use the Data show	Quiz , oral and written questions
October second week	3	Cultures media	Introducing the types of media , its components , function and structure.	Use the Data show + practical experience	Quiz , oral and written questions
October third week	3	Bacteria cultivation	Introducing the patterns of cultivation of bacteria on cultural media	Use the Data show + practical experience	Quiz , oral and written questions
October fourth week	3	Bacterial isolation	Detection of differnt sources of bacterial isolation	Use the Data show +practical experience	Quiz , oral and written questions
November first week	3	Production of pure bacterial cultures	Methods of transporting and isolationof bacteria under sterile conditions	Use the Data show + practical experience	Quiz , oral and written questions
November second week	3	Bacterial stains	Detection of differnt types of bacterial stains	Use the Data show +practical experience	Quiz , oral and written questions
November third week	3	Bacterial stains	Detection of differnt types of bacterial stains	Use the Data show +practical experience	Quiz , oral and written questions
November fourth week	3	Bacterial counting	Numerical and quantitative estimationa live and total counting of bacteria	Use the Data show +practical experience	Quiz , oral and written questions
December first week	3	Bacterial counting	Numerical and quantitative estimationa . live and total counting of bacteria	Use the Data show +practical experience	Quiz , oral and written questions
December second week	3	Bacterial movement	Detection of bacterial types according to their motility characterstics	Use the Data show + practical experience	Quiz , oral and written questions
December third week	3	Factors affecting bacterial growth	Introducing the intrinsic and genetic	Use the Data show +	Quiz , oral and written

			factors affecting	practical experience	questions

11.Course Evaluation

Exam of the first month is from 10 and second month is from 10 .
Attendance +participation + daily exams is from10
A degree becomes 30 in which divided by 3 .
the average is extracted from 10 .

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nothing
Main references (sources)	**Basics of the practical curriculum . Osama Nijris.2022** **Bergey's Manual of Systematic Bacteriology** .N.R. Krieg. W Ludwig .W B Whitman . B P Hedlund. B J Paster. J T Staley. N Ward. D Brown . A Es Parte . 2010. **Brock Biology of Microorganisms, 12th edn** . Michael T Madigan ,John Martinko . P.V.Dunlap. D.P.Clark. 2004 .
Recommended books and references (scientific journals , reports ...)	**Practical Medical Microbiology** . 14th ed . Collee , J.F. ; Fraser , A.G. ; Marmian, B.P. and Simons , A. 1996 .
Electronic References , Websites	Google Search . Pubmed. Google scholar

Course Description Form

1. Course Name: Immunology – practical

2. Course Code: 3rd class

3. Semester / Year : Courses system

4. Description Preparation Date: 25/ 1 / 2026

5. Available Attendance Forms : Presency class lectures

6. Number of Credit Hours (Total) / Number of Units (Total) : 39 hours

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

Name: Assist. Lecturer : Abdulrahman Jirjees Younis
Emai :abdulrahman.j.younis@tu.edu.iq

8. Course Objectives

Course Objectives	• Introducing the Immunology in general and knowledge its importancein protecting the body from pathogens . ..... •knowing the underlying causes that are related to the functioning of the immune system . •Revealing modern techniques used to diagnose the functioning of the immune system thtough practical experiments . •Identify the mechanisms of laboratory diagnosis and identify some diseases that rely on immunological laboratory diagnosis .

9. Teaching and Learning Strategies

Strategy	Using the standard method (delivering lectures) and presenting slides via Powerpoint .

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February first week	3	Immune system cells	Introducing the different immune system cells	Using the data show and presenting	oral and written questions

				theoritical material	
February second week	3	Organs and tissues of the Immune system	Introducing the components of the immune system , including organs snd tissues .	Use the Data show	Quiz , oral and written questions
February third week	3	Drawing blood and injection antigens into laboratory animals	Detecting methods of injecting an antigens into laboratory animals	Use the Data show+practical experiments	Quiz , oral and written questions
February fourth week	3	Drawing blood and injection antigens into laboratory animals	. Detecting methods of injecting an antigens into laboratory animals	Use the Data show + practical experience	Quiz , oral and written questions
March first week	3	Agglutinations reactions	Pregnancy detection and blood type	Use the Data show + practical experience	Quiz , oral and written questions
March second week	3	Agglutinations reactions	Detection the presence of rheumatic factor (RF) and Widal test	Use the Data show +practical experience	Quiz , oral and written questions
March third week	3	Precipitation reactions	Introducing the patterns of precipitation reactions	Use the Data show + practical experience	Quiz , oral and written questions
March fourth week	3	Interaction between antigen and antibody	Introduction to complement fixation tests	Use the Data show +practical experience	Quiz , oral and written questions
April first week	3	ELISA test	Detection of antibodies through ELISA and its steps	Use the Data show +practical experience	Quiz , oral and written questions
April second week	3	Bacterial counting	Numerical and quantitative estimationa . live and total counting of bacteria	Use the Data show +practical experience	Quiz , oral and written questions
April third week	3	Phagocytosis	Introduction the different phagocytosis cells	Use the Data show +practical experience	Quiz , oral and written questions
April fourth week	3	Inflammation	Introducing the inflammation , type and causes .	Use the Data show + theorotical material	Quiz , oral and written questions
May First week	3	Hypersensitivity	Detection of hypersensitivity reactions patterns	Use the Data show + practical experience	Quiz , oral and written questions

11.Course Evaluation

Exam of the first month is from 10 and second month is from 10 .
Attendance +participation + daily exams is from10
A degree becomes 30 in which divided by 3 .
the average is extracted from 10 .

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nothing
Main references (sources)	Stevens Christen Dorresteyn. (2010). Clinical immunology and serology: a laboratory perspective / Christen Dorresteyn Stevens. 3rd ed . Mary Louis Turgeon . 2014. Immunology and serology medicine 4th ed .
Recommended books and references (scientific journals , reports ...)	Review of Medical Microbiology and Immunology .Levinson. Journal of clinical immunology .
Electronic References , Websites	Google Search . Pubmed. Google scholar

Course Description Form

1. **Course Name:**
Chemistry gravimetric analysis
2. **Course Code:**
Chemistry gravimetric analysis
Semester / Year:
3. **Chapter two**
4. **Description Preparation Date:**
2025-1-11
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Sara Abdullah Kamil **Email: sara.ab.kamil@tu.edu.iq**
8. Course Objectives

Course Objectives	• Introducing the importance of Chemistry gravimetric analysis and the relationship of this science to other sciences. • Developing students' skills in analytical Chemistry sciences. • Learn about the types of qualitative and quantitative • • Identify sediments, sediment characteristics, and separation methods .....
9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject Name	Learning method	Evaluation method
January 4	0	Introducing the student to analytical chemistry	Introduction and general idea about weight analysis and basic principles	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

February 1	0	Gravimetric analysis methods	Gravimetric analysis methods, sediments	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
February 2	0	Learn about weight analysis calculations	Weight analysis calculations, weight factor	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
February 3	0	Organic and inorganic precipitants	Organic and inorganic precipitants, their types, and the conditions that must be met	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
February 2	0	Solubility	Solubility, dissolution yield, applications of the dissolution yield	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
March 1	0	Factors affecting solubility	Factors affecting solubility: the common ion, the pH of the solution, and the complex ion	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
March 2	2	First-month exam			
March 3	0	Factors affecting solubility	Factors affecting solubility, temperature, type and nature of solvent. Hydrolysis of salt.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
March 4	0	Crystalline formation of the sediment	Crystalline formation of sediments, particle size	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
April 1	0	Precipitate washing solutions	Precipitate washing solutions, effect on the precipitate	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
April 2	2	Gravimetric analysis steps	Steps of gravimetric analysis, sample weight, modeling, sample dissolution, sample	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

April 3	0	Gravimetric analysis steps	Steps for gravimetric analysis, washing the precipitate, burning the precipitate, and dissolving the precipitate	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
April 4	0	Second month exam			

11. Course Evaluation

Students are evaluated during the semester according to the following principles:

- First-month exam from 10 / Second-month exam from 10 / Daily exam, attendance and participation from 10
- (Theoretical pursuit of 30 + Practical pursuit of 10) Pursuit of 40
- Final exam of 60
- Final score out of 100

12. Learning and teaching resources

Required textbooks (methodology, if any)	Theoretical basics of quantitative gravimetric and volumetric analysis of inorganic analytical chemistry, Prof. Dr. Hadi Kazem Awad
Primary references (sources)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986
Recommended supporting books and references (scientific journals, reports...)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986

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

Academic Program Description Form

1.Program vision

The Science Department is one of the applied science departments. Those who teach science must be equipped with pure sciences according to specific principles and rules, while keeping pace with the development of science. The department seeks to advance knowledge in the field of science to qualify them to .serve society and encourage them to develop their abilities and capabilities

2.Program message

Preparing qualified university teachers in the field of specialization and providing them with the principles of knowledge, scientific and logical thinking, scientific research skills in the sciences, and the skills necessary for future communication with society in the field of work, in addition to providing the student with a set of sciences and knowledge that complete the teacher's culture in general, including cultural requirements, educational requirements, sciences, .and others

3.Program objectives

1- Providing the Ministry of Education with specialized staff to work as university teachers.
2- Enabling students to master the principles of pure sciences.
3- Strengthening scientific concepts, and some basic terms and concepts related to it
4- Understanding the theoretical foundations on which sciences are based.
5- Providing graduates with skills and methods in teaching and learning.
6- Providing the Ministry of Education with specialized staff to work as university teachers.
7- Enabling students to master the principles of pure sciences.
8- Strengthening scientific concepts, and some basic terms and concepts related to it.
9- Understanding the theoretical foundations on which sciences are based.
10.Providing graduates with skills and methods in teaching and learning -10

4. Program Accreditation

Ministry of Higher Education and Scientific Research/National Accreditation Council caep

5. Other External Influences

Science Curriculum Development Project in Iraqi Universities/Ministry of Higher Education and Scientific Research Implementation in schools for two months, field visits to school.

6. Program Structure				
Program Structure	**Number of Courses**	**Credit hours**	**Percentage**	***Reviews**
Institutional Requirements	**13**	**26**	**19%**	fundamental
College Requirements	**12**	**10**	**29%**	fundamental
Department Requirements	**25**	**70**	**52%**	fundamental
Summer Training				
Other				

.Notes may include whether the course is basic or optional *

7. Program Description				
Credit Hours		**Course Name**	**Course Code**	**Year/Level**
Practical	**Theoretical**			
	1	Democracy and Human Rights		First/First Semester
2	3	General Biology		
2	1	Computer Science		
	3	Developmental Psychology		
2	3	General Chemistry		
	2	Logic (Mathematics)		
	2	Arabic Language		
2	3	General Physics		First/Second Semester
	2	Arabic Language		
	2	English Language		

	3	Principles of Education		
	2	Islamic Education/Civilization		
2	2	Human Biology		
	2	Laboratory Safety and Security		
	2	Arabic Language		Second Chemistry Branch / First Semester
	2	English Language		
2	1	Computer		
	2	Curricula and Textbooks		
2	2	Inorganic Chemistry		
2	2	Volumetric Analytical Chemistry		
2	2	Physical Chemistry		
	2	Crimes of the Baath Regime		
	2	Arabic		Second Biology Branch/First Semester
	2	English		
2	1	Computer		
	2	Curricula and Textbooks		
	2	Crimes of the Baath Regime		
2	3	Microbiology		
2	2	Cytology		
	2	Virology		
2	2	Psychology of classroom learning		Second Chemistry Branch/
	3	Educational Psychology		

2	2	Gravimetric Analytical Chemistry		Second Semester
2	2	Organic Chemistry		
2	2	Representative Element Chemistry		
	2	Differential and Integral Calculus		
2	2	Psychology of classroom learning		Second Biology Branch/ Second Semester
	3	Educational Psychology		
2	2	Invertebrates		
2	2	Histology and Embryology		
	2	Biochemistry		
2	2	Plant Physiology		
	3	General Teaching Methods		Third Chemistry Branch/First Semester
	3	Educational Research Methodology		
2	2	Coordination Chemistry		
2	2	Organic Chemistry		
2	2	Industrial Chemistry		
	3	General Teaching Methods		Third Biology Branch/First Semester
	3	Educational Research Methodology		
2	2	Animal Physiology		
2	2	Parasitology		
2	3	Plant and Animal Production		

	2	Measurement and Evaluation		
	2	Science Teaching Methods		
	2	Curricula and Textbooks		Third Chemistry Branch/Second Semester
	2	Sustainable Development		
	2	Environmental and Health Education		
2	2	Soil Chemistry		
2	2	Oil and Petrochemicals		
2	2	Biochemistry		
	2	Measurement and Evaluation		
	2	Science Teaching Methods		
	2	Curricula and Textbooks		Third Biology Branch/Second Semester
	2	Sustainable Development		
	2	Environmental and Health Education		
	2	Plant classification		
2	2	Immunology		
2	2	Entomology		
	2	Professional Ethics		
	2	Arabic Literature		
	2	Educational Administration and Supervision		Fourth Chemistry Branch/First Semester
4		Practical Education (Observation)		
2	2	Organic Diagnosis		

2	2	Analysis		
	2	Clinical Chemistry		
	2	Chemistry of Natural Products		
	2	Professional Ethics		
	2	Arabic Literature		
	2	Educational Administration and Supervision		
4		Practical Education (Observation)		
2	2	Algae and Fungi		
2	2	Genetics		
	2	Serums and Vaccines		
	2	Endocrine Physiology		
12		Practical Education (Application)		
	2	Graduation Research Project		
12		Practical Education (Application)		
	2	Graduation Research Project		

8. Expected learning outcomes of the program	
Knowledge	
Learning Outcomes 1	Learning Outcome Statement 1
Skills	
Learning Outcomes 2	Learning Outcome Statement 2
Learning Outcomes 3	Learning Outcome Statement 3
Values	
Learning Outcomes 4	Learning Outcome Statement 4
Learning Outcomes 5	Learning Outcome Statement 5
9. Teaching and learning strategies	

There are many teaching and learning methods used in the Science Department, the most important of which are: (lecture - theoretical and practical, discussion and dialogue, field visits, discussion groups on specific topics, theoretical and practical student research, office activities)

10. Evaluation methods

- Daily and monthly oral and written exams
-Daily assignments and extracurricular activitie

11. Faculty

Faculty members

Academic Rank	Specialization		Requirements/Skills (if any)	Number of Faculty Members	
	general	precise		Cadre	Lecturer
Professor	Educational and Psychological Sciences	Psychological Counseling and Educational Guidance		1	
Professor	Agricultural Sciences	Agricultural Extension		1	
Professor	History	Modern History		1	
Professor	Organic Chemistry	Organic Chemistry		1	
Professor	Agricultural Sciences	Food Science		1	
Assistant Professor	Geology			1	
Assistant Professor	Chemistry	Industrial Chemistry		1	
Lecturer	physics	solid physics		1	
Lecturer	Chemistry	Analytical Chemistry		2	

Lecturer	Chemistry	Physical Chemistry		1	
Lecturer	Chemistry	Organic Chemistry		1	
Lecturer	Management and Economics	Accounting		1	
Lecturer	Biology	Insects		1	
assist. Lecturer	Chemistry	Biochemistry		1	
assist. Lecturer	Agricultural Sciences	Agricultural Extension		2	
assist. Lecturer	Biology			2	
assist. Lecturer	physics			1	
assist. Lecturer	Biology	Plant/Environment and Pollution		2	
assist. Lecturer	Biology	Microbiology		1	
assist. Lecturer	Biology	Histology		2	
assist. Lecturer	Educational Sciences	Teaching Methods		1	
assist. Lecturer	Chemistry	Organic Chemistry		1	
assist. Lecturer	English language			1	
assist. Lecturer	Arabic	Linguistics		1	

assist. Lecturer	Chemistry	Analytical Chemistry		1	

Professional Development
Orientation of New Faculty
Mandatory and developmental courses, teaching qualifications, follow-up by experienced professors and evaluation
Professional development for faculty members
Encouraging them to obtain higher degrees, write research, use modern .scientific references, and keep pace with technical development
12. Acceptance Criteria
Central
13. The most important sources of information about the program
_ The program link on the Internet, and its applications in similar universities. - _ The training courses held by the quality and university performance departments about the program in various institutes and colleges in Iraq -Administrative and scientific data
14. Program Development Plan
Developing skills for teaching scientific and educational courses and developing study materials and curricula

Course Description Form

1. Course Name:
English Language
2. Course Code:
English Language
3. Semester / Year:
Second Course (Semester) 2025-2026
4. Description Preparation Date:
11-1-2026
5. Available Attendance Forms:
Classroom Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
(48) Hours / (2) Units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ahmed Ali Hasan Email: ahmed.ali06@tu.edu.iq
8. Course Objectives

A) Cognitive Aims:

1- Understand and comprehend the basic composition of words and the types of grammatical structures (forms) in English.
2- Understand and comprehend the grammar of English words and sentences.
3- Understand and comprehend word types in English (simple, complex, complex)
4- Understand and comprehend available English word formation methods, such as borrowing or using specific acronyms from other languages.
5- Understand and comprehend the types of English Tenses.
6- Understand and comprehend the methods of analyzing English sentences structure based on its own tense.

