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

2025-2026

Introduction:

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

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

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

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

Concepts and terminology:

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

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

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

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

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

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

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

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

Academic Program Description Form

University Name: Al-Furat Alwsat Technical University

Faculty/Institute: Babylon Technical Institute

Scientific Department: Medical Laboratory Technology

Academic or Professional Program Name: Medical Laboratory Technology

Final Certificate Name: Technical diploma in medical laboratory technology

Academic System: Semester

Description Preparation Date: 18\12\2025

File Completion Date: 20\12\2025

Signature:

Head of Department Name:

Assist. Prof. Dr. Haider Hussein Obaid

Date: 21/1/2026

Signature:

Scientific Associate Name:

Assist. Prof. Dr. Oras Khudhayer Obayes

Date: 21 / 1 / 2026

The file is checked by:

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Assist. Prof. Khansaa Azeez Obayes

Date: 21/1/2026

Signature:

Asst. Prof. Dr.
Ali Najah Kadhim
Dean of Babylon Technical Institute
Approved of the Dean

1. Program Vision

The Medical Laboratory Department is one of the core medical and scientific programs. It aims to expand the base of technical education by applying modern scientific methods in its field of specialization and establishing strong partnerships with various professional sectors. The department also strives to enhance scientific research and contribute to community development through providing high-quality technical services based on cooperation and competitiveness.

2. Program Mission

The mission of the Medical Laboratory Department is to disseminate scientific and technical knowledge in the field of medical laboratory sciences and to graduate qualified medical professionals capable of understanding and applying modern technologies. The department supports scientific and technical progress in line with global advancements by:

1. Engaging with the community and strengthening collaboration with public and private health sectors in training and medical consultation.
2. Developing future plans to improve educational and training curricula to produce competent technical staff skilled in performing chemical and biological analyses.
3. Promoting joint scientific research between academic staff and the Ministry of Health to solve medical challenges and update curricula according to healthcare needs.
4. Integrating computer and internet technologies into teaching and training to enhance educational efficiency.

3. Program Objectives

The program aims to prepare skilled technical personnel capable of working efficiently in medical laboratories by:

1. Performing routine laboratory analyses and general chemical tests.
2. Conducting examinations of urine and various biological fluids.
3. Operating and maintaining modern laboratory instruments effectively.

4. Program Accreditation

The program has not received accreditation

5. Other external influences

The department's graduates serve the community in health institutions and hospitals and through practical application in health centers and hospitals during summer training.

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	7	14	10%	
College Requirements	3	6	4.28%	
Department Requirements	23	120	85.7%	
Summer Training				Interpolation
Other				

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

7. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
First year/first semester	MLT111-24-CM	Medical laboratory techniques	2	4
First year/first semester	MLT112-24-CM	Microbial preparation	2	3
First year/first semester	MLT113-24-CM	Medical laboratory instrument	2	2
First year/first semester	MLT114-24-CM	Histology	2	3
First year/first semester	MLT115-24-CM	Analytical Chemistry	2	4

First year/first semester	MLT116-24-CM	Fundamentals of Nursing	1	2
First year/first semester	MLT117-24-CM	Computer application	1	2
First year/first semester	MLT118-24-CM	Arabic language	1	2
First year/second semester	MLT121-24-CM	Quality control	2	4
First year/second semester	MLT122-24-CM	Histological techniques	2	3
First year/second semester	MLT123-24-CM	Molecular biology	2	2
First year/second semester	MLT124-24-CM	Lab. Safety	1	2
First year/second semester	MLT125-24-CM	Blood transfusion	1	2
First year/second semester	MLT126-24-CM	Biochemistry	2	4
First year/second semester	MLT127-24-CM	English language	2	-
First year/second semester	MLT128-24-CM	Human right and Democratic	2	-
Second year/first semester	MLT211-24-CM	Microbiology	2	4
Second year/first semester	MLT212-24-CM	Haematology\1	2	4
Second year/first semester	MLT213-24-CM	Clinical chemistry\1	2	4
Second year/first semester	MLT214-24-CM	Immunology	2	4
Second year/first semester	MLT215-24-CM	Protozoa	2	4
Second year/first semester	MLT216-24-CM	Virology	1	2
Second year/first semester	MLT217-24-CM	Medical Ethics	2	2
Second year/first semester	MLT218-24-CM	The crimes of the Baath regime in Iraq	2	2
Second year/second semester	MLT221-24-CM	Bacterial Pathogenicity	2	4