B) Course-specific skill objectives

1- The ability to understand different words related to students major according to their basic forms.
2- Ability to use and differentiate between emission and derivative additive types.
3- Able to use simple, complex, and complex words
4- The ability to communicate with each other in English

9. Teaching and Learning Strategies

- Presenting the subject on PowerPoint in detail, supported by examples and the required rules, directing questions to the students, discussing with them the information presented, and helping them participate by giving examples and asking questions in turn.
- Helping students to learn and self-explore knowledge by visiting the college library and websites to obtain additional knowledge of the course vocabulary.
- Dividing students into work groups and assigning them additional duties and homework's.

10. Course Structure

Week	*Hours*	*Required learning outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
1st week of March	2	Comprehending Verbs to be, greetings	Verb "to be", greetings and numbers.	Classroom Lectures and Discussion	Oral and written questions
2nd week of March	2	Comprehending Singular and plural	Singular and plural nouns. practicing conversations.	Classroom Lectures and Discussion	Oral and written questions
3rd week of March	2	Comprehending Pronouns	Pronouns (subjective, objective and possessive)	Classroom Lectures and Discussion	Oral and written questions
4th week of March	2	Comprehending Numbers and countries	Countries, numbers (11-30)	Classroom Lectures and Discussion	Oral and written questions
1st week of April	2	Exam			
2nd week of April	2	Comprehending Verbs to be and questions	*Verb "to be" (is, are, am). Questions with question word as well as Yes /No questions*	Classroom Lectures and Discussion	Oral and written questions
3rd week of April	2	Comprehending possessive adjectives	Possessive adjectives (my, your, his, her, their, our, its)	Classroom Lectures and Discussion	Oral and written questions
4th week of April	2	Comprehending how to pluralize nouns	How to pluralize nouns by -s, - es. *Have* and *has* as irregular verbs.	Classroom Lectures and Discussion	Oral and written questions
1st week of May	2	Comprehending present simple tense	Present simple tense positive, negative and Questions	Classroom Lectures and Discussion	Oral and written questions
2nd week of May	2	Exam			
3rd week of May	2	Comprehending past simple tense	Past simple tense positive, negative and Questions	Classroom Lectures and Discussion	Oral and written questions

4th week of May	2	Comprehending pronouns	Pronouns (subjective, objective and possessive)	Classroom Lectures and Discussion	Oral and written questions

11. Course Evaluation

The 1st course exam is out of 15. The 2nd course exam is out of 15. Concern oral exam, daily preparation, and participation all are out of 10. Then, we accumulate course grade to be out of 40. Finally, the final written exam is out of 60 and the final grade is out of 100.

12. Learning and Teaching Recourses

Required textbooks (curricular books, if any):
Headway for Beginners

Main references (resources):
A Comprehensive Grammar of English by R. Quirk

Recommended books and references (Scientific journals, reports):
Listening, reading, and speaking in English reports or media and communication between each other.

Electronic references, websites:
English 4Arabs, Easyenglishlesson.com, Slideshare.

Course Description Form

1. Course Name:
English Language
2. Course Code:
English Language
3. Semester / Year:
First Course (Semester) 2025-2026
4. Description Preparation Date:
1-9-2025
5. Available Attendance Forms:
Classroom Lectures
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: Dr. Ahmed Ali Hasan Email: ahmed.ali06@tu.edu.iq
8. Course Objectives

A) Cognitive Aims:

1- Understand and comprehend the basic composition of words and the types of grammatical structures (forms) in English.
2- Understand and comprehend the grammar of English words and sentences.
3- Understand and comprehend word types in English (simple, complex, complex)
4- Understand and comprehend available English word formation methods, such as borrowing or using specific acronyms from other languages.
5- Understand and comprehend the types of English Tenses.
6- Understand and comprehend the methods of analyzing English sentences structure based on its own tense.

B) Course-specific skill objectives

1- The ability to understand different words related to students major according to their basic forms.
2- Ability to use and differentiate between emission and derivative additive types.
3- Able to use simple, complex, and complex words
4- The ability to communicate with each other in English

9. Teaching and Learning Strategies

- Presenting the subject on PowerPoint in detail, supported by examples and the required rules, directing questions to the students, discussing with them the information presented, and helping them participate by giving examples and asking questions in turn.
- Helping students to learn and self-explore knowledge by visiting the college library and websites to obtain additional knowledge of the course vocabulary.
- Dividing students into work groups and assigning them additional duties and homework's.

10. Course Structure

Week	*Hours*	*Required learning outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
Fourth week of September	2	Comprehending Verbs to be, greetings	Verb "to be", greetings and numbers.	Classroom Lectures and Discussion	Oral and written questions
First week of October	2	Comprehending Singular and plural	Singular and plural nouns. practicing conversations.	Classroom Lectures and Discussion	Oral and written questions
Second week of October	2	Comprehending Pronouns	Pronouns (subjective, objective and possessive)	Classroom Lectures and Discussion	Oral and written questions
Third week of October	2	Comprehending Numbers and countries	Countries, numbers (11-30)	Classroom Lectures and Discussion	Oral and written questions
Fourth week of October	2	Exam			
Fifth week of October	2	Comprehending Verbs to be and questions	*Verb "to be" (is, are, am). Questions with question word as well as Yes /No questions*	Classroom Lectures and Discussion	Oral and written questions
First week of November	2	Comprehending possessive adjectives	Possessive adjectives (my, your, his, her, their, our, its)	Classroom Lectures and Discussion	Oral and written questions
Second week of November	2	Comprehending how to pluralize nouns	How to pluralize nouns by -s, - es. *Have* and *has* as irregular verbs.	Classroom Lectures and Discussion	Oral and written questions
Third week of November	2	Comprehending present simple tense	Present simple tense positive, negative and Questions	Classroom Lectures and Discussion	Oral and written questions
Fourth week of November	2	Exam			
Fifth week of November	2	Comprehending past simple tense	Past simple tense positive, negative and Questions	Classroom Lectures and Discussion	Oral and written questions

First week of December	2	Comprehending pronouns	Pronouns (subjective, objective and possessive)	Classroom Lectures and Discussion	Oral and written questions
Second week of December	2	Comprehending spelling words within present simple tense	Spelling – present simple: he, she, it	Classroom Lectures and Discussion	Oral and written questions
Third week of December	2	Comprehending writing skills	Writing Skills	Classroom Lectures and Discussion	Oral and written questions
Fourth week of December	2	Comprehending definite and indefinite articles	Definite and Indefinite articles (a, an)	Classroom Lectures and Discussion	Oral and written questions

11. Course Evaluation

The 1st course exam is out of 15. The 2nd course exam is out of 15. Concern oral exam, daily preparation, and participation all are out of 10. Then, we accumulate course grade to be out of 40. Finally, the final written exam is out of 60 and the final grade is out of 100.

12. Learning and Teaching Recourses

Required textbooks (curricular books, if any):
Headway for Beginners

Main references (resources):
A Comprehensive Grammar of English by R. Quirk

Recommended books and references (Scientific journals, reports):
Listening, reading, and speaking in English reports or media and communication between each other.

Electronic references, websites:
English 4Arabs, Easyenglishlesson.com, Slideshare.

Course Description Form

1. Course Name:
Phonetics
2. Course Code:
Phonetics (theoretical and Practical)
3. Semester / Year:
Second Course (Semester) 2025-2026
4. Description Preparation Date:
11-1-2026
5. Available Attendance Forms:
Classroom Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
(72) Hours / (3) Units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Ahmed Ali Hasan Email: ahmed.ali06@tu.edu.iq
8. Course Objectives
Developing students' skills to pronounce English sounds, consonants and vowels , mastering the articulation of sound sequences, besides enabling the students' developing their usage of stress and intonation. 1- Identifying the different phonemes (Consonants and Vowels) that are found in standard English and making the students able to pronounce them correctly. 2- To help the students to acquire different skills about the articulation of sounds and being able to use these sounds correctly. 3- To help the students to acquire the positive side towards Phonetics.
9. Teaching and Learning Strategies
1. Giving the students the basic concepts about Phonetics. 2. Encouraging the students to do different practices about Phonetics. 3. Arranging the different concepts of Phonetics within different chapters. 4. Concentrating on symbols and transcription. 5. Dealing with one of the different types of transcription, that is phonemic transcription. 6. Using figures and diagrams to facilitate the subjects. 7. Using the tape-recorder to listen for native speakers of English. 8. Using different programs for the articulation of sounds.

10. Course Structure					
Week	*Hours*	*Required learning outcomes*	*Unit or subject name*	*Learning method*	*Evaluation method*
1st week of March	3	Reviewing some concepts in phonetics and phonology: dialects, accents, RP English, letters and sounds.	concepts in phonetics and phonology: dialects, accents, RP English, letters and sounds.	Classroom Lectures and Discussion	Oral and written questions
2nd week of March	3	Explaining the production of speech sounds and reviewing the organs of speech and their functions in the articulation of speech.	the production of speech sounds and reviewing the organs of speech and their functions in the articulation of speech.	Classroom Lectures and Discussion	Oral and written questions
3rd week of March	3	Comprehending the English vowel system and reviewing pure, diphthong, and triphthong sounds and their description.	Exposing the English vowel system and reviewing pure, diphthong, and triphthong sounds and their description.	Classroom Lectures and Discussion	Oral and written questions
4th week of March	3	Comprehending Explaining the difference between vowel quality and vowel quantity.	Explaining the difference between vowel quality and vowel quantity.	Classroom Lectures and Discussion	Oral and written questions
1st week of April	3	Exam	Exam		
2nd week of April	3	Reviewing the English consonant system and their classification and description.	Reviewing the English consonant system and their classification and description.	Classroom Lectures and Discussion	Oral and written questions
3rd week of April	3	Explaining the distribution of all English consonants and vowels in words.	Explaining the distribution of all English consonants and vowels in words.	Classroom Lectures and Discussion	Oral and written questions
4th week of April	3	Explaining a number of phonological terms, such as phoneme, allophone, difference between segmental and supra-segmental phonology.	Explaining a number of phonological terms, such as phoneme, allophone, difference between segmental and supra-segmental phonology.	Classroom Lectures and Discussion	Oral and written questions
1st week of May	3	Reviewing phonological terms like minimal pairs, Complementary distribution, free and defective distribution.	Reviewing phonological terms like minimal pairs, Complementary distribution, free and defective distribution.	Classroom Lectures and Discussion	Oral and written questions
2nd week of May	3	Exam	Exam		

3rd week of May	3	Explaining Fricative and affricate sounds, their production and distribution.	Explaining Fricative and affricate sounds, their production and distribution.	Classroom Lectures and Discussion	Oral and written questions
4th week of May	3	Explaining the difference between fortis and lenis consonants, and exposing the rules of pronouncing these sounds in words and their influence on adjacent sounds.	Explaining the difference between fortis and lenis consonants, and exposing the rules of pronouncing these sounds in words and their influence on adjacent sounds.	Classroom Lectures and Discussion	Oral and written questions

11. Course Evaluation

The 1st course exam is out of 15. The 2nd course exam is out of 15. Concern oral exam, daily preparation, and participation all are out of 10. Then, we accumulate course grade to be out of 40. Finally, the final written exam is out of 60 and the final grade is out of 100.

12. Learning and Teaching Recourses

- Roach, P. English Phonetics and Phonology.
- Barnard, G. Better Spoken English.
- Gimson, A. C. The Pronunciation of English.
- Ladefoged, P. A Course in Phonetics.
- Jones, D. An Outline of English Phonetics.
- O'Connor, J. D. Better English Pronunciation.

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 arrange

d 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 staP 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, quaJerly), 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: Tikrit

Faculty/Institute: College of Basic Education in Sharqat

Scientific Department: Department of Sciences

Academic or Professional Program Name: Master's degree in Life Sciences

Final Certificate Name: Master's degree in Life Sciences

Academic System: Courses

Description Preparation Date: 2/9/2025

File Completion Date:15/9/2025

Signature:

Head of Department Name:
Prof. Dr. Ali Alaje Khudhair

Date:

Signature:

Scientific Associate Name:
Prof. Dr. Saad Georges Saeed

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

Course Description Form

1. Course Name:
Educational Administration and Supervision
2. Course Code:
3. Semester / Year:
The Fourth Semester/
4. Description Preparation Date:
2/9/202
5. Available Attendance Forms:
In-person (Weekly)
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: Assistant teacher :Dr. Ali Olaij Khudhur Email: dr.al7763@tu.edu.iq
8. Course Objectives

Course Objectives	The student should be familiar with the following concepts 1.The concept of management and its development, educational management, and school management. ..... 2. Understanding the most important management theories. 3. Understanding the most important functions of management. 4. The concept of leadership, its development, and its most important theories. 5. Understanding educational supervision and its methods. 6. Evaluation in educational supervision (evaluation of the principal, evaluation of the teacher, and evaluation of the students).

9. Teaching and Learning Strategies	
Strategy	Standard method (lectures) Discussion method Method of solving problems

10. Course Structure					
Week	**Hours**	**Required Learning**	**Unit or subject name5**	**Learning method**	**Evaluation**

		Outcomes			method
1	2	The concept of management, educational management, and school management with examples	Educational Administration and Supervision	lecture	Class performance
2	2	Theories of Educational Administration	Educational Administration and Supervision	lecture	Class performance
3	2	Functions of Educational Administration	Educational Administration and Supervision	lecture	Class performance
4	2	Styles of Educational Administration	Educational Administration and Supervision	lecture	Class performance
5	2	Leadership: Its Concept and Evolution	Educational Administration and Supervision	lecture	Class performance
6	2	Key Leadership Theories	Educational Administration and Supervision	lecture	Class performance
7	2	The first-month exam			
8	2	Key Leadership Theories	Educational Administration and Supervision	lecture	Class performance
9	2	Some Leadership Behavior Models, Their Concepts, and Types	Educational Administration and Supervision	lecture	Class performance

10	2	Educational Supervision and Its Development	Educational Administration and Supervision	lecture	Class performance
11	2	Types and Methods of Educational Supervision	Educational Administration and Supervision	lecture	Class performance
12	2	Evaluation in Educational Supervision	Educational Administration and Supervision	lecture	Class performance
13	2	Evaluation of the Principal, Teacher, and Students	Educational Administration and Supervision	lecture	Class performance
14	2	Final review			
15		The Second-month exam			

11. Course Evaluation
Students are assessed during the semester based on the following criteria: First-month exam: 20% Second-month exam: 20% Daily exams, attendance, and participation: 15% (The semester's grade is now out of 40) Final exam: 60% Final grade: 100%

12. Learning and Teaching Resources	
	1_ Educational Administration: Its Concept, Theories, and Methods. Dr. Salah Abdel Hamid Mustafa, Dr. Najat Abdullah Al-Nabih.

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

Course Description Form

1. Course Name:
Developmental Psychology
2. Course Code:
3. Semester / Year:
The First Semester/
4. Description Preparation Date:
10/11/2025
5. Available Attendance Forms:
In-person (Weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher :Dr. Ali Olaij Khudhur Email: dr.ali7763@tu.edu.iq
8. Course Objectives

Course Objectives	. Learn about the subject of developmental psychology and what it contains in its folds of important educational and psychological aspects and foundations for learners who will become teachers in the near future. Learn about the great importance of the subject of developmental psychology for the teacher in his dealings with students in the primary stage. Enabling the learner to identify the stages of development and the problems he suffers from in a scientific manner. Helps the teacher diagnose the strengths and weaknesses in the learners' personality and address them.

9. Teaching and Learning Strategies	
Strategy	_ Presenting many theories of growth and some of the problems that children and adolescents suffer from, models and guidance methods for dealing with these psychological and academic problems. _ Providing motivation and psychological motivation for students.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
October- 2	3	Introduction to Psychology	developmental psychology	lecture	Class performance
October- 3	3	Definition of Psychology and its Objectives	developmental psychology	lecture	Class performance
October- 4	3	Schools of Psychology	developmental psychology	lecture	Class performance
November -1	3	Definitions in Developmental Psychology Laws of Developmental Psychology	developmental psychology	lecture	Class performance
November -2	3	Developmental Theories First: Mental and Cognitive Development (Piagetian Theory)	developmental psychology	lecture	Class performance
November -3	3	Second: Moral Development (Kohlberg's Theory)	developmental psychology	lecture	Class performance
November -4	3	Third: Social Development (Erikson's Theory)	developmental psychology	lecture	Class performance
January - 1	3	Physical Growth and Emotional Growth	developmental psychology	lecture	Class performance
January - 2	3	**The first-month exam**			
January - 3	3	Some Childhood Problems First - Slow Learning	developmental psychology	lecture	Class performance
January -4	3	Digital Addiction and Digital Addiction in	developmental psychology	lecture	Class performance

		Children			
February-1	3	_Some Adolescence Problems: First - Identity Achievement and Its Crisis	developmental psychology	lecture	Class performance
February-2	3	Second - Dangers of Drug Addiction	developmental psychology	lecture	Class performance
February-3	3	**The Second-month exam**			

11. Course Evaluation
Students are assessed during the semester based on the following criteria: First-month exam: 20% Second-month exam: 20% Daily exams, attendance, and participation: 15% (The semester's grade is now out of 40) Final exam: 60% Final grade: 100%

12. Learning and Teaching Resources	
	_ Developmental Psychology / Dr. Adel Ezz El-Din Al-Ashwal, Anglo-Egyptian Library, 1998 2_ Introduction to Developmental Psychology / Dr. Abbas Mahmoud Awad, Dar Al-Ma'rifah Al-Jami'ah, Suez, 1999.
	_ Developmental Psychology / Dr. Adel Ezz El-Din Al-Ashwal, Anglo-Egyptian Library, 1998 2_ Introduction to Developmental Psychology / Dr. Abbas Mahmoud Awad, Dar Al-Ma'rifah Al-Jami'ah, Suez, 1999.

Course Description Form

1. Course Name:

Curricula and Textbooks.

2. Course Code:

Curricula and Textbooks (Theoretical).

3. Semester / Year:

Second Semester / Third Stage / 2025–2026

4. Description Preparation Date:

2026/01/11

5. Available Attendance Forms:

In-person (Weekly).

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

45 hours, (2) Units.

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

Name: Assistant teacher Layth Jamal Khalaf
Email: layth.j.khalaf@tu.edu.iq

8. Course Objectives

Course Objectives	• Identify the concept, characteristics, and importance of the curriculum, including contemporary trends. • Understand the foundations of the curriculum (Philosophical, Psychological, and Social foundations). • Identify curriculum elements (Educational goals and instructional content). • Recognize types of curricula (Separate subjects, Correlated subjects, Core curriculum, and Activity curriculum). • Understand curriculum evaluation: concepts, goals, criteria, and steps. • Understand curriculum development: concepts, motives, principles, and basic models. • Identify the concept and importance of the textbook. • Distinguish between printed (paper) books and electronic books. • Learn about textbook evaluation and development.

9. Teaching and Learning Strategies

Strategy	Utilizing diverse teaching methods, including: Lecture method, Discussion method, Problem-solving method, Cooperative learning, Modern active learning strategies.

10. Course Structure

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

Fourth week of September	3	Concept of Curriculum	Concept, characteristics, importance, and contemporary trends.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of October	3	Curriculum Foundations1	Philosophical foundation: Idealism, Realism, Pragmatism.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of October	3	Curriculum Foundations 2	Psychological and Socio-cultural foundations: Culture components.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of October	3	Curriculum Elements 1	Educational goals: Sources and types.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of October	3	Curriculum Elements 2	Content: Knowledge structure, standards, and methods.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of October	3	Types of Curricula 1	Subject-matter curriculum: Characteristics, pros, and cons.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of November	3	The first-month exam			
Second week of November	3	Types of Curricula 2	Core and Activity curricula: Characteristics, pros, and cons.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments

Third week of November	3	Curriculum Evaluation	Concept, goals, criteria, and steps of evaluation.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of November	3	Curriculum Development	Concept, motives, principles, and basic models.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of November	3	The Textbook	Concept, importance, and authorship methods.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of December	3	Paper vs. Electronic Books	Concepts and importance of paper and e-books.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of December	3	Textbook Evaluation	Evaluation methods, steps, and development principles.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of December	3	The Second-month exam			
Fourth week of December	3	General review of the prescribed curriculum		• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams

11. Course Evaluation	
"Students are assessed during the semester according to the following criteria: First-month exam: 15% Second-month exam: 15% Daily exams, attendance, and participation: 10% (The annual grade is now out of 40) Final exam: 60% Final grade: 100%"	
12. Learning and Teaching Resources	
Required Textbooks (Methodology, if available)	1. Ibrahim, Fadel Khalil (2011). ***Basics in School Curricula***. 2. Al-Tamimi, Raed Ramthan Hussein (2018). ***Curricula and Textbooks*.**
Primary References (Sources)	Al-Jabri, Kadhim Karim (2011). **The Curriculum and the Textbook**
Recommended Supplementary Books and References (Scientific Journals, Reports, etc.)	**1.** Al-Sirr, Khalid Khamis (2018). ***Basics of Educational Curricula*.** 2. Mustafa, Salah Abdel-Hamid (2000). ***School Curricula: Foundations and Application*.**
Electronic References, Internet Websites	Websites related to specialized topics from Google search, Google Scholar, Wikipedia: Google Search: Link to Google Search Google Scholar: Link to Google Scholar Wikipedia: Link to Wikipedia

Course Description Form

1. Course Name:

Curricula and Textbooks.

2. Course Code:

Curricula and Textbooks (Theoretical).

3. Semester / Year:

First Semester/ Second Stage / 2025–2026

4. Description Preparation Date:

2026/09/1

5. Available Attendance Forms:

In-person (Weekly).

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

45 hours, (2) Units.

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

Name: Assistant teacher Layth Jamal Khalaf
Email: layth.j.khalaf@tu.edu.iq

8. Course Objectives

Course Objectives	• Identify the concept, characteristics, and importance of the curriculum, including contemporary trends. • Understand the foundations of the curriculum (Philosophical, Psychological, and Social foundations). • Identify curriculum elements (Educational goals and instructional content). • Recognize types of curricula (Separate subjects, Correlated subjects, Core curriculum, and Activity curriculum). • Understand curriculum evaluation: concepts, goals, criteria, and steps. • Understand curriculum development: concepts, motives, principles, and basic models. • Identify the concept and importance of the textbook. • Distinguish between printed (paper) books and electronic books. • Learn about textbook evaluation and development.

9. Teaching and Learning Strategies

Strategy	Utilizing diverse teaching methods, including: Lecture method, Discussion method, Problem-solving method, Cooperative learning, Modern active learning strategies.

10. Course Structure

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

Fourth week of September	3	Concept of Curriculum	Concept, characteristics, importance, and contemporary trends.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of October	3	Curriculum Foundations1	Philosophical foundation: Idealism, Realism, Pragmatism.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of October	3	Curriculum Foundations 2	Psychological and Socio-cultural foundations: Culture components.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of October	3	Curriculum Elements 1	Educational goals: Sources and types.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of October	3	Curriculum Elements 2	Content: Knowledge structure, standards, and methods.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of October	3	Types of Curricula 1	Subject-matter curriculum: Characteristics, pros, and cons.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of November	3	The first-month exam			
Second week of November	3	Types of Curricula 2	Core and Activity curricula: Characteristics, pros, and cons.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments

Third week of November	3	Curriculum Evaluation	Concept, goals, criteria, and steps of evaluation.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of November	3	Curriculum Development	Concept, motives, principles, and basic models.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of November	3	The Textbook	Concept, importance, and authorship methods.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of December	3	Paper vs. Electronic Books	Concepts and importance of paper and e-books.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of December	3	Textbook Evaluation	Evaluation methods, steps, and development principles.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of December	3	The Second-month exam			
Fourth week of December	3	General review of the prescribed curriculum		• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams

11. Course Evaluation	
"Students are assessed during the semester according to the following criteria: First-month exam: 15% Second-month exam: 15% Daily exams, attendance, and participation: 10% (The annual grade is now out of 40) Final exam: 60% Final grade: 100%"	
12. Learning and Teaching Resources	
Required Textbooks (Methodology, if available)	1. Ibrahim, Fadel Khalil (2011). ***Basics in School Curricula***. 2. Al-Tamimi, Raed Ramthan Hussein (2018). ***Curricula and Textbooks*.**
Primary References (Sources)	Al-Jabri, Kadhim Karim (2011). **The Curriculum and the Textbook**
Recommended Supplementary Books and References (Scientific Journals, Reports, etc.)	**1.** Al-Sirr, Khalid Khamis (2018). ***Basics of Educational Curricula*.** 2. Mustafa, Salah Abdel-Hamid (2000). ***School Curricula: Foundations and Application*.**
Electronic References, Internet Websites	Websites related to specialized topics from Google search, Google Scholar, Wikipedia: Google Search: Link to Google Search Google Scholar: Link to Google Scholar Wikipedia: Link to Wikipedia

Course Description Form

1. Course Name:
General teaching methods
2. Course Code:
Theoretical General teaching methods
3. Semester / Year:
First semester/ third stage/ 2026_2025
4. Description Preparation Date:
2025/9 / 1
5. Available Attendance Forms:
In-person (Weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
45 hours, (3) Units
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Layth Jamal Khalaf Email: layth.j.khalaf@tu.edu.iq
8. Course Objectives

Course Objectives	•Understanding the concept of teaching, its elements, terminology, and the classification of teaching methods. • Understanding the concept of effective teaching, its dimensions, components, and the characteristics of an effective teacher. • Identify the concept of the automatic method, its conditions, steps and types. • Identify the concept of the interrogation method, its conditions, types, pros and cons. • Identify the concept of the method of discussion, its conditions, types and steps. • Identify the concept of the discovery method, its types, steps and advantages. • Recognize the concept, steps, and justifications of the Flipped Learning Method. • Familiarize yourself with the concept, steps, and features of the collaborative learning method. • Identify the concept of the brainstorming method, its forms, stages and obstacles. • Identify the concept of role-playing, peer teaching, and differentiated teaching.
9. Teaching and Learning Strategies	
Strategy	Utilizing diverse teaching methods, including: Lecture method, Discussion method, Problem-solving method, Cooperative learning, Modern active learning strategies.

10. Course Structure

Week	Hours	Unit or subject	Required Learning Outcomes	Learning method	Evaluation method
Fourth week of September	3	Teaching1	The concept of teaching, its elements.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of October	3	Teaching2	Effective Teaching: Concept, Dimensions, Components, and the Effective Teacher's Roles.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of October	3	Directive method	The concept of the method, conditions, steps, types, advantages, disadvantages.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of October	3	Interrogative method	The concept of the method, conditions, importance, types, positives, negatives.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of October	3	Discussion method	The concept of the method, conditions, types, steps, advantages, disadvantages.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of October	3	Discovery method	The concept of the method, types, steps, advantages, disadvantages.	• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of November	3	The first-month exam			

Second week of November	3	Flipped learning method	Method concept, principles, steps, justifications, teacher's role, learner's role.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of November	3	Cooperative learning method	Method concept, principles, steps, advantages, difficulties.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fourth week of November	3	Role playing method.	Method concept, patterns, steps, advantages, elements.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Fifth week of November	3	Peer teaching method.	Method concept, types, conditions, steps, benefits, obstacles.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
First week of December	3	Brainstorming method.	Method concept, principles, forms, stages, advantages, obstacles.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Second week of December	3	Differentiated teaching method.	Method concept, forms, fields, steps, importance, justifications.	Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
Third week of December	3	The Second-month exam			
Fourth week of December	3	General review of the prescribed curriculum		• Paper lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams

11. Course Evaluation	
"Students are assessed during the semester according to the following criteria: First-month exam: 15% Second-month exam: 15% Daily exams, attendance, and participation: 10% (The annual grade is now out of 40) Final exam: 60% Final grade: 100%"	
12. Learning and Teaching Resources	
Required Textbooks (Methodology, if available)	1. Ibrahim, Fadel Khalil. (2010). Introduction to General Teaching Methods. 2. Saada, Jawdat Ahmed. (2018). General Teaching Methods and Their Educational Applications.
Primary References (Sources)	Abdel-Azim, Sabry Abdel-Azim. (2015). General teaching strategies and methods.
Recommended Supplementary Books and References (Scientific Journals, Reports, etc.)	Salim Ibrahim Al Khazraji. (2011). "Contemporary Methods in Teaching Science." Mohamed Nagib Mustafa. (2006). "Teaching Methods in Science: Between Theory and Application."
Electronic References, Internet Websites	Websites related to specialized topics from Google search, Google Scholar, Wikipedia: Google Search: Link to Google Search Google Scholar: Link to Google Scholar Wikipedia: Link to Wikipedia

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

2026-2025

Course Description Form

1. Course Name:
Computer
2. Course Code:
Without
3. Semester / Year:
Course system/ First Semester /2025-2026
4. Description Preparation Date:
25/1/2026
5. Available Attendance Forms:
Face to Face (compulsory)
6. Number of Credit Hours (Total) / Number of Units (Total)
45
7. Course administrator's name (mention all, if more than one name)
Name: Hamad Abed Mustafa Email: hamad.abd@tu,.edu.iq Name: Sultan Jawhar Dakheel Email: sultan.aljawhar@tu.edu.iq ....