Second year/second semester	MLT222-24-CM	Hematology\2	2	4
Second year/second semester	MLT223-24-CM	Clinical chemistry\2	2	4
Second year/second semester	MLT224-24-CM	Clinical Immunology	2	4
Second year/second semester	MLT225-25-CM	Helminthes	2	4
Second year/second semester	MLT226-24-CM	Medical Mycology	1	2
Second year/second semester	MLT226-24-CM	Computer application	2	2
Second year/second semester	MLT227-24-CM	Arabic language	2	2
Second year/second semester	MLT228-24-CM	Graduation project	-	2

8. Expected learning outcomes of the program

Knowledge

A- Cognitive objectives : The program aims to equip students with essential knowledge and skills in the field of medical laboratory sciences, enabling them to: 1.Understand and apply the fundamental principles of microorganism isolation, staining, and identification, including preparation and sterilization of culture media and detection of microbial contamination according to scientific standards. 2. Demonstrate knowledge of performing laboratory analyses for blood, urine, stool, and other biological fluid samples. 3. Understand the principles of preparing histological slides for microscopic examination and preparing laboratory reagents and solutions required for laboratory work. 4. Demonstrate knowledge of operating and maintaining medical laboratory instruments and performing routine laboratory duties in accordance with approved standard operating procedures.	**Learning Outcomes Statement :** The graduate will be able to explain the scientific principles of pathological laboratory analysis, diagnose microorganisms, understand types of clinical samples and their handling, and interpret laboratory test results according to approved scientific standards.

Skills

B-Marathi objectives: 1. Apply practical skills in utilizing medical laboratory procedures, including the preparation of histological slides, culture media, and various clinical laboratory tests. 2. Acquire the necessary skills to participate in communicable disease control programs and assist physicians in diagnosis and treatment. 3. Develop scientific competence in operating, maintaining, and servicing laboratory equipment to ensure optimal performance.	**Learning Outcomes Statement :** The graduate will be able to perform clinical laboratory investigations, prepare culture media and histological slides, and operate and maintain laboratory instruments efficiently and safely.

Ethics

C-Emotional goals :	Learning Outcomes Statement :
1. Enhancing students' professional responsibility through disease investigation by performing accurate laboratory tests and controlling laboratory examinations for all types of samples to achieve accurate diagnosis of pathological cases. 2. Commitment to performing laboratory examinations and preparing histological slides in accordance with approved scientific standards. 3. Developing teamwork and cooperation skills through assisting in patient care and contributing to the provision of appropriate medical services. 4. Instilling values of accuracy and discipline in operating and maintaining laboratory equipment correctly, promoting seriousness and commitment to the educational process through active participation in theoretical and practical assessments, and reinforcing a culture of scientific research and academic discussion through participation in research presentations, reports, and scientific seminars.	The graduate will demonstrate professional ethics and responsibility, maintain accuracy and confidentiality, work effectively within a healthcare team, and contribute to the improvement of health services.