8. Course Objectives	
Course Objectives	This course aims to 1- Understanding the fundamentals of computers and artificial intelligence 2- Understanding the material read and creating a connection between its various components 3- Increasing the awareness of second-year students about artificial intelligence and how to use it. 4- Understanding the components and features of artificial intelligence 5- Graduating highly educated, qualified, and distinguished personnel

9. Teaching and Learning Strategies	
Strategy	1- Method of giving lectures 2- Discussion method 3- Reports and research 4- Wall flyers

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction	The concept of networks, their types, and their components	Lectures and discussion	Exams and class assignments
2	3	Chapter One	Network threats and understanding network errors	Lectures and discussion	Exams and class assignments
3	3	Chapter One	The concept of electronic commerce	Lectures and discussion	Exams and class assignments
4	3	Chapter Two	Electronic banking and its associated devices	Lectures and discussion	Exams and class assignments
5	3	EXAM1	EXAM1		
6	3	Chapter Three	Troubleshooting computer problems and how to fix them	Lectures and discussion	Exams and class assignments
7	3	Chapter Three	artificial intelligence	Lectures and discussion	Exams and class assignments
8	3	Chapter Four	Artificial intelligence technologies	Lectures and discussion	Exams and class assignments
9	3	Chapter Five	Artificial intelligence and society	Lectures and discussion	Exams and class assignments
10	3	EXAM2	EXAM2		
11	3	Chapter six	Artificial intelligence in our daily lives	Lectures and discussion	Exams and class assignments
12	3	Chapter seven	Uses of artificial intelligence	Lectures and discussion	Exams and class assignments
13	3	Chapter eight	Artificial intelligence and the future of humanity	Lectures and discussion	Exams and class assignments
14	3	Chapter nine	Ethical challenges of artificial intelligence	Lectures and discussion	Exams and class assignments
15	3		The future of artificial intelligence	Lectures and discussion	Exams and class assignments

11. course Evaluation	
daily The grade is distributed out of 40% according to the tasks assigned to the student, such as preparation, daily and monthly exams, written exams, reports, etc	
12.Learning and Teaching Resoures	
uired textbooks (curricular Books, if any	Archived lectures by subject-matter instructors for each subject, whether in print or video format.
n references (sources)	
ommended Books and references (scientific journais, reports…)	Archived lectures by the specialized instructors for each
tronic References ,Websites	

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

2026 - 2025

Course Description Form

1. Course Name:
Ethics of the teaching profession
2. Course Code:
3. Semester / Year:
Course system/ First Semester /2025-2026
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
Face to Face (compulsory)
6. Number of Credit Hours (Total) / Number of Units (Total)
30
7. Course administrator's name (mention all, if more than one name)
Name: Hamad Abed Mustafa Email: hamad.abd@tu,.edu.iq

8. Course Objectives	
Course Objectives	**This course aims to:** **1 - Understand the basics of teaching ethics** **2 - Understand the reading material and create a connection between its various components** **3- Increase the awareness of fourth-stage students of the laws of job discipline** **4- Understand the duties of the teacher and what his goals and advantages are** **5- Graduate cadres with a high degree of education, qualification and excellence**

9. Teaching and Learning Strategies	
Strategy	1- Method of giving lectures 2- Discussion method 3- Reports and research 4- Wall flyers

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to Professional Ethics	Introduction	Lectures and discussion	Exams and class assignments
2	2	The concept of professional ethics	Chapter One	Lectures and discussion	Exams and class assignments
3	2	The importance and benefits of teaching ethics	Chapter One	Lectures and discussion	Exams and class assignments
4	2	Principles and sources of ethics of the teaching profession	Chapter Two	Lectures and discussion	Exams and class assignments
5	2		**EXAM1**		
6	2	Teacher characteristics/effects of unethical behavior	Chapter Three	Lectures and discussion	Exams and class assignments
7	2	The concept of job discipline	Chapter Three	Lectures and discussion	Exams and class assignments
8	2	Factors of social responsibility development	Chapter Four	Lectures and discussion	Exams and class assignments
9	2	Some unethical phenomena in the teaching profession/cheating	Chapter Five	Lectures and discussion	Exams and class assignments
10	2		**EXAM2**		
11	2	Reasons for cheating in exams	Chapter six	Lectures and discussion	Exams and class assignments
12	2	The concept of bribery, its models and effects	Chapter seven	Lectures and discussion	Exams and class assignments
13	2	Long term effects of bribery	Chapter eight	Lectures and discussion	Exams and class assignments
14	2	Burnout and its causes	Chapter nine	Lectures and discussion	Exams and class assignments
15	2	routine work		Lectures and discussion	Exams and class assignments

11. course Evaluation

daily The grade is distributed out of 40% according to the tasks assigned to the student, such as preparation, daily and monthly exams, written exams, reports, etc

12.Learning and Teaching Resoures	
Required textbooks (curricular Books,if any	
Main references (sources)	Archived lectures by the specialized instructors for each
Recommended Books and references (scientific journais, reports…)	
Electronic References ,Websites	

Course Description Form

1- Course Name
entomology
2-CourseCode
Entomology (Theoretical)
3-semester/ year
Chapter two
4. Date of preparation of this description
25/01/2026
5. Available Attendance Forms
In-person (Weekly)
6. Number of study hours (total) / number of units (total)
|||UNTRANSLATED_CONTENT_START|||30 ساعة|||UNTRANSLATED_CONTENT_END|||
7. Name of Course Administrator
Name: M. Fatima Abdelkader Mohamed Email: fatema.a.mahaed@tu.edu.iq
8. Course Objectives

Objectives of the course :	• Definition of entomology, including its types. • Statement of the components of her body. • Identify the types of tentacles, wings and legs. • Identify insect-borne diseases. • To know the composition of the insect. • Draws the structure of the insect's body
TEACHING AND LEARNING STRATEGIES	
STRATEGY	Use a variety of teaching methods, including: lecture method/discussion method/problem-solving method.

10. Course Structure

Week	Hours	Unit or Topic Name	Learning	Learning

			outcomes required for the program*	method
CANON	2	Entomogenesis theories	The head, the types of tentacles, the compound and the simple eye.	Paper lecture Display screen Blackboard
February	2	Factors that helped insects spread.	Types of parts of the mouth, the direction of the organs of the mouth with the head in relation to the longitudinal axis of the body in insects.	Paper lecture Display screen Blackboard
February	2	Insect Body Wall	Wings, sweating in the wing, types of wing mutations.	Paper lecture Display screen Blackboard
February	2	Head and appendages	The abdomen, the posterior limb of the male and female in the American cockroach, the egg-laying machine in the ranks, the membranes of the wings, the anal differences in insects, the respiratory openings.	Paper lecture Display screen Blackboard
February	2	|||UNTRANSLATED_CONTENT_START|||التحول |||UNTRANSLATED_CONTENT_END|||	Insect transformation:	Paper lecture Display screen

			types of eggs, types of larvae in insects, types of transformation.	Blackboard
March	2	Chest and its parts and appendages	The abdomen, the posterior limb of the male and female in the American cockroach, the egg-laying machine in the ranks, the membranes of the wings, the anal differences in insects, the respiratory openings.	Paper lecture Display screen Blackboard
March	2	First Month		
March	2	The ventricle and its parts	Term	Paper lecture Display screen Blackboard
March	2	Mobility	Classification of insects (use of keys to isolate insect ranks).	Paper lecture Display screen Blackboard
March	2	Proliferative system	Concept and types.	Paper lecture Display screen Blackboard
April	2	Genitalia (male and female)	The abdomen, the posterior limb of the male and	Paper lecture Display screen Blackboard

			female in the American cockroach, the egg-laying machine in the ranks, the membranes of the wings, the anal differences in insects, the respiratory openings.	
April	2	Reduced insect infestation		Paper lecture Display screen Blackboard
April	2	Insect Damage and Benefits		Paper lecture Display screen Blackboard
April	2	Second month		
أيار	2	General review of the planned curriculum		Paper lecture Display screen Blackboard

Course##$_0A$##Evaluation

Students are evaluated during the semester according to the following principles:

- Examination of the first month of 10/ Examination of the second month of 10/Daily exam and attendance and participation of 10
- (The pursuit of the theoretical aspect of 30 and the practical aspect of 10 became the annual pursuit of 40)
- final examination
- Final Grade

12. Learning and Teaching Resources

Required textbooks (methodology if any)	Nizar Mustafa Al-Mallah ,(2016), Classification of theoretical and practical insects. Ibn Al-Athir Printing and Publishing House.
Key References (Sources)	Ashraf Kaddah , (2009), Insect Secrets.
Recommended supporting books and references (scientific journals, reports…)	Ramadan Abdelkader Salma ,(2014), Economic Insects.
E-References, Websites	Specialist topic websites from Google search, Google Scholar, Wikipedia.

Course Description Form

1. Course Name:
Endocrine physiology
2. Course Code:
3. Semester / Year:
First semester year 2024-2025
4. Description Preparation Date:
2025/9/1
5. Available Attendance Forms:
In attendance (weekly)
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: Dr. Mohanad Mahdi Jumaa Jandal Email: mohanad.m.jumaa91@tu.edu.iq
8. Course Objectives

Course Objectives	1. The student will be familiar with the term endocrine physiology and the mechanisms of hormonal regulation 2. The student will be familiar with the mechanism of hormone action 3. The student will be familiar with the main endocrine glands and their functions 4. Enabling the student to identify the interaction between the endocrine system and the nervous system 5. The student will be familiar with hormonal diseases and disorders

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 2 Novembe	2	Introduction to endocrine glands,	Endocrine glands	Paper lecture Display	Daily and monthly

r		prominent scientists, hormonal regulation		Screen Blackboard and pen	exams, homework
Week 3 November	2	Examples of hormonal regulation, types of hormonal secretions, examples of hormones and their effects	Hormonal regulation, hormonal secretions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4	2	Negative feedback, mechanism of action, and examples of hormone	Control of hormone secretions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
November	2	Positive feedback, mechanism of action, and examples of hormone	Control of hormone secretions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 December	2	Introduction to it, target organs, parts of the pituitary gland, pituitary hormones	Pituitary gland	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2	2	First-month exam			
December	2	Pituitary Disorders	Pituitary gland	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 December	2	Overview, Thyroid Hormones, How the Body Regulates Thyroid Hormones, Thyroid Disorders	Thyroid gland	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 December	2	Overview, How Parathyroid Hormone Works, Parathyroid Dysfunction	Parathyroid gland	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 5 December	2	Pancreas Anatomy, Pancreas Functions, Pancreas Related Diseases, Diagnosis of Pancreatic Diseases	Pancreas	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 January	2	The Three Hormones Secreted by the	Pancreas	Paper lecture Display	Daily and monthly

		Pancreas, How Insulin and Glucagon Affect the Metabolism of Carbohydrates, Proteins, and Fats		Screen Blackboard and pen	exams, homework
Week 2 January	2	Second month exam			
Week 3 January	2	Overview, Functions, Adrenal Gland Disorders, Types of Reproductive	Adrenal gland	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 January	2	Hormones, Disorders Associated with Reproductive Hormones	Reproductive hormones	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

11. Course Evaluation

Students are evaluated during the semester according to the following principles:

- First-month exam from 15 / Second-month exam from 15 / Daily exam, attendance and participation from 20
- (Theoretical pursuit of 40) Pursuit of 40
- Final exam of 60
- Final score out of 100

12. Learning and teaching resources

Required textbooks (methodology, if any)	Endocrine Glands and Their Hormones** Written by Dr. Mohamed El-Sayed Ali Physiology of the Endocrine Glands
Primary references (sources)	Endocrine Physiology"** by Patricia E. Molina Greenspan's Basic & Clinical Endocrinology"** by David G. Gardner and Dolores Shoback Vander's Human Physiology: The Mechanisms of Body Function"** by Eric Widmaier, Hershel Raff, and Kevin Strang
Recommended supporting books and references (scientific journals, reports...)	Scientific journals of endocrine physiology

Course Description Form

1. Course Name
Plant Physiology
2. Course Code
Endocrine Physiology (Theoretical)
3. Semester / Year
Second Semester, Academic Year 2025–2026
4. Date of Preparation of this Description
11/1/2026
5. Available Attendance Forms
In-person (weekly)
6. Total Study Hours / Total Units
30 hours
7. Course Coordinator
Name: Asst. Prof. Mohanad Mahdi Jumaa Jandal Email: mohanad.m.jumaa91@tu.edu.iq Name: Kholoud Omar Abdullah Email: khluood.om@tu.edu.iq
8. Course Objectives

Course Objectives	1. To introduce the fundamental concepts of plant physiology and its vital functions. 2. To understand the mechanisms of water and nutrient absorption and their transport within plants. 3. To study vital processes such as photosynthesis, respiration, and transpiration. 4. To explain the role of environmental factors in plant growth and development. 5. To develop the ability to link physiological processes with agricultural and environmental applications.

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

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

Week 1 February	2c 2p	To provide a precise scientific definition of plant physiology and understand its importance in explaining the vital functions of plants such as growth, metabolism, and reproduction, while distinguishing it from other branches of plant science, and linking its theoretical concepts to practical applications in agriculture and environmental fields.	Definition of plant physiology and the fundamental principles of this science	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 February	2c 2p	The student should be able to distinguish between solutions and colloidal systems in terms of composition and properties, and understand their role in biological systems within the cell.	Solutions and colloidal systems	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 February	2c 2p	The student should be able to explain the movement of water in plants based on concepts such as osmosis and water potential, and recognize its importance for plant survival.	Water relations	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 February	2c 2p	The student should be able to describe the mechanisms of water and mineral uptake from the soil and their transport within the plant through conducting tissues.	Absorption and transport of water and mineral elements	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 March	2c 2p	The student should be able to explain the process of photosynthesis, its stages, influencing factors, and its importance in food production in plants.	Photosynthesis (carbon fixation)	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 March	2	First-month exam			
Week 3	2c	The student should be	Respiration	Paper lecture	Daily and

March	2p	able to explain the process of respiration in plants, its stages, and its importance in energy production.		Display Screen Blackboard and pen	monthly exams, homework
Week 4 March	2c 2p	The student should be able to distinguish between anabolic and catabolic processes and understand the role of anabolism in the synthesis of organic compounds.	Metabolism (anabolism)	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week March 5	2c 2p	The student should be able to describe the mechanism of nitrogen fixation, its importance for plants, and the role of microorganisms in this process.	Biological nitrogen fixation	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 April	2c 2p	The student should be able to explain how plants obtain mineral nutrients and their importance in growth and physiological processes.	Plant nutrition	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 April	2c 2p	The student should be able to describe the stages of plant growth and the factors affecting plant development and growth processes.	Growth and development	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 April	2	Second month exam			
Week 4 April	2c 2p	The student should be able to describe the types of plant hormones, their functions, and their role in regulating plant growth and development.	Plant hormones and growth regulators	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 May	2c 2p	The student should be able to explain plant responses to severe environmental conditions and their effects on physiological processes.	Crop physiology under stress	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 May	2c 2p	The student should be able to distinguish between biotic and abiotic stress, explain	Types of stress – effects of stress – mechanisms of stress tolerance	Paper lecture Display Screen Blackboard	Daily and monthly exams, homework

		their effects on plants, and describe the adaptation and tolerance mechanisms plants use for survival.		and pen	

11. Course Evaluation	
Students are evaluated during the semester according to the following criteria: First monthly exam: /10 Second monthly exam: /10 Daily exam, attendance, and participation: /10 Theoretical coursework (continuous assessment): 30 Practical coursework (continuous assessment): 10 Total continuous assessment: 40 Final exam: 60 Total final grade: 100	
12. Learning and teaching resources	
Required textbooks (methodology, if any)	Fundamentals of Plant Physiology / 1989 – Abdul Azim Mohammed
Primary references (sources)	Fundamentals of Plant Physiology / 1989 – Abdul Azim Mohammed Crop Plant Physiology (translated by Dr. Talib Ahmed Isa) / 1990 Fundamentals of Plant Physiology / 2001 – Bassam Taha Yassin The Modern Method of Plant Physiology / 2010 Scientific Principles of Field Crop Management, Production and Improvement / 2018 – Iyad Hussein Al-Muaini & Mohammed Owaid Ghadir Introduction to Plant Physiology / 2008 Physicochemical and Environmental Plant Physiology / 2009
Recommended supporting books and references (scientific journals, reports...)	Scientific journals of plant physiology

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

2026

Course Description Form

1. Course Name:
Practical cell science
2. Course Code:
3. Semester / Year:
Course system/first semester
4. Description Preparation Date:
2025/9/12
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Abdulmunem K. Abdullah Email: Abdulmu.k019@tu.edu.iq
8. Course Objectives

Course Objectives	1. Identify living cells and their basic components. 2. Identify the devices by which cells can be studied. 3. Identify histological techniques and the method of using histological stains. 4. Identify some of the basic parts of the nucleus and wall through a practical experiment. 5. Identify non-living components of individual crystals and needles through practical experiments. 6. Identify guard cells and stomata through a practical experiment.

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 3 Septemb	2	The cell and its	Introduction to cell	Paper lecture Display	Daily and monthly

er		components	science, types of cells, their components	Screen Blackboard and pen	exams, homework
Week 4 September	2	microscope	Microscope, its components, how to use and maintain it.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 October	2	Tissue preparations, preservation and fixation methods	Purpose of the experiment, theory of the experiment To identify methods of preparation and preservation of different types of tissues	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 October	2	View the cell and some of its components	An experiment using onion plants to observe the cell wall, nucleus, and vacuole.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 October	2	Blood smear method	The purpose of the experiment is to identify cell shapes using Lechman stain.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 October	2	First-month exam			
Week 1 November	2	Single crystal viewing experience	Introduction, the purpose of the experiment is to identify non-living components using	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

			onion plants.		
Week 2 November	2	Single crystal viewing experience	Introduction, the purpose of the experiment is to identify non-living components using onion plants.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 November	2	Single crystal viewing experience	Introduction, the purpose of the experiment is to identify non-living components using onion plants.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 November	2	Single crystal viewing experience	Introduction, the purpose of the experiment is to identify non-living components using onion plants.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 December	2	Single crystal viewing experience	Introduction, the purpose of the experiment is to identify non-living components using onion plants.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 December	2	Second month exam			
Week 3 December	2	Overview, Practical cell science	Practical cell science	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

11. Course Evaluation
Students are evaluated during the semester according to the following principles: - Students are evaluated during the semester according to the following principles: - First month exam from 10 / Second month exam from 10 / Daily exam, attendance and participation from 10 divided by 3 - (Practical pursuit of 10 + theoretical pursuit of 30) Striving of 40 - Final exam of 60 - Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Practical book in plant anatomy/Faculty of Science/Islamic University/Gaza
Primary references (sources)	Histology Dr. Kawakib Abdul Qadir University of Baghdad
Recommended supporting books and references (scientific journals, reports...)	Specialized topic websites from google search

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

2026

Course Description Form

1. Course Name:
Practical histology and embryology
2. Course Code:
3. Semester / Year:
Course system/second semester 2024-2025
4. Description Preparation Date:
2025/1/16
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Assistant teacher Abdulmunem Kurdi Abdullah Email: Abdulmu.k019@tu.edu.iq

8. Course Objectives	
Course Objectives	1. Learn about modern techniques for textile preparations. 2. Learn about methods of obtaining samples. 3. Learn about methods of fixing samples, types of fixatives and their properties. 4. Learn about the steps of textile preparations, such as washing, dewatering, etc. 5. Learn about dyeing methods with practical experiments.

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
the third week February	2	Histological preparations and methods of	Introduction to histology, types of specimens and how	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

		obtaining the sample	to obtain them.		
fourth week February	2	Fixatives and their types	Fixatives, their types, advantages and disadvantages of each one, and how to prepare it.	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
The first week March	2	Washing and dewatering process	Practical experiment illustrating the washing and dewatering process in different ways depending on the type of fixative	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
second week March	2	The process of sieving and viewing ready tissue slides	Experiment with a cooling process	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
the third week March	2	burial and casting process	Experiment with the process of burying, pouring and trimming	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
fourth week March	2	First-month exam			
The first week April	2	Sample cutting and loading of sections	Practical experiment showing how to cut	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
second week April	2	staining	A scientific experiment that explains how to dye and the types of	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

			dyes		
the third week April	2	sustainable conservation	Save Canada Balsam and D.P.X	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
fourth week April	2	View slides	View different types of tissues	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
The first week May	2	View slides	View different types of tissues	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
The second week May	2	Second month exam			
The Third week May	2	Comprehensive review	Comprehensive review	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

`11. Course Evaluation
Students are evaluated during the semester according to the following principles: - Students are evaluated during the semester according to the following principles: - First month exam from 10 / Second month exam from 10 / Daily exam, attendance and participation from 10 divided by 3 - (Practical pursuit of 10 + theoretical pursuit of 30) Striving of 40 - Final exam of 60 - Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Textile Preparations Book Dr. Omar Abdelkader
Primary references (sources)	Textures book by Dr. Kawakib Abdul Qadir, University of Baghdad

Recommended supporting books and references (scientific journals, reports...)	Specialized topic websites from google search

Course Description Form

1. Course Name:
Industrial Chemistry- polymers (Theoretical)
2. Course Code:
3. Semester / Year:
First Semester
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
In-person classroom lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
24 hours
7. Course administrator's name (mention all, if more than one name)
Name: Lecturer Dr. Safaa Hussein Mohammed **Email**: safaa.mohamed@tu.edu.iq
8. Course Objectives

Course Objectives	First Semester:1. To introduce polymers, their types, nomenclature, methods of obtaining them, and differentiating between them.2. Understanding what a polymer is.3. Understanding polymer nomenclature.4. Understanding polymer types.5. Understanding and differentiating between methods of preparing polymers and knowing polymer uses.6. Polymer classification.7. Polymer reactions.8. Polymer applications.

9. Teaching and Learning Strategies

Strategy	Using standard methods (lectures) / discussion method / problem-solving method

10 Course Structure			**First semester**		
Week	**Hours**	**Required Learning Outcomes**	**Unit Or Subject Name**	**Learning Method**	**Evaluation methods**
Week 1 (October)	2	Industrial Chemistry (Polymers)	Polymers, Polymer Classification	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (October)	2	Industrial Chemistry	Polymer Nomenclature	Paper lectures, presentation screen,	Daily exams, monthly exams,

		(Polymers)		whiteboard and pen	homework
Week 3 (October)	2	Industrial Chemistry (Polymers)	Polymer Classification, Source, Type	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 4 (October)	2	Industrial Chemistry (Polymers)	Technological Classification of Polymers	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1 (November)	2	Industrial Chemistry (Polymers)	Classification According to Polymer Structure	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (November)	2	Industrial Chemistry (Polymers)	Classification According to Reactions	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 3 (November)	2	First Semester Exam			
Week 4 (November)	2	Industrial Chemistry (Polymers)	Factors Affecting Polymers, Factors on Which Polymers Depend	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1 (December)	2	Industrial Chemistry (Polymers)	Degree of Crystallinity, Glass Transition Temperature	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (December)	2	Industrial Chemistry (Polymers)	Chain-Growth Polymerization	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 3 (December)	2	Industrial Chemistry (Polymers)	Step-Growth Polymerization	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 4 (December)	2	Industrial Chemistry (Polymers)	Ziegler-Natta Polymerization	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework

11. Course Evaluation	
Students are evaluated during the semester according to the following criteria: First month exam out of 20/ Second month exam out of 20/ Daily exam and attendance and participation out of 20)Theoretical effort out of 30 + practical effort out of 10) effort out of 40 Final exam out of 60 Final grade out of 100	
12. Learning and teaching resources	Book of Chemistry of Macromolecules / Korkis Abdul Al Adam
Required textbooks (methodology if any)	Book of Chemical Industries \ Dr. Ahmed Madhat Islam

Course Description Form

1. Course Name:
Practical industrial chemistry
2. Course Code:

Second level
3. Semester / Year:
Courses system
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
In-person class lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
24 hour
7. Course administrator's name (mention all, if more than one name)
Name: Hamad Farhan Mousa Abdulla Email: hamad.farhan@tu.edu.iq
8. Course Objectives

Course Objectives	**1-** Providing students with scientific and practical skills in how to deal with dangerous and toxic chemicals in laboratory work. **2-** Striving to make students of the College of Basic Education feel the value and importance of organic chemistry, the role of laboratory experiments in science and technology, and how they deal with school students after graduation and practice their specialties as teachers in middle schools and some research laboratories in state departments related to industry and health and in the field of research and development. **3-** Identify the tools, glassware, and devices in the chemical laboratory and how to use each of them. **4-** Identify the basic experiments in inorganic chemistry that are related to the physical properties of organic compounds, such as melting and boiling points. **5-** Learn how sediments separate inorganic compounds and purify them from impurities after their preparation. **6-** Learn about extracting materials from their sources, such as extracting natural products from plants. **7-** Utilizing the student's scientific knowledge in a way that helps him face life problems.

9. Teaching and Learning Strategies	
Strategy	The lecture and discussion method, in addition to all the teaching methods used, such as presentations and laboratory reports, in addition to practical experiments and what was mentioned above.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
October, first week	2	Safety rules and specifications in laboratories	Security and safety in scientific laboratories	Lecture, practical part and discussion	Surprise tests
October, second week	2	How to store chemicals	Chemical laboratory chemistry	Lecture, practical part and discussion	Surprise tests
October third week	2	Deposition of polymers	Experimen Deposition of polymers	Lecture, practical part and discussion	Surprise tests
October, fourth week	2	Solubility of polymers	Experimen Solubility of polymers	Lecture, practical part and discussion	Surprise tests
November , first week	2	Find the molecular weight For polymer	Find the molecular weight For polymer	Lecture, practical part and discussion	Surprise tests
November, second week	2	Combustion of polymers	Combustion of polymers	Lecture, practical part and discussion	Surprise tests
November third week	2	Viscosity of polymers	Viscosity of polymers	Lecture, practical part and discussion	Surprise tests
November , fourth week	2	Destruction of polymers	Destruction of polymers	Lecture, practical part and discussion	Surprise tests

December first week	2	Safety rules and specifications in laboratories	Security and safety in scientific laboratories	Lecture, practical part and discussion	Surprise tests

11. Course Evaluation	
Temporary or sudden daily exams, in addition to monthly exams, attendance, performance in the laboratory, and laboratory reports.	
12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	Book “Industrial chemistry” Tariq Ismael kachia
Main references(sources)	"Fundamentals of Industrial Chemistry: Pharmaceuticals, Polymers, and Business" John A. Tyrell
Recommended books and references (scientific journais, reports…)	"Applied Chemistry: A Textbook for Engineers and Technologists" H.D. Gesser
Electronic references, websites	Google searching for Industrial chemistry

Course Description Form

1. **Course Name:**
Inorganic Chemistry (Theoretical)
2. **Course Code:**
Second Stage
3. **Semester/Year:**
Course System - First Course
4. **Date of Preparation of this Description:**
1 / 9/ 2025
5. **Available Attendance Forms:**
In-person classroom lectures
6. **Number of Study Hours (Total) / Number of Units (Total):**
24 hours
7. **Name of the Course Coordinator** (If more than one name, mention them):
Name: Asst. Prof. Safaa Hussein Mohammed Email: safaa.mohamed@tu.edu.iq
8. **Course Objectives:**

Course Objectives	**Objectives of the Course Material:** • **Atomic Structure and Basic Interactions:** Understanding the basic structure of the atom from components such as protons, neutrons, and electrons, and how these particles were discovered and their properties, such as charge, were determined. This includes understanding Rutherford's theory and the distribution of electrons in shells and how this affects the stability of the atom. • **Chemical Bonds and Molecule Formation:** Understanding how atoms bond together to form molecules through different types of chemical

	bonds (such as ionic and covalent). This includes understanding the overlap of atomic orbitals and their effect on the geometric shape of molecules, and the concept of hybridization and its different types. • **Describing Electron Behavior in the Atom:** Understanding how to describe the behavior of electrons in the atom using quantum numbers, and how these numbers are used to determine the properties of electrons and their distribution in the atom. • **Nuclear Chemistry and Radioactivity:** Understanding the phenomena related to the atomic nucleus, such as radioactivity and its types (such as alpha, beta, and gamma emissions), and the processes of radioactive decay, fission, and nuclear fusion. This includes understanding the types of nuclear reactors and their uses. • **Practical Applications of Radioactive Isotopes:** Understanding how radioactive isotopes are used in various fields such as medicine, industry, and scientific research, and the benefits and challenges associated with these uses..
9. Teaching and Learning Strategies	
Strategy	Using standard methods (lectures) / discussion method / problem-solving method

10.. Course Structure:

Week	Hours	Required Learning Outcomes	Unit/Topic Name	Learning Method	Assessment Method
First Week Oct	2	Inorganic Chemistry	Concept of the Atom and its Components	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Second Week Oct	2	Inorganic Chemistry	Discovery of the Proton and Electron and Determining the Electron Charge	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework

Third Week Oct	2	Inorganic Chemistry	Rutherford's Theory – Filling Electron Shells and their Relationship to Atomic Stability	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Fourth Week Oct	2	Inorganic Chemistry	Chemical Bonding – Types of Bonds	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
First Week Nov	2	Inorganic Chemistry	Quantum Numbers – Examples	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Second Week Nov	2	Inorganic Chemistry	Overlap of Atomic Orbitals and the Geometric Shape of Molecules	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Third Week Nov	2	First Semester Exam			
Fourth Week Nov	2	Inorganic Chemistry	Hybridization – Types – Examples	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
First Week Dec	2	Inorganic Chemistry	Nuclear Chemistry – Radioactivity and Nuclear Reactions – Examples	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Second Week Dec	2	Inorganic Chemistry	Types of Radiation / Radioactive Decay – Emission of Radiation	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Third Week Dec	2	Inorganic Chemistry	Radioactive Decay – Emission of Radiation / Nuclear Fission	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Fourth Week Dec	2	Inorganic Chemistry	Nuclear Reactors – Types – Uses	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
First Week Jan	2	Inorganic Chemistry	Nuclear Fusion	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework
Second Week Jan	2	Inorganic Chemistry	Uses of Radioactive Isotopes	Paper lectures, projector, whiteboard and pen	Daily, monthly exams, homework

11. Course Evaluation	
Students are evaluated during the semester according to the following criteria: First month exam out of 20/ Second month exam out of 20/ Daily exam and attendance and participation out of 20)Theoretical effort out of 30 + practical effort out of 10) effort out of 40 Final exam out of 60 Final grade out of 100	
12. Learning and Teaching Resources:	**Representative Element Chemistry Resources:**
Inorganic Chemistry Resources:	1- Comparative and Structural Inorganic Chemistry, translated by Dr. Mahdi Naji Al-Zakoum
Foundations of Inorganic Chemistry / Author: Prof. Dr. Mohammed Magdy Wassel	2- Chemistry of Representative Elements, Dr. Mahdi Naji Al-Zakoum and Dr. Kadhim Al-Obaidi 3- Basic Inorganic Chemistry (Part 1), translated by Dr. Mahdi Naji Al-Zakoum

Course Description Form

1. Course Name:	
Practical Inorganic chemistry	
2. Course Code:	
Second level	
3. Semester / Year:	
Courses system	
4. Description Preparation Date:	
1 / 9/ 2025	
5. Available Attendance Forms:	
In-person class lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
24 hour	
7. Course administrator's name (mention all, if more than one name)	
Name: Hamad Farhan Mousa Abdulla Email: hamad.farhan@tu.edu.iq	
8. Course Objectives	
Course Objectives	**1-** Providing students with scientific and practical skills in how to deal with dangerous and toxic chemicals in laboratory work. **2-** Striving to make students of the College of Basic Education feel

	the value and importance of organic chemistry, the role of laboratory experiments in science and technology, and how they deal with school students after graduation and practice their specialties as teachers in middle schools and some research laboratories in state departments related to industry and health and in the field of research and development. **3-** Identify the tools, glassware, and devices in the chemical laboratory and how to use each of them. **4-** Identify the basic experiments in inorganic chemistry that are related to the physical properties of organic compounds, such as melting and boiling points. **5-** Learn how sediments separate inorganic compounds and purify them from impurities after their preparation. **6-** Learn about extracting materials from their sources, such as extracting natural products from plants. **7-** Utilizing the student's scientific knowledge in a way that helps him face life problems.