9. Teaching and Learning Strategies

1. Theoretical lecture method.
2. Practical lecture method.
3. Method of discussion and dialogue

10. Evaluation methods

1. Daily testing.
2. Semester test.
3. Annual testing.
4. Discussing quarterly and annual research

11.Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Prof	Veterinary medicine and surgery	Medical parasitology			1	
Lecturer	Medical microbiology	bacteriology			1	
Lecturer	Chemistry	general chemistry			1	

Lecturer	Biology	Microbiology			1	
Lecturer	Biological resistance	mycology			1	
Lecturer	Biology	Blood Physiology			1	
Lecturer	Computer engineering	Computer engineering			1	
Assistant lecturer	Biology	Physiology			1	
Assistant lecturer	Biology	microbiology			6	
Assistant lecturer	Biology	mycology			1	
Assistant lecturer	Chemistry	analytical chemistry			1	
Assistant lecturer	Biology	biotechnology			1	
Assistant lecturer	Chemistry	Organic chemistry			1	
Assistant lecturer	Veterinary medicine and surgery	Medical physiology			1	

Professional Development
Mentoring new faculty members
New members of the department are developed by introducing them to teaching methods courses, conducting a teaching suitability test for them, and holding a training course, seminars, and workshops to train them in the approved work contexts.
Professional development of faculty members
Faculty members are developed by holding training courses, seminars and workshops to train them in approved work contexts.

12.**Acceptance Criterion**
Central admission to the Ministry of Higher Education and Scientific Research

13.**The most important sources of information about the program**
1- Methodical books

2- Supporting sources
3-General sources
4- The Internet.

14.Program Development Plan

The future development plans for the department include establishing a specialized Molecular Laboratory, as well as updating the academic curriculum through modification, addition, and replacement of courses to align with recent scientific advancements and labor market needs.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First year/Level first	MLT111-24-CM	Medical Laboratory Techniques	Specialization	√	√	√		√	√	√		√	√		
	MLT112-24-CM	Microbial preparation	Specialization	√	√			√	√	√		√	√		
	MLT113-24-CM	Laboratory Instrument	Specialization	√	√			√	√	√		√	√		
	MLT114-24-CM	Histology	Specialization	√	√	√		√	√			√	√		
	MLT115-24-CM	Analytical Chemistry	Specialization	√	√	√		√	√			√	√		
	MLT116-24-CM	Fundamentals of Nursing	Optional	√	√			√	√			√	√	√	
	MLT117-24-CM	Computers and Artificial Intelligence	Optional	√	√			√	√			√			
	MLT118-24-CM	Arabic language	Optional	√	√			√	√			√			
	MLT121-24-CM	Quality control	Specialization	√	√	√		√	√	√		√	√		
First year/Level Second	MLT122-24-CM	Histological & Cytological Techniques	Specialization	√	√			√	√	√		√	√		
	MLT123-24-CM	Molecular biology	Specialization	√	√	√		√	√			√	√		

	MLT124-24-CM	Lab. Safety	Specialization	√	√			√	√			√	√	√	
	MLT125-24-CM	Blood Transfusion	Specialization	√	√	√		√	√	√		√	√	√	
	MLT126-24-CM	Biochemistry	Specialization	√	√	√		√	√			√	√		
	MLT127-24-CM	English language	Optional	√	√			√	√				√		
	MLT128-24-CM	Human right and Democratic	Optional	√	√					√		√	√	√	
Second year/Level first	MLT211-24-CM	Microbiology	Specialization	√	√	√		√	√			√	√		
	MLT212-24-CM	Haematology\ 1	Specialization	√	√	√		√	√			√	√		
	MLT213-24-CM	Clinical chemistry\1	Specialization	√	√	√		√	√	√		√	√		
	MLT214-24-CM	Immunology	Specialization	√	√	√		√	√			√	√		
	MLT215-24-CM	Protozoa	Specialization	√	√	√		√	√			√	√		
	MLT216-24-CM	Virology	Specialization	√	√	√			√	√		√	√		
	MLT217-24-CM	Medical Ethics	Optional	√	√			√	√			√	√	√	
	MLT218-24-CM	The crimes of the Baath regime in Iraq	Specialization	√	√				√			√	√	√	
	MLT221-24-CM	Bacterial Pathogenicity	Optional	√	√	√		√	√			√	√		
	MLT222-24-CM	Hematology\2	Specialization	√	√	√		√	√	√		√	√		
	MLT223-24-CM	Clinical chemistry\2	Specialization	√	√	√		√	√	√		√	√		