9. Teaching and Learning Strategies

Strategy	The lecture and discussion method, in addition to all the teaching methods used, such as presentations and laboratory reports, in addition to practical experiments and what was mentioned above.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
October, first week	2	Safety rules and specifications in laboratories	Security and safety in scientific laboratories	Lecture, practical part and discussion	Surprise tests
October, second week	2	How to store chemicals	Chemical laboratory chemistry	Lecture, practical part and discussion	Surprise tests
October third week	2	Electronic arrangement	Electronic arrangement	Lecture, practical part and discussion	Surprise tests

October, fourth week	2	Find the course number And the group	Electronic arrangement	Lecture, practical part and discussion	Surprise tests
November, first week	2	Lewis symbol	Electronic arrangement	Lecture, practical part and discussion	Surprise tests
November, second week	2	Periodic table	Periodic table	Lecture, practical part and discussion	Surprise tests
November, third week	2	First month exam	First month exam	Lecture, practical part and discussion	Surprise tests
November, fourth week	2	Chronological order of the table	Chronological order of the table	Lecture, practical part and discussion	Surprise tests
The first week of December	2	Elements of the first group	Elements of the first group	Lecture, practical part and discussion	Surprise tests
December second week	2	Prepare table salt	Experiment Prepare table salt	Lecture, practical part and discussion	Surprise tests
December, third week	2	preparation Fluoride Sodium	Experiment preparation Fluoride Sodium	Lecture, practical part and discussion	Surprise tests

11. Course Evaluation	
Temporary or sudden daily exams, in addition to monthly exams, attendance, performance in the laboratory, and laboratory reports.	
12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	Practical organic chemistry - University of Basra - College of Science - Department of Chemistry
Main references(sources)	Iorganic chemistry book by Dr. Issam Girgis Salloum
Recommended books and references (scientific journais, reports…)	"Inorganic Chemistry " J. E. Huheey
Electronic references, websites	Google searching for Inorganic chemistry

Course Description Form

1. Course Name:	
Industrial Chemistry- Petrochemicals (Theoretical)	
2. Course Code:	
3. Semester / Year:	
Second Semester	
4. Description Preparation Date:	
11 / 1 / 2026	
5. Available Attendance Forms:	
In-person classroom lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
24 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Lecturer Dr. Safaa Hussein Mohammed **Email**: safaa.mohamed@tu.edu.iq	
8. Course Objectives	
Course Objectives	Second Semester:1. To study the primary raw materials of petrochemicals, natural gas, and manufactured gas.2. To study petrochemicals produced from paraffin, petrochemicals produced from olefins, butadiene, acetylene, and materials manufactured from (BTX).3. Student's knowledge of the primary raw materials of petrochemicals.4. Knowledge of natural gas and manufactured gas and distinguishing between them.5. Knowledge of petrochemicals produced from paraffins.6. Knowledge of important productive industries in various industrial fields.
9. Teaching and Learning Strategies	
Strategy	Using standard methods (lectures) / discussion method / problem-solving method

10 Course Structure		Second Semester			
Week	**Hours**	**Required learning outcomes**	**Unit Or Subject Name**	**Learning methods**	**Evaluation methods**
Week 4 (January)	2	Industrial Chemistry (Petrochemicals)	Petrochemicals, Industrial Processes, Oil: Definition, Origin, and Sources	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1 (February)	2	Industrial Chemistry (Petrochemicals)	Iraqi Oil Fields, Crude Oil Composition	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (February)	2	Industrial Chemistry (Petrochemicals)	Crude Oil Classification, Crude Oil Extraction Methods	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 3 (February)	2	Industrial Chemistry (Petrochemicals)	Crude Oil Feedstocks, Economic Importance of Oil and Gas	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 4 (February)	2	Industrial Chemistry (Petrochemicals)	Gas Extraction, Gas Composition and Sources	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1 (March)	2	Industrial Chemistry (Petrochemicals)	Fractional Distillation of Oil, Refining, Separation	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (March)	2	Second Semester Exam			
Week 3 (March)	2	Industrial Chemistry (Petrochemicals)	Physical and Chemical Properties of Crude Oil, Purification, Chemical Processes Affecting Crude Oil	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 4 (March)	2	Industrial Chemistry (Petrochemicals)	Soap Manufacturing	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1	2	Industrial	Fertilizer Manufacturing	Paper lectures,	Daily exams,

(April)		Chemistry (Petrochemicals)		presentation screen, whiteboard and pen	monthly exams, homework
Week 2 (April)	2	Industrial Chemistry (Petrochemicals)	Cement Manufacturing	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 3 (April)	2	Industrial Chemistry (Petrochemicals)	Paper Manufacturing	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 4 (April)	2	Industrial Chemistry (Petrochemicals)	Sugar Manufacturing	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 1 (May)	2	Industrial Chemistry (Petrochemicals)	Hydrogen Production	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework
Week 2 (May)	2	Industrial Chemistry (Petrochemicals)	Methanol and Ethanol Production	Paper lectures, presentation screen, whiteboard and pen	Daily exams, monthly exams, homework

11. Course Evaluation	
Students are evaluated during the semester according to the following criteria: First month exam out of 20/ Second month exam out of 20/ Daily exam and attendance and participation out of 20)Theoretical effort out of 30 + practical effort out of 10) effort out of 40 Final exam out of 60 Final grade out of 100	
Main references (sources)	
Recommended supporting books and references (scientific journals, reports...)	Book of Small Chemical Industries \ Mohamed Ahmed Al-Sayed Khalil
Electronic references, Internet sites	Book of Industrial Chemistry \ M. Noman Kazem Khader

Course Description Form

1. Course Name:	
Oil and Petrochemical Practical	
2. Course Code:	
Second level	
3. Semester / Year:	
Courses system	
4. Description Preparation Date:	
11 / 1 / 2026	
5. Available Attendance Forms:	
In-person class lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
24 hour	
7. Course administrator's name (mention all, if more than one name)	
Name: Hamad Farhan Mousa Abdulla Email: hamad.farhan@tu.edu.iq	
8. Course Objectives	
Course Objectives	**1-** Providing students with scientific and practical skills in how to deal with dangerous and toxic chemicals in laboratory work. **2-** Striving to make students of the College of Basic Education feel the value and importance of Oil and Petrochemical Practical , the role of laboratory experiments in science and technology, and how they deal with school students after graduation and practice their specialties as teachers in middle schools and some research laboratories in state departments related to industry and health and in the field of research and development. **3-** Identify the tools, glassware, and devices in the chemical laboratory and how to use each of them. **4-** Identify the basic experiments in inorganic chemistry that are related to the physical properties of organic compounds, such as melting and boiling points. **5-** Learn how sediments separate inorganic compounds and purify them from impurities after their preparation. **6-** Learn about extracting materials from their sources, such as

	extracting natural products from plants. **7-** Utilizing the student's scientific knowledge in a way that helps him face life problems.

9. Teaching and Learning Strategies	
Strategy	The lecture and discussion method, in addition to all the teaching methods used, such as presentations and laboratory reports, in addition to practical experiments and what was mentioned above.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
February, third week	2	Safety rules and specifications in laboratories	Security and safety in scientific laboratories	Lecture, practical part and discussion	Surprise tests
Februar, fourth week	2	How to store chemicals	Chemical laboratory chemistry	Lecture, practical part and discussion	Surprise tests
March first week	2	Degree of aniline	Experimen Degree of aniline	Lecture, practical part and discussion	Surprise tests
March, third week	2	egree of combustion of oil	Experimen egree of combustion of oil	Lecture, practical part and discussion	Surprise tests
March, fourth week	2	first month exam	first month exam	Lecture, practical part and discussion	Surprise tests
April first week	2	cetane factor	experiment to find the cetane factor	Lecture, practical part and discussion	Surprise tests

April, second week	2	octane number	experiment to find octane number	Lecture, practical part and discussion	Surprise tests
April third Week	2	Flash Point Test	Destruction of polymers	Lecture, practical part and discussion	Surprise tests

11. Course Evaluation	
Temporary or sudden daily exams, in addition to monthly exams, attendance, performance in the laboratory, and laboratory reports.	
12. Learning and Teaching Resoures	
Required textbooks(curricular books, if any)	Book “Industrial chemistry” Tariq Ismael kachia
Main references(sources)	"Fundamentals of Industrial Chemistry: Pharmaceuticals, Polymers, and Business" John A. Tyrell
Recommended books and references (scientific journais, reports…)	"Applied Chemistry: A Textbook for Engineers and Technologists" H.D. Gesser
Electronic references, websites	Google searching for Industrial chemistry

Course Description Form

1. Course Name : Histology and Embryology (Theoretical)
2. Course Code: 2nd class
3. Semester / Year: Courses system
4. Description Preparation Date: 1/ 2 / 2026
5. Available Attendance Forms:Presency class lectures
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: Prof. Dr. Mohammed Jameel Mohammed Email: mohmmedjamel@tu.edu.iq
8. Course Objectives

Course Objectives	• Cognitive Objectives: To recognize and recall the basic concepts of histology and embryology. .... • To enable the student to understand body tissues, the stages of embryonic development, and the formation of the new individual. • To enable the student to apply this theoretical information practically and understand its structure. • To develop students' analytical and evaluative abilities, in line with the curriculum. • To grasp the practical and applied aspects of histology and embryology through the development of practical and laboratory skills and experiences in tissue and microscopic preparations. • • To reinforce the concept of preserving lineage by protecting the fetus and providing health care during pregnancy, preventing congenital malformations, and raising awareness of the dangers of radiation and chemicals to fetal life, including congenital malformations, and promoting healthy body tissues, such as avoiding all forms of smoking and drug use.
9. Teaching and Learning Strategies	
Strategy	Teaching and Learning Methods • Delivering specialized scientific lectures • Reviewing scientific practices, studies, and research • Preparing scientific reports • • Conducting scientific field visits to governmental institutions such as hospital laboratories.

10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
February -1	2	Tissues and Epithelial Tissues	Introduction to Tissues and Epithelial Tissues	Lecture + Use of the display screen	Classroom performance and tests
February -2	2	History of Embryology	History of Embryology	Lecture + Use of the display screen	Classroom performance and tests
February -3	2	Connective Tissues	Connective Tissues	Lecture + Use of the display screen	Classroom performance and tests
February -4	2	Male and Female Reproductive Systems	Male and Female Reproductive Systems	Lecture + Use of the display screen	Classroom performance and tests
March -1	2	Muscle Tissue	Muscle Tissue	Lecture + Use of the display screen	Classroom performance and tests
March -2	2	Formation of Male and Female Gametes	Formation of Male and Female Gametes	Lecture + Use of the display screen	Classroom performance and tests
March	2	First month exam			
March -3	2	Nervous Tissue	Nervous Tissue	Lecture + Use of the display screen	Classroom performance and tests
March -4	2	Fertilization and Pregnancy	Fertilization and Pregnancy	Lecture + Use of the display screen	Classroom performance and tests
April -1	2	Skin and Appendages	Skin and Appendages	Lecture + Use of the display screen	Classroom performance and tests
April -2	2	Ovulation and Implantation	Ovulation and Implantation	Lecture + Use of the display screen	Classroom performance and tests
April -3	2	Body Systems	Body Systems	Lecture + Use of the display screen	Classroom performance and tests
April -4	2	Embryonic Development until Birth	Embryonic Development until Birth	Lecture + Use of the display screen	Classroom performance and tests
April		Second month exam			

11.Course Evaluation

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Nothing

Main references (sources)	1. **Neelam, Vasudeva and Mishra, Sabita. (2014). Textbook of Human Histology. Jaypee Brothers Medical Publishers, New Delhi, India.** 2. **Al-Alouji, Sabah Nasser. (2014). Physiology, Dar Al-Fikr, Amman, Jordan, 375 pages.** 3. **Singh, Vishram. (2012). Textbook of Clinical Embryology. Elsevier. 340 pages.**
Recommended books and references (scientific journals , reports ...)	**1. Al-Hajj, Ahmad Hamid. (2012). Principles of Histology. Dar Masirah for Publishing and Distribution - Amman, Jordan. 272 pages.** **2. Al-Sherbini, Ayman. (2011). Histology. Dar Tayyiba for Publishing, Distribution, and Scientific Equipment, Cairo, Egypt. 245 pages.** **3. Al-Hamoud, Muhammad Hassan, and Yousef, Walid Hamid. (2005). Medical Embryology. Al-Ahliya for Publishing and Distribution, Amman, Jordan. 348 pages.** **4. Robinson, Richard. (2002). Biology. Macmillan Reference, USA. 272 pages.**
Electronic References , Websites	Google Search . Pubmed. Google scholar

Course Description Form

1. Course Name:
Instrumental analysis
2. Course Code:
Theoretical automated analysis
3. Semester / Year:
Chapter one 2025_2026
4. Description Preparation Date:
2025/9/2
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Hassam Salah Dahkil Email: hassam.dakhil21@tu.edu.qi Abdullah Name:Hamad Farhan Mousa Email :hamad.farhan@tu.edu.iq
8. Course Objectives

Course Objectives	1- Providing the student with sufficient information to gain experience in dealing with analytical chemistry. 2- Gaining experience in knowing all laboratory devices and modern technologies. 3- Gaining sufficient information to keep up with and study modern sciences, including analytical chemistry.

9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

	Hours	Required Learning Outcomes			Evaluation method
Week 3 September	2	Introduction to instrumental	Addressing a general introduction to the	Paper lecture Display	Daily and monthly

		analysis, electromagnetic spectrum spectral ranges	types of analysis, and comparing them with other types of analysis.	Screen Blackboard and pen	exams, homework
Week 4 September	2	Optical components, spectrum sources, radiation filters	Study of the components of the device for spectroscopy	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 October	2	Optical detectors, automatic calibration methods	Discussing the types of detectors and which one is best. the numbe	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 October	2	UV-Visible Absorption Lambert-Beer Law	Explain the principle of operation of ultraviolet spectroscopy	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 October	2	Determinants of Lambert-Beer's Law	Study of Lambert-Beer's Law of Compliance and Types of Determinants	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 October	2	Devices used to measure ultraviolet-visible radiation	Comparison between single-band and dual-band device	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 November	2	First-month exam			
Week 2 November	2	UV-Vis Spectroscopy Applications	Addressing some applications of visible ultraviolet rays	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 November	2	Luminescence spectroscopy, fluorescence and phosphorescence spectroscopy	Explanation of fluorescence and phosphorescence spectra and their couplings with emission	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 November	2	Infrared spectroscopy, devices used	Explaining the principle of infrared rays and the type of device used	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

Week 1 December	2	Infrared spectroscopy, its quantitative applications	Study its quantitative applications and benefits	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 December	2	Second month exam			

11. Course Evaluation
Students are evaluated during the semester according to the following principles: • First-month exam from 15 / Second-month exam from 15 / Daily exam, attendance and participation from 20 • (Theoretical pursuit of 40) Pursuit of 40 • Final exam of 60 • Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	**Skoog D. ,Fundamentals of Analytical Chemistry,Nitnth ed., 2016**
Primary references (sources)	**1-Gary D.Chritian,Analytical Chemistry,fifth editionjohn Willy & sons,inc, 1986.** **2- Modern of Analytical Chemistry, Daived 2000**
Recommended supporting books and references (scientific journals, reports...)	Dr. Abdul Mohsen Abdul Hamid Al-Haidari, Instrumental Analysis Chemistry

Course Description Form

1. Course Name:
Chemistry Volumetric analysis
2. Course Code:
Chemistry Volumetric analysis
3. Semester / Year:
Chapter one 2025_2026
4. Description Preparation Date:
2024/9/9
5. Available Attendance Forms:
In attendance (weekly)
6. Number of Credit Hours (Total) / Number of Units (Total)
26 hours
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Hassam Salah Dahkil Email: hassam.dakhil21@tu.edu.qi Name: Sara Abdullah Kamil sara.ab.kamil@tu.edu.iq: Email
8. Course Objectives

Course Objectives	• Introducing the importance of Chemistry Volumetric analysis and the relationship of this science to other sciences. • Developing students' skills in analytical Chemistry sciences. • Learn about voluntary corrocation • Study the methods of expressing restrictions
9. Teaching and Learning Strategies	
The strategy	Use the standard method (lectures), discussion method, and problem-solving method.

10. Course Structure

	Hours	Required Learning Outcomes			Evaluation method
Week 3 September	2	Introduction to analytical Chemistry	Volume analysis	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

Week 4 September	2	Neutralization Titrations	Titrations Volume	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 October	2	Oxidating and reduction reaction	Concepts relating to interactions, oxidation and reduction and calculation of the numbe	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 2 October	2	Methods of expressing conquests	Calculate the rest solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 October	2	Methods of expressing conquests	Calculate the rest solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 October	2	Chemical accounts	Standard solutions and methods of preparation of solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 November	2	First-month exam			
Week 2 November	2	Calculate the pH for the acids and bases	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 November	2	Calculate the pH of the salts	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 4 November	2	Calculate the pH for commonon	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 1 December	2	Calculate the pH for organized solutions	Calculate the pH for solutions	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework

Week 2 December	2	Titrations precipitation	Concepts relating to sedimentation interactions-dissolve-applications	Paper lecture Display Screen Blackboard and pen	Daily and monthly exams, homework
Week 3 December	2	Second month exam			

11. Course Evaluation
Students are evaluated during the semester according to the following principles: • First-month exam from 15 / Second-month exam from 15 / Daily exam, attendance and participation from 20 • (Theoretical pursuit of 40) Pursuit of 40 • Final exam of 60 • Final score out of 100

12. Learning and teaching resources	
Required textbooks (methodology, if any)	Theoretical basics of quantitative gravimetric and volumetric analysis of inorganic analytical chemistry, Prof. Dr. Hadi Kazem Awad
Primary references (sources)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986
Recommended supporting books and references (scientific journals, reports...)	Dr.. Moayad Qasim Al-Abaiji, Dr. Thabet Saeed Al-Ghabsheh, “Foundations of Analytical Chemistry,” University of Mosul, 1986

Course Description Form

1. Course Name:

Environmental and Health Education

2. Course Code:

Environmental and Health Education (Theoretical)

3. Semester / Year:

The Second Semester/2026

4. Description Preparation Date:

13/1/2026

5. Available Attendance Forms:

In-person (Weekly)

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: Assistant teacher Irfan Wasmi Mahmoud
Email: irfan_wasmi@tu.edu.iq

8. Course Objectives

Course Objectives	• Introduction to the importance of environmental and health education and its role in daily life. • Familiarizing students with the fundamental concepts of environmental health. • Understanding the principles and rules of individual health and safety. • Introducing healthy habits for individuals and addressing ways to overcome unhealthy habits. • Providing an introduction to first aid. • Explaining epidemics resulting from pollution and harm to public health.