Second year /Level Second	MLT224-24-CM	Clinical Immunology	Specialization	√	√	√		√	√	√		√	√		
	MLT225-24-CM	Helminthes	Specialization	√	√	√		√	√			√	√		
	MLT226-24-CM	Medical Mycology	Specialization	√	√	√		√	√	√		√	√		
	MLT227-24-CM	Computers and Artificial Intelligence	Optional	√	√			√	√			√			
	MLT228-24-CM	Arabic language	Optional	√	√			√	√			√			
	MLT229-24-CM	Graduation project	Optional	√	√	√	√	√	√	√	√	√	√	√	

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

First year/first semester

Course Description Form

1. Course Name: Medical laboratory techniques

2. Course Code: MLT111-24-CM

3. Semester / Year: Semester

4. Description Preparation Date:20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Maryam Ali Hussein
Email: maryam.hussein.3iba@atu.edu.iq

8. Course Objectives

Course Objectives	• Identify laboratory equipment and mater used in experiments. • Learn about the basis of microbiology. • Learn about bacteriology

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3-1	2	Knowledge the techniques used in medical lab.	Introduction to Medical lab. Techniques includes - Identify the various laboratory glasses and how to deal with laboratory methods. - Sterilization. Identify ways of cleaning,	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

			sterilization and disinfectant by physical, chemical and mechanical means. Identify different sterilization equipment and materials used in chemical sterilization. A full review of the basic techniques that use in the diagnosis of bacteria, blood, and clinical chemistry. Laboratory safety and how to avoid accidents and errors that are inadvertently laboratory in a laboratory (first aid, biochemical hazards, and biological hazards), and biological and chemical safety.		
4	2	Knowledge the sample collection	Samples collection and handling Samples collection and handling. - Samples collection for different lab. Investigations, samples transport, samples preparation.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
5	2	Knowledge how to culture microorganisms	Culturing of microorganism:- types of Culture media, different samples used for culture, bacterial growth curve, MO characterization (chemical tests for MO identification)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research

6	2	Learn about collecting urine samples	Urine samples: Urine formation, Properties of urine, chemical and physical investigations, microscopic examination.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
7	2	Knowledge the stool samples and their characteristics	Stool sample Stool sample: formation, properties, culture, general examination.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge the composition of semen	Seminal Fluid: Formation, organs of reproductive tract, characterization of semen fluid, investigations that used on seminal fluid, seminal fluid examination, fructose test, antisperm antibody (serum and semen). Total sperm count in Neubar chamber. Types of normal and abnormal of Sperms character with study the way of writing the final report.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge the agglutination techniques	Agglutination techniques	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge the principle and applictions of ELISA	-Enzyme-linked immunosorbent assay (ELISA) principle, applications	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11	2	Knowledge the principle and applications of RIA	Radioimmunoassay (RIA) principle, applications	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge the technique of immunofluorescence	Immunofluorescence technique	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge the applications of PCR	Polymerase chain reaction (PCR), types principle, applications	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge the gene expression	Real-time PCR	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11.Course Evaluation

Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Levensons and applied microbiology
Main references (sources)	Medical microbiology, sterilization text book
Recommended books and references (scientific journals, reports...)	Diagnostic microbiology , basic medical microbiology
Electronic References, Websites	FUNDAMENTALS of MICROBIOLOGYو ASM microbiology society

Course Description Form

1. Course Name: Microbial preparation

2. Course Code: MLT112-24-CM

3. Semester / Year: Semester

4. Description Preparation Date:20 /12/2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name :Ayat Raheem Khalf
Email: ayat.khalf@atu.edu.iq

8. Course Objectives

Course Objectives	• Learn how to prepare and prepare slides from different body parts For examination purpose.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	The student gets to know some terms deals with histology and cytology	Definition of some terminology that deals with histology , cytology,… etc.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge the collection of sample	Sample collection, biopsy, and autopsy.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

4-3	2	Knowledge the preparing of tissue and fixation	Steps of preparing tissue for study, fixation, fixatives.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
6- 5	2	Knowledge types of fixation	Routine fixatives and special fixatives.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
7	2	Knowledge washing process	Washing, solution , time .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge the dehydration	Dehydration , dehydrant	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge clearing agents	Clearing ,clearing agents	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge typesof waxes	Infiltration ,types of waxes	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge trimming	blocking and trimming .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
12	2	Knowledge sectioning of tissues blocks by microtomes	Microtomes, Sectioning.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14-13	2	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Final exam	Final exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Theory and practice of histological technique by Bancroft
Main references (sources)	Digital histology
Recommended books and references (scientific journals, reports...)	Scientific journals, and research in this field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Medical laboratory instrument
2. Course Code: MLT113-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12/2025
5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Entesar marzook hussain
Email: entesar.hussain@atu.edu.iq

8. Course Objectives

Course Objectives	• Learn how to use laboratory equipment. • Identify the parts of laboratory equipment. • Learn how to maintain laboratory equipment.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge principle and operation of microscope	MICROSCOPES Uses, main parts ,principle of work ,kinds, types of condensers, operation, cleaning, service and maintenance..	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge principle of balance	. BALANCES Uses ,types of balances ,main part ,principle of operation ,operation ,service and maintenance .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge the principle, types and operation of photometers	PHOTOMETRY Introduction, Light and wave length, Beer lamberts Law, types of photometers, main parts, filters, prisms and diffraction gratings, principle	Theoretical lecture Practical lecture Method of discussion	Daily testing Quarterly tes Discussing quarterly and annual research

			of operation, operation and maintenance.	and dialogue	
4	2	Knowledge main parts and introduction of flame photometry	FLAME PHOTOMETRY Introduction , Uses ,main parts , types , atomizers ,principle of operation ,operation and maintenance.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
5	2	Knowledge types and main parts of atomic absorption spectrophotometry	ATOMIC ABSORPTION SPECTROPHOTOMETERY Introduction ,uses , types, main parts , principle of operation ,operation and maintenance.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual resear
6	2	Knowledge uses, types and main parts of centrifuges	CENTRIFUGES Uses , types, main parts , principle of operation ,operation and maintenance.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge the autoclave instrument	AUTOCLAVES Introduction ,uses , types, main parts , principle of operation , sterilization, operation and maintenance	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge the ph meter	PH METERS	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge types and main parts of microtome	MICROTOMES Uses , types, main parts ,sharpeners , principle of	Theoretical lecture	Daily testing.

			operation ,operation and maintenance.	Practical lecture Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
10	2	Knowledge principle of operation of electrophoresis	. ELECTROPHORESIS Uses , types, main parts , principle of operation ,operation and maintenance.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge the heating instruments	HEATING INSTRUMENTS (WATER BATHS ,OVEN & INCUBATION) Uses , types, main parts thermostats, principle of operation ,operation and maintenance.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge water purification	Water Purification (Distillators & Deaionizers) Distillator ,deionizers, uses, main parts , operation and Maintenance	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge autoanalyzer	AUTOANALYZERS Introduction ,uses , types, main parts , principle of operation ,operation and maintenance	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Review	Review		
15	2	Final exam	Final exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11.Course Evaluation

Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Laboratory Instrument
Main references (sources)	book Laboratory Instrument
Recommended books and references (scientific journals, reports...)	1- book specializing in medical device technology / medical calibration devices, edition 1429 AH / Kingdom of Saudi Arabia. 2- Egyptian General Authority for Standardization and Quality / Measurement and Calibration Department / Medical Device Calibration Laboratory. -3 Research by Professor Nazih Shuja Al-Othmani / Associate Professor, Department of Electrical and Computer Engineering - Biomedical. -4 Book of measurement and calibration for medical devices / author Munther Odeh Al Kaabi, ed.
Electronic References, Websites	https://www.amazon.com/Medical Laboratory Instrument