9. Teaching and Learning Strategies

Strategy	Utilizing the standard method (lecture delivery). Feedback-based approach. Discussion and dialogue method. Problem-solving approach.

10. Course Structure

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

January	2	- Definition of Environmental Education - Objectives of Environmental and Health Education - Concept of Health - Public Health - Components of Public Health - Objectives of Public Health	The concept of public health and its principles	- Paper-based lecture Projection screen Whiteboard and marker	Daily exams Monthly exams • Homework assignments
February	2	- Concept of Family Health - Maternal and Child Care - Objectives of Maternal and Child Care	Family health A	Paper-based lecture Projection screen Whiteboard and marker	Daily exams Monthly exams • Homework assignments
February	2	- Curriculum for Maternal Health Care Before Pregnancy - Child Care	Family health B	Paper-based lecture Projection screen Whiteboard and marker	Daily exams Monthly exams • Homework assignments
February	2	- ▪ Concept of School Health - ▪ Objectives of School Health - ▪ School Health Services - ▪ Importance of Breaks Between Classes - ▪ The Role of Teachers in the Health Care of their Students	School health	Paper-based lecture Projection screen Whiteboard and marker	Daily exams Monthly exams • Homework assignments
February	2	- Nutrients - Functions of Food - Vitamins	Nutrition A	Paper-based lecture Projection screen Whiteboard and marker	Daily exams Monthly exams • Homework assignments

March	2	- Symptoms of Malnutrition in Children - Diseases of Malnutrition - Food Poisoning	Nutrition B	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
March	2	The first-month exam			
March	2	- Pulmonary Tuberculosis - Asthma - Whooping Cough - Diarrhea - Polio (Poliomyelitis)	Communicable diseases	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
March	2	- Swine Flu (H1N1 Influenza) - AIDS (Acquired Immunodeficiency Syndrome)	Infectious diseases	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
March	2	- Smoking - Alcohol - Drug Addiction - Taking Medications without Consultation with a Doctor	Some harmful habits Their impact and the diseases they cause	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
April	2	- Duties of a First Responder - Bandaging - Tourniquets - Wounds - Bleeding	First aid	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
April	2	- Fractures - Burns - Epilepsy (Seizures) - Drowning	First aid	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
April	2	- Home Pharmacy - Contents of the Pharmacy	Home pharmacy	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams • Homework assignments
April	2	The Second-month exam			

May	2	- Introducing the student to environmental and health education and its importance - In-depth study about food, types of diseases, and first aid	General review of the prescribed curriculum	Paper-based lecture Projection screen Whiteboard and marker	• Daily exams Monthly exams

11. Course Evaluation
Students are assessed during the semester based on the following criteria: First-month exam: 25% Second-month exam: 25% Daily exams, attendance, and participation: 15% (The semester's grade is now out of 40) Final exam: 60% Final grade: 100%

12. Learning and Teaching Resources	
Required Textbooks (Methodology, if available)	Environmental Health: From Global to Local, 3rd Edition
Primary References (Sources)	Title: "Environmental Psychology" Authors: Ali Askar, Mohammed Al-Ansari Location: Kuwait Publisher: Dar Al-Buhooth Al-Ilmiyah Edition: 1st Year: 1983
Recommended Supplementary Books and References (Scientific Journals, Reports, etc.)	Title: "The Problem of Environmental Pollution and the Role of Education in Confronting it" Author: Fadia Hamed Thesis Type: Master's Thesis College: Faculty of Education University: Al-Minufiya University Year: 1990
Electronic References, Internet Websites	• https://ar.wikipedia.org/wiki • https://scholar.google.com/schhp?hl=ar

Course Description Form

1. Course Name:
Chemistry of Representative Elements-2
2. Course Code:
3. Semester / Year:
Second semester/2026
4. Description Preparation Date:
2026/1/11
5. Available Attendance Forms:
Face to Face (compulsory)
6. Number of Credit Hours (Total) / Number of Units (Total)
28
7. Course administrator's name (mention all, if more than one name)
Name: Ghazi Ibrahim Abbas Abd-ulwahab Email: ghazi92chemist@tu.edu.iq
8. Course Objectives

Course Objectives	- The student will be introduced to some basic concepts in the chemistry of representative elements. At the end of the stage, the student will be able to perform the electronic arrangement of representative elements, determine the periodic trends in the properties of representative elements, describe the physical and chemical properties of representative elements, know the importance and uses of representative elements in daily life and the industrial field, understand the groups and periods of representative elements in the periodic table, and distinguish between the properties of metallic and non-metallic elements, alkali elements, alkaline earth elements, etc.

9. Teaching and Learning Strategies

Strategy	- A performance evaluation form according to a standard that depends on the nature of the scientific material. - Works within group work. - Tests (written and oral). - General and transferable qualification skills (other skills related to employability and personal development). - Training students to use modern teaching methods and techniques, including integrated education using technology. - Multimedia. - Assigning students to conduct research related to the fields of scientific material. - Enabling students to use their personal skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 4 January	2	Its position in the periodic table, its properties, ionization energy, electronegativity, electron affinity, atomic radius, covalent radius	Introduction to Representative Elements	Lecture, discussion and Power point	Surprise tests
Week 1 February	2	Its existence, general properties, reactions, hydrogen isotopes, its production in industry and its uses, isomers...	Hydrogen and hydrides	Lecture, discussion and Power point	Surprise tests
Week 2 February	2	General properties, preparation, existence, halides, oxides, sulfates, similarity between lithium and magnesium	Alkaline elements	Lecture, discussion and Power point	Surprise tests
Week 3 February	2	General properties, preparation, existence, halides, oxides, hydrides, similarity between beryllium and aluminium	alkaline earth elements	Lecture, discussion and Power point	Surprise tests
Week 4 February	2	Introduction, preparation, properties,	Boron-aluminum group	Lecture, discussion	Surprise tests

		halides, oxides, alum, hydrides, nitrogenous compounds of boron		and Power point	
Week 1 March	2	First month exam			
Week 2 March	2	Properties of elements, their preparation, halides, carbides, oxides, germanium, tin and lead elements	carbon silicon group	Lecture, discussion and Power point	Surprise tests
Week 3 March	2	Properties of elements, their existence, methods of obtaining them, their most important compounds, oxides, peroxides and superoxides	Oxygen and sulfur group	Lecture, discussion and Power point	Surprise tests
Week 4 March	2	Introduction, existence, methods of separation, halogen and oxyhalogen acids, their compounds	halogen group	Lecture, discussion and Power point	Surprise tests
Week 1 April	2	Its general characteristics, compounds, uses	noble gas group	Lecture, discussion and Power point	Surprise tests
Week 2 April	2	The importance of symmetry in chemistry, symmetry processes, examples of it	Symmetry	Lecture, discussion and Power point	Surprise tests
Week 3 April	2	Second month exam			

11. Course Evaluation

Students are evaluated during the semester according to the following principles:

- First-month exam from 15 / Second-month exam from 15 / Daily exam, attendance and participation from 10
- Pursuit of 40
- Final exam of 60
- Final score out of 100

12. Learning and Teaching Resoures

Required textbooks(curricular books, if any)	- Modern Inorganic Chemistry (Part One). Authored by: Dr. Naaman Al-Naimi - Inorganic Chemistry Representative Elements. Authored by: Dr. Essam Gerges
Main references(sources)	Fundamentals of Inorganic Chemistry / Written by Prof. Dr. Mohamed Magdy Wasil
Recommended books and references (scientific journais, reports…)	- Nuclear Radiochemistry. Authored by: Dr. Anis Malik. - Inorganic Chemistry. Authored by: Cotton and Wilkonsin
Electronic references, websites	Google searching for Inorganic Chemistry

Course Description Form

1. Course Name:	
Coordination Chemistry-3	
2. Course Code:	
3. Semester / Year:	
First Semester/2025	
4. Description Preparation Date:	
1/9/2025	
5. Available Attendance Forms:	
Face to Face (compulsory)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
28	
7. Course administrator's name (mention all, if more than one name)	
Name: Ghazi Ibrahim Abbas Abd-ulwahab Email: ghazi92chemist@tu.edu.iq	
8. Course Objectives	
Course Objectives	- The student will be familiar with some basic concepts in coordination chemistry. At the end of the stage, the student will be able to name coordination compounds, identify coordination complexes, hybridize coordination compounds, geometric shapes of complexes, magnetic properties of isomers formed by these compounds and know the theories that explain coordination complexes.
9. Teaching and Learning Strategies	
Strategy	- A performance evaluation form according to a standard that depends on the nature of the scientific material. - Works within group work. - Tests (written and oral). - General and transferable qualification skills (other skills related to employability and personal development).

	- Training students to use modern teaching methods and techniques, including integrated education using technology. - Multimedia. - Assigning students to conduct research related to the fields of scientific material. - Enabling students to use their personal skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 3 September	2	Introduction to Coordination Chemistry		Lecture, discussion and Power point	Surprise tests
Week 4 September	2	Chain theory in the development of chemistry		Lecture, discussion and Power point	Surprise tests
Week 1 October	2	Werner's theory and types of ligands		Lecture, discussion and Power point	Surprise tests
Week 2 October	2	Naming coordination complexes		Lecture, discussion and Power point	Surprise tests
Week 3 October	2	Valence bond theory in coordination complexes		Lecture, discussion and Power point	Surprise tests
Week 4 October	2	First month exam			
Week 1 November	2	Hybridization and geometric shapes		Lecture, discussion and Power point	Surprise tests
Week 2 November	2	Geometric isomers of coordination complexes		Lecture, discussion and Power point	Surprise tests
Week 3 November	2	Electronic configuration and physical properties of transition elements		Lecture, discussion and Power point	Surprise tests

Week 4 November	2	Effective atomic number rule		Lecture, discussion and Power point	Surprise tests
Week 1 December	2	Crystal field theory		Lecture, discussion and Power point	Surprise tests
Week 2 December	2	Second month exam			
Week 3 December	2	Jean Teller's deformity		Lecture, discussion and Power point	Surprise tests
Week 4 December	2	Molecular orbital theory		Lecture, discussion and Power point	Surprise tests

11. Course Evaluation

Students are evaluated during the semester according to the following principles:

- First-month exam from 15 / Second-month exam from 15 / Daily exam, attendance and participation from 10
- Pursuit of 40
- Final exam of 60
- Final score out of 100

12. Learning and Teaching Resoures

Required textbooks(curricular books, if any)	Fundamentals of coordination chemistry - Al-Azhar University - Faculty of Science - Department of Chemistry
Main references(sources)	Inorganic chemistry; Chatherine

	E.Houscroft and Alan G.Sharpe
Recommended books and references (scientific journais, reports…)	- Inorganic Chemistry Transition Elements - Coordination Principles Authored by: Dr. Naaman Saad Al-Din Al-Naimi and his group. - Coordination Chemistry. Authored by: Dr. Essam Gerges
Electronic references, websites	Google searching for Coordination Chemistry

Course Description Form

1. Course Name:
Practical Organic Chemistry-3
2. Course Code:
3. Semester / Year:
First Semester/2024
4. Description Preparation Date:
1/9/2025
5. Available Attendance Forms:
Face to Face (compulsory)
6. Number of Credit Hours (Total) / Number of Units (Total)
28
7. Course administrator's name (mention all, if more than one name)
Name: Ghazi Ibrahim Abbas Abd-ulwahab Email: ghazi92chemist@tu.edu.iq
8. Course Objectives

Course Objectives	- The student will be familiar with some basic concepts in the practical organic chemistry subject. At the end of the stage, the student will be able to identify and name the tools and glassware in the laboratory, know the devices in the laboratory and how to use them, deal with chemicals, distinguish between chemicals by their properties, know laboratory safety tools and prevention procedures, plan theoretical calculations before conducting the experiment, conduct experiments and methods of dealing with them.
9. Teaching and Learning Strategies	
Strategy	- A performance evaluation form according to a standard that depends on the nature of the scientific material. - Works within group work. - Tests (written and oral).

	- General and transferable qualification skills (other skills related to employability and personal development). - Training students to use modern teaching methods and techniques, including integrated education using technology. - Multimedia. - Assigning students to conduct research related to the fields of scientific material. - Enabling students to use their personal skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 3 September	2	Laboratory safety rules and procedures, how to store chemicals and how to prevent them		Lecture, practical part and discussion	Surprise tests
Week 4 September	2	Experiment of Aldol condensation		Lecture, practical part and discussion	Surprise tests
Week 1 October	2	Experiment preparation of Acetanilide		Lecture, practical part and discussion	Surprise tests
Week 2 October	2	Experiment preparation of Schiff bases		Lecture, practical part and discussion	Surprise tests
Week 3 October	2	Experiment preparation of Diazonium salt		Lecture, practical part and discussion	Surprise tests
Week 4 October	2	First month exam			
Week 1 November	2	Experiment preparation of Aspirin		Lecture, practical part and discussion	Surprise tests
Week 2 November	2	Experiment to Isolation Caffeine from Tea		Lecture, practical part and discussion	Surprise tests
Week 3 November	2	Experiment preparation of Soap		Lecture, practical part and	Surprise tests

				discussion	
Week 4 November	2	Experiment preparation of Azo Dyes		Lecture, practical part and discussion	Surprise tests
Week 1 December	2	Experiment preparation of Aniline		Lecture, practical part and discussion	Surprise tests
Week 2 December	2	Second month exam			
Week 3 December	2	Experiment preparation of Benzoic acid		Lecture, practical part and discussion	Surprise tests
Week 4 December	2	Experiment preparation of Sulfanilic acid		Lecture, practical part and discussion	Surprise tests

11. Course Evaluation

Students are evaluated throughout the semester according to the following criteria:

- First month exam from 4/ Second month exam from 4/ Daily exam and attendance and participation from 2
- (Theoretical effort from 30 + practical effort from 10) effort from 40
- Final exam from 60
- Final grade from 100

12. Learning and Teaching Resoures

Required textbooks(curricular books, if any)	- Basics of Organic Chemistry. Written by: Dr. Muhammad Nizar. - Experiments in Organic Chemistry - University of Kufa - College of Science -

	Department of Chemistry 2015. Written by: M.M. Asaad Hashim Anid and his group.
Main references(sources)	John McMurry "Organic Chemistry" 9th Edition Cengage Learning, USA (2016).
Recommended books and references (scientific journais, reports…)	John McMurry "Organic Chemistry with Biological Applications" 3rd Edition Cengage Learning, USA (2015).
Electronic references, websites	Google searching for Organic Chemistry

Course Description Form

1. Course Name:
Practical Organic Chemistry-2
2. Course Code:
3. Semester / Year:
Second semester/2026
4. Description Preparation Date:
11/1/2026
5. Available Attendance Forms:
Face to Face (compulsory)
6. Number of Credit Hours (Total) / Number of Units (Total)
28
7. Course administrator's name (mention all, if more than one name)
Name: Ghazi Ibrahim Abbas Abd-ulwahab Email: ghazi92chemist@tu.edu.iq
8. Course Objectives

Course Objectives	- The student will be familiar with some basic concepts in practical organic chemistry. At the end of the stage, the student will be able to identify and name the tools and glassware in the laboratory, know the devices in the laboratory and how to use them, deal with chemicals, distinguish between chemicals by their properties, know laboratory safety tools and prevention procedures, plan theoretical calculations before conducting the experiment, conduct experiments and how to deal with them, measure the melting and boiling points of prepared compounds, separate and precipitate materials from their solutions, purify prepared compounds.