Course Description Form

1. Course Name: Histology	
2. Course Code: MLT114-24-CM	
3. Semester / Year: Semester	
4. Description Preparation Date:20/12/2025	
5. Available Attendance Forms: In-person Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours/5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Sarah Abdulkareem Mukheef Email: sarah.mukheef@atu.edu.iq	
8. Course Objectives	
Course Objectives	• Knowledge of the components and tissues of all organs in the body. • Knowing the samples through dissecting some of the body's organs.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method.

	• Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3-1	2	Knowledge shape of cells	Shape of cell	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
4	2	Knowledge simple epithelial tissues	Epithelial tissue – simple epith. T.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
5	2	Knowledge stratified epithelial tissues	Epithelial tissue- Stratified epith. T.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge loose connective tissues	Connective tissue – Loose co. t	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge the dense connective tissues	Connective tissue – dense co. t	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge specialized blood C.T	Connective tissue – the blood	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test.

					Discussing quarterly and annual research
9	2	Knowledge the bone tissue	Connective tissue – compact bone	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge features of digestive system	External feature of digestive system	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge the urogenital system	Urogenital system of male &female	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge the tissue of liver	Liver	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge the tissue of spleen	Spleen	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge the tissue of lymph node	Lymph node	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
15	2	Knowledge the circulatory system	Circulatory system (Artery)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

47.Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam

48.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Atlas of Human Histology
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Analytical Chemistry

2. Course Code: MLT115-24-CM

3. Semester / Year: Semester

4. Description Preparation Date:20 /12/2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Roaa Mohammed
Email: roaa.mohammed@atu.edu.iq

8. Course Objectives

Course Objectives	• It gives a general idea about organic compounds and the ability to conduct different chemical experiments and reactions. • . It is possible to make and prepare different concentrations of solutions. • The ability to work with different chemical reagents.

	• Laboratory equipment can be used.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3-1	2	Knowledge the analytic chemistry	Introduction to analytical chemistry Atom , elements, radio isomers pollution with radio isomers , pollution with elements . Relation between atoms, molecules ,energy, according to the new theory of atom.(Debroley equation). Matter , classification.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
4	2	Knowledge the chemical bonds	Chemical bonds, covalent ,Ionic , coordination , hydrogen. Methods of analysis . qualitative and quantitative ,statistical methods of quantitative analysis, errors in quantitative analysis .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
5	2	Knowledge preparation and concentration of solutions	Methods of expressing concentration of solution , Molar solution ,normal solution . Preparation of molar solution , dilution ,questions.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
6	2	Knowledge the percentage composition	. Percentage composition, part per million.	Theoretical lecture method	Daily testing Quarterly tes

			Chemical equilibrium, ionization, constant of water (PH and POH).	Practical lecture method Method of discussion and dialogue	Discussing quarterly and annual research
7	2	Knowledge pH of weak acids and bases	Ionization of weak electrolyte . calculation of PH of weak acids and weak bases. Buffer solutions , classification .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge calculation of buffer solutions	Calculation of buffer solutions . Uses of buffer solutions.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge volumetric analysis	Volumetric analysis , classification , standard solution , examples . Neutralization reactions .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge oxidation and reduction reactions	Oxidation ,reduction reactions . examples. Precipitation reactions..	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge precipitation reactions	Precipitation reactions. Theory of indicators , reaction , properties ,examples. Types of indicators. Questions ,homework	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge principle of colorimetry	Principles of colorimetry	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test.