9. Teaching and Learning Strategies

Strategy	- A performance evaluation form according to a standard that depends on the nature of the scientific material. - Works within group work. - Tests (written and oral). - General and transferable qualification skills (other skills related to employability and personal development). - Training students to use modern teaching methods and techniques, including integrated education using technology. - Multimedia. - Assigning students to conduct research related to the fields of scientific material. - Enabling students to use their personal skills.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 4 January	2	Laboratory safety rules and specifications	Safety and security in scientific laboratories	Lecture, practical part and discussion	Surprise tests
Week 1 February	2	How to store chemicals	Chemical laboratory chemicals	Lecture, practical part and discussion	Surprise tests
Week 2 February	2	Tools used in the laboratory	Tools, glassware and apparatus in the chemical laboratory and their uses	Lecture, practical part and discussion	Surprise tests
Week 3 February	2	Determine the melting point of solid chemical compounds.	Melting point experiment	Lecture, practical part and discussion	Surprise tests
Week 4 February	2	Determine the boiling point of liquid chemical compounds.	Boiling point experiment	Lecture, practical part and discussion	Surprise tests
Week 1 March	2	First month exam			
Week 2 March	2	How to separate and purify solid organic chemical compounds	Crystallization and recrystallization experiment	Lecture, practical part and discussion	Surprise tests

Week 3 March	2	Separating substances with a large difference in boiling point or purifying liquid substances from impurities	Simple distillation experiment	Lecture, practical part and discussion	Surprise tests
Week 4 March	2	Separation of substances with a boiling point difference of less than 50℃ or purification of liquid substances from impurities	Fractional distillation experiment	Lecture, practical part and discussion	Surprise tests
Week 1 April	2	Separation of substances with very small differences in boiling points or purification of liquid substances from impurities	Steam distillation experiment	Lecture, practical part and discussion	Surprise tests
Week 2 April	2	Separation of materials from their sources found in nature	Organic solvent extraction experiment	Lecture, practical part and discussion	Surprise tests
Week 3 April	2	Second month exam			
Week 4 April	2	Solid chemical purification	sublimation experience	Lecture, practical part and discussion	Surprise tests
Week 1 May	2	Identify the properties of organic compounds and test their solubility.	Organic Compounds Solubility Experiment	Lecture, practical part and discussion	Surprise tests

11. Course Evaluation

Students are evaluated throughout the semester according to the following criteria:

- First month exam from 4/ Second month exam from 4/ Daily exam and attendance and participation from 2
- (Theoretical effort from 30 + practical effort from 10) effort from 40
- Final exam from 60
- Final grade from 100

12. Learning and Teaching Resoures

Required textbooks(curricular books, if any)	- Practical Organic Chemistry - University of Basra - College of Science - Department of Chemistry
Main references(sources)	John McMurry "Organic Chemistry" 9th Edition Cengage Learning, USA (2016).
Recommended books and references (scientific journais, reports…)	John McMurry "Organic Chemistry with Biological Applications" 3rd Edition Cengage Learning, USA (2015).
Electronic references, websites	Google searching for Organic Chemistry

Course description template

Course Name .1	
Arabic	
Course Code .2	
Arabic	
Term/Year .3	
First semester/ First year /2025-2026	
Date this description was prepared .4	
2025/09/1	
Available attendance formats .5	
My attendance (weekly)	
Total number of study hours / Total number of units .6	
hours (2) units 30	
Name of the course coordinator .7	
Ali.j.mohamed@tu.edu.iq :Name: M.M. Ali Jassim Mohammed Hussein, email	
Course Objectives .8	
• Consolidation love Heritage Poetry in minds Students especially . in His era The golden one • knowledge effect Literature Arabic and effects religious social . in life Peoples The other • . identification on Topics Poetry • knowledge Most important Poets The era and their trends Poetry . And the artistic aspect • identification on Most important Poets Ages • . save Texts Poetry	Course objectives
Teaching and learning strategies .9	
Using various teaching methods, including: the lecture method / the cooperative / discussion method / the problem-solving method / modern active learning strategies .learning	strategy

Course Structure .10

Week	Hours	Unit or topic	Required learning	Learning	Evaluation

Method	method	outcomes	name		
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	From Surah Al-Baqarah, verses (263-260)	Knowledge and understanding	2	**The** fourth week of September
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	From the noble Prophetic Hadith, the Messenger of God, may God bless him and grant him peace, said: “I was sent only to perfect ”.good morals	Knowledge and understanding	2	The first week of October
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Poetic selections in the pre-Islamic era: The Mu'allaqat (Suspended Odes) - Selection A poem by Antarah ibn Shaddad O 'Abla, where can I flee from death if my Lord in heaven ?has decreed it	Knowledge and understanding	2	The second week of October
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Morphological balance	Knowledge and understanding	2	Week three of October
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Plurals in Arabic	Knowledge and understanding	2	The fourth week of October
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Attributing the verb to pronouns	Knowledge and understanding	2	Fifth week of October
First month exam					The first week of November
Daily tests, monthly	Paper lecture Display	Verb conjugation in terms of soundness,	Knowledge and understanding	2	The second

tests, homework assignments	screen blackboard and pen	weakness, detachment, and augmentation			week of November
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Derivatives	Knowledge and understanding	2	Week three of November
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Language skills: The alphabet (solar and (lunar	Knowledge and understanding	2	The fourth week of November
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Rules for writing punctuation marks	Knowledge and understanding	2	Fifth week of November
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Rules for writing the hamza (first, middle, final, and the hamzas of connection and (separation	Knowledge and understanding	2	The first week of December
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Arabic dictionaries - Lexicographical / .schools The meanings of - unfamiliar words in the Holy Quran, such as the words understand," " " farsha," and "naqir, " relying on the book Al-Mufradat" by " Al-Raghib Al- .Isfahani	Knowledge and understanding	2	The second week of December
Second month exam					Week three of December
Daily and monthly exams	Paper lecture Display screen blackboard and pen	My school's curriculum (Al-Ain) - (and the basics) and the practice of .extracting words Common linguistic errors		2	Week December 4th

Course Evaluation .11	
: Students are evaluated during the semester according to the following criteria First month exam (15 points) / Second month exam (15 points) / Daily exam, attendance, and participation (10 points) (The annual effort has become 40) Final exam out of 60 Final grade out of 100	
Learning and teaching resources .12	
Required textbooks (methodology, if (applicable	Dr. , History of Arabic Literature .Shawqi Daif Clear explanation, Abdul Jabbar .Alwan Al-Nayla Vocabulary of the Quran, by Al-Raghib Al-Isfahani
Main references (sources)	Modern Arabic Literature, Faiq .Mustafa, Salem Al-Hamdani
Recommended supporting books and references (scientific journals, reports...)	**International, Arab, and Iraqi peer-reviewed journals**
Electronic references, websites	Websites related to specialized topics from Google ,Google search ,Scholar .Wikipedia

Course description template

Course Name .1

Arabic

Course Code .2

Arabic

Term/Year .3

Second semester / First stage / 2025-2026

Date this description was prepared .4

2025/ 1 0/1 1

Available attendance formats .5

My attendance (weekly)

Total number of study hours / Total number of units .6

hours (2) units 30

Name of the course coordinator .7

Ali.j.mohamed@tu.edu.iq :Name: M.M. Ali Jassim Mohammed Hussein, email

Course Objectives .8

Course objectives	• contemplate The Quran The generous Its interpretation : from during study verses from Surah Hajj And he understood Indications The Baath and horrors Resurrection . • Perception Fadl to learn The Quran : Through study Hadith Prophetic The Sharif that It shows Charity from to learn The Quran And teach him . • Analysis Literature Al-Abbasi : A Study hair son Rumi And he understood His philosophy in Relations social And friendship . • Extraction Values Pre-Islamic Era : Getting Acquainted on ethics Arabs ancients Like generosity, And chivalry, And loyalty, And the dream from during Evidence Poetic . • Understanding position Islam from Poetry : Clarification look The Quran And the year For hair, And how face Islam Art Service Virtue . • Mastery Sections The word : discrimination between the name And the verb And the letter and knowledge Signs all Including them . • Empowerment from Signs Grammar Original : Knowledge positions Use The opening, And the vowel mark, And the broken piece, And stillness . • Study Signs Grammar Sub-section : Mastery parsing Al-Muthanna, and collected Masculine Al-Salem, And the names The five, And actions The five . • Discrimination between Grammar And construction : understanding the

difference between Names Arabicized And the names built and cases all . Including them • Knowledge Knowledge And indefinite nouns : ability on to set Types . Knowledge in the language Arabic And its applications • Mastery Drafting The building For the unknown : Learn How to changing . structure The verb and parsing Deputy The subject • Taste Rhetoric Arabic : Discrimination between the truth And metaphor, . and study Types metaphors and metaphor mental	

Teaching and learning strategies .9

Using various teaching methods, including: the lecture method / the cooperative learning / / discussion method / the problem-solving method .modern active learning strategies	strategy

Course Structure .10

Evaluation Method	Learning method	Required learning outcomes	Unit or topic name	Hours	Week
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	The Holy Quran and the Noble Prophetic Hadith from Surah Al-Hajj .(5-1)	Knowledge and understanding	2	**The** fourth week of February
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	From the noble Prophetic tradition, the Messenger of God, may God bless him and grant him peace, said: The best of you " are those who learn the Qur'an and ".teach it	Knowledge and understanding	2	The first week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Arabic literature Seven verses from Ibn al-Rumi's poem ."on the letter "ba Your enemy learns from your friend Do not have too many friends	Knowledge and understanding	2	The second week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Human values in .pre-Islamic poetry Islam and Poetry	Knowledge and understanding	2	Week three of March

Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Arabic grammar Parts of speech and their grammatical markers	Knowledge and understanding	2	Fourth week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Arabized The building / knowledge And the .indefinite noun	Knowledge and understanding	2	Fifth week of March
First month exam					The first week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	The subject and the .predicate The abrogating .verbs The subject and its .representative	Knowledge and understanding	2	The second week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Arabic rhetoric - A general introduction to .Arabic rhetoric - Its definition, both linguistically and .technically - An introduction to the definition of .rhetoric	Knowledge and understanding	2	Week three of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	- Statement of its relationship to the Arabic language - The science of rhetoric (its definition and .(types - Simile (its definition, types, .(and applications	Knowledge and understanding	2	The fourth week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Truth and metaphor Linguistic metaphor: its definition, relationships, and	Knowledge and understanding	2	Fifth week of April

		applications			
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Metaphor (its definition, types, (and applications Mental metaphor - its definition,) relationship and .(applications	Knowledge and understanding	2	The first week of May
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Metaphor (its definition, relationships, and (applications Common linguistic errors	Knowledge and understanding	3	The second week of May
Second month exam					Week three of May
Daily and monthly exams	Paper lecture Display screen blackboard and pen	Comprehensive curriculum review		2	Week May 4th

Course Evaluation .11	
: Students are evaluated during the semester according to the following criteria First month exam (15 points) / Second month exam (15 points) / Daily exam, attendance, and participation (10 points) (The annual effort has become 40) Final exam out of 60 Final grade out of 100	
Learning and teaching resources .12	
The Diwan of Ibn al-Rumi, Diwans of the Poets of the Pre-Islamic Era. The Seven Odes, and the Ten.	Required textbooks (methodology, if (applicable
.The Holy Quran, Sahih Muslim	Main references (sources)
International, Arab, and Iraqi peer-reviewed journals	Recommended supporting books and references (scientific journals)
Websites related to specialized topics ,Google Scholar ,Google search from .Wikipedia	Electronic references, websites

Course description template

Course Name .1	
Arabic	
Course Code .2	
Arabic	
Term/Year .3	
Second semester / Second stage / 2025-2026	
Date this description was prepared .4	
2025/ 1 0/1 1	
Available attendance formats .5	
My attendance (weekly)	
Total number of study hours / Total number of units .6	
hours (2) units 30	
Name of the course coordinator .7	
Ali.j.mohamed@tu.edu.iq :Name: M.M. Ali Jassim Mohammed Hussein, email	
Course Objectives .8	
Course objectives	to understand Miracle The Quran The generous one from during contemplate Surah Yusef and statement clarity His words And its meanings . Perception importance the language Arabic : as Ashraf tongues and language that Choose it God tablet To reason the people border His religion . deduction Lessons Educational : From stories The Quranic Especially story . Yusef attic peace, To learn patience And monotheism Strengthening Values Ethics : From during study Hadiths Prophetic that . urge on Ethics The benign Like affection And kindness Consolidation Brothers Faith and warning from Diseases social The . condemned Like envy, And hatred, And turning away from one another Taste Literature Arabic Classic : From during to explain Poems stallions Poets Like Al-Mutanabbi, And he understood Meanings Glory And . horsemanship In it Understanding symbols emotional Sufism : through knowledge on Literature spiritual And poetry that He crosses on love God as in Poems son . The one who imposes Development sense National : by studying Resilience cities Arabic And its antiquity Historical as in The poem " Baghdad " by Mustafa beauty Religion .

Mastery rules number And the counted : and learn rulings Reminder And . the feminine And the grammar For numbers In various Its types Knowledge rulings Dependencies : A Study The adjective, And emphasis, And compassion, And the alternative, And how Following it For the one . followed in Grammatical analysis Study Arts Rhetoric : such as pun, And the antithesis, And the quote, And . inclusion, To promote Aesthetics Expression And writing Calendar tongue And the pen : with correction Mistakes Linguistic The .rumor in to choose Words and installation The camel	

Teaching and learning strategies .9

Using various teaching methods, including: the lecture method / the cooperative learning / / discussion method / the problem-solving method .modern active learning strategies	strategy

Course Structure .10

Evaluation Method	Learning method	Required learning outcomes	Unit or topic name	Hours	Week
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	The Holy Quran, from Surah Yusuf .(7-1)	Knowledge and understanding	2	**The** fourth week of February
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	From the noble Prophetic tradition, the Messenger of God, may God bless him and grant him peace, said no They envied) each other Do not .hate one another	Knowledge and understanding	2	The first week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	: Literature Arabic Al-Mutanabbi , his life His poetry , verses from poem And the heat .My heart	Knowledge and understanding	2	The second week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	son Al-Farid , Sultan Lovers , his life , his poetry , verses . From Jimeita With analysis The	Knowledge and understanding	2	Week three of March

		poem			
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Mustafa Jamal al-Din , his life, his poetry , a poem Baghdad , with explanation Analysis . The poem	Knowledge and understanding	2	Fourth week of March
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Al-Jawahiri , his life , his poetry Model From the poem : Peace on Palm hills , with Explanation and Analysis The poem .	Knowledge and understanding	2	Fifth week of March
		2			The first week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	rules Language: Morphology Conjugation of nouns , patterns , derived and . underived words	Knowledge and understanding	2	The second week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	The noun : its parts singular, The dual, : the plural, and the conditions each one .From among them	Knowledge and understanding	2	Week three of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	: Grammar Arabic number Its rules , .its divisions	Knowledge and understanding	2	The fourth week of April
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Dependent elements adjective, : emphasis , conjunction , apposition And its . types Dictionaries Arabic Dictionary : Measurements, Dictionary The	Knowledge and understanding	2	Fifth week of April

		.authentic ones			
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	Rhetoric Arabic is a science The , wondrous one Its name , its origin . its divisions , Moral . enhancements	Knowledge and understanding	2	The first week of May
Daily tests, monthly tests, homework assignments	Paper lecture Display screen blackboard and pen	verbal embellishments . And its purposes	Knowledge and understanding	2	The second week of May
Second month exam					Week three of May
Daily and monthly exams	Paper lecture Display screen blackboard and pen	Comprehensive curriculum review		2	Week May 4th

Course Evaluation .11	
: Students are evaluated during the semester according to the following criteria First month exam (15 points) / Second month exam (15 points) / Daily exam, attendance, and participation (10 points) (The annual effort has become 40) Final exam out of 60 Final grade out of 100	
Learning and teaching resources .12	
.The Holy Quran, Sahih Muslim The Diwan of Al-Mutanabbi, the Diwan of Muhammad Al-Jawahiri. The Sahih Dictionary (The Crown of Language and Sahih Arabic).(	Required textbooks (methodology, if applicable)
Language Standards by Ahmad ibn Faris	Main references (sources)
International, Arab, and Iraqi peer-reviewed journals	Recommended supporting books and references (scientific journals)
Websites related to specialized topics ,Google Scholar ,Google search from Wikipedia.	Electronic references, websites