					Discussing quarterly and annual research
13	2	. knowledge law of lambert	Beer-lambert law .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge calibration curve	Standard solution/calibration curve..	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge instruments used in measuring the colorimetry	Instruments colorimetry	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11.Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Quantitative chemical Analysis
Main references (sources)	Fundamentals of Analytical Chemistry
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Fundamentals of Nursing
2. Course Code: MLT116-24-CM
3. Semester / Year: Semester
4. Description Preparation Date:20 /12/2025

5. Available Attendance Forms: In-person Lectures

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: Salwa Ahmed Hamza
Email: salwa.al-karadi@atu.edi.iq

8. Course Objectives

Course Objectives	• Learn about the basics of nursing and first aid. • Laboratory and occupational safety in the nursing field. • Ways to interact with the patient through his presence in medical laboratories.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge nursing	Introduction to nursing	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	1	Knowledge medical examination	Medical examination	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Knowledge vital signs	Vital signs, temperature measurement,	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	1	Knowledge pulse	Pulse	Theoretical lecture method	Daily testing Quarterly tes

				Practical lecture method Method of discussion and dialogue	Discussing quarterly and annual research
5	1	Knowledge respiration and factors effecting respiration	Respiration, definition, factors that effecting respiration, measurement of respiration	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	1	Knowledge blood pressure	Blood pressure, definition, factor the effecting blood pressure, hyper and hypotension, measurement of blood pressure	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	1	Knowledge health care	Health care, definition, factors effecting health care	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	1	Knowledge chemical factors related with disease	Chemical factors- disease-	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	1	Knowledge psychological factors related with disease	Psychological factors-diseases	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12-11	1	Knowledge biological factors related with disease	Biological factors- types- their effects on workers in Lab.- diseases	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
14-13	1	Knowledge fundamental of first aid	First aid- definition, paramedic, fundamental of first aid, wound, .bleeding	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	1	Knowledge burn	Burns- types of fracture aid- artificial respiration	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Basic Clinical Nursing Skills
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Computers and Artificial Intelligence
2. Course Code: MLT117-24-CM
3. Semester / Year: Semester
4. Description Preparation Date:20 /12/2025
5. Available Attendance Forms: In-person Lectures
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: Syffi Mohammad Monji Dr. Saif obeed
Email: inb.syffi10@atu.edu.iq

8. Course Objectives

Course Objectives	• The student will be able to interact with the computer. • Be familiar with computer uses. • Understand how to use computer software.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge the computer	Introduction to Computer: Concepts of Hardware and Software with their components; Concept of Computing, Data and Information; Connecting input/output devices, and peripherals to CPU. input/output evices, and eri herals to CPU	Theoretical lecture method Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	1	Knowledge components computer	Computer Components: Computer Portions, Hardware Parts, 1/0 Units, Memory Types.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Knowledge components computer	Computer Components (Cont.): Basic CPU Components, Computer Ports, Personal Computer,	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			Personal Computer (Features and Types)		and annual research
4	1	Knowledge operating system	Operating System and Graphical User Interface GUI: Operating System; Basics o Common Operating Systems; The User Interface, Using ·Mouse"	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
5	1	Knowledge operating system	Operating System and Graphical User Interface GUl(Cont.):	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	1	Knowledge word Processing	Word Processing Basics; Basic Features of Word Processors, Opening and Closing of documents, Text creation and Manipulation; Formatting Text and Paragraphs, Using Templates □or Document Creation.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7		Knowledge word processing	Word Processing (Cont.): Creating and Managing Tables, Utilizing Styles and Themes, Spell Check and Grammar Tools, Using Headers and Footers.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	1	Knowledge spread Sheet	Spread Sheet: Introduction to Spreadsheet Software, Creating and Formatting	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			Worksheets. Sorting and Filtering Data, Using Formulas and Functions.		and annual research
9	1	Knowledge spread sheet	Spread Sheet (Cont.): Using Formulas and Functions, Using Pivot Tables for Data Analysis, Data Validation and Error Checking, Data r-,tisualization: Creatinq Charts and Graphs.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	1	Knowledge Presentation Software	Presentation Software: Introduction to Presentation Software, Overview of Popular Presentation Tools, creating a New Presentation, Using Templates and -hemes, Inserting and Formatting Text and Images, Transition and Animation Effects.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	1	Knowledge presentation software	Presentation Software (Cont.): Using Speaker Notes and Timers, , Advanced Features: Hyperlinks and Action Buttons, Troubleshooting	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

			Com·mon Presentation Issues, Future Trends in Presentation Technology.		
12	1	Knowledge Internet and Web Browsers	Introduction to Internet and Web Browsers: Computer networks Basic; LAN, WAN; Concept of Internet and its Applications; connecting to internet.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	1	Knowledge Internet and Web Browsers	Introduction to Internet and Web Browsers (Cont.): World Wide Web; Web Browsing software's, Search Engines; Understanding URL; Domain name; IP Address.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	1	Knowledge communications and Emails: Basics	Communications and Emails: Basics of electronic mail; Getting an email account; Sending and receiving emails; Accessing sent emails; Using Emails; Document collaboration.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	1	Knowledge cloud computer	introduction to Cloud Computing and Services: Definition of Cloud Computing and its concept,	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			Cloud-Based Office Suites (Office 365 and Google Workspace), Google Docs, Google Sheets, Google Drive, Gooqle Meet.		and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	l. Graham Brown, David Watson, "Cambridge IGCSE Information and Communication Technology", 3rd Edition (2020) 2. Alan Evans, Kendall Martin, Mary Anne Poatsy, "Technology In Action Complete" 16th Edition (2020). 3. Ahmed Banafa, "Introduction to Artificial Intelligence (AD", 1st Edition (2024). 4. Al-Khader Ali Al-Khader, Researcher, "Computer Basics 2016." 5.Dr. Adel Abdel Nour, Introduction to the World of Artificial Intelligence, 2005
Recommended books and references (scientific journals, reports...)	https://www.noor-book.com
Electronic References, Websites	Non

Course Description Form

1. Course Name: Arabic language

2. Course Code: MLT118-24-CM

3. Semester / Year: The first is an annual course

4. Description Preparation Date:20 \12\2025
5. Available Attendance Forms: In-person Lecture
6. Number of Credit Hours (Total) / Number of Units (Total):
(30 Hours) (2 Unit)
7. Course administrator's name (mention all, if more than one name)
Name: Ali Gabber Mohsen Email: ali.gabr.bib5@atu.edu.iq
8. Course Objectives

Course Objectives	• **Learn how to write the tied taa and the extended alif.** • **Recognizing punctuation marks.** • **Knowing common language mistakes.** • **Identify the formal aspects of administrative discourse**

9.Teaching and Learning Strategies	
Strategy	1- Theoretical lecture method 2- Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
(1)	2	Knowledge the linguistic errors Rules of the tied and long taa	Introduction to linguistic errors - the closed and long taa and the open taa	The lecture is theory	Monthly and quarterly exam
(2)	2	Knowledge the rules for writing the extended	Rules for writing the extended and shortened alif - solar and lunar letters	The lecture is theory	Monthly and quarterly exam
(3)	2	Knowledge Dad and Dhad	Dad and Dhad	The lecture is theory	Monthly and quarterly exam
(4)	2	Knowledge writing the hamza	Writing the Hamza	The lecture is theory	Monthly and quarterly exam

(5)	2	Punctuation marks	Punctuation marks	The lecture is theory	Monthly and quarterly exam
(6)	2	Knowledge distinguishing between nouns and verbs	nouns and verbs And the difference between them	The lecture is theory	Monthly and quarterly exam
(7)	2	Knowledge objects	Objects	The lecture is theory	Monthly and quarterly exam
(8)	2	Knowledge numbers	Rules for writing numbers	The lecture is theory	Monthly and quarterly exam
(9) (10)	4	Knowledge applications of common linguistic errors	Applications of common linguistic errors	The lecture is theory	Monthly and quarterly exam
(11)	2	Knowledge meanings of prepositions	Noun and Tanween Meanings of prepositions	The lecture is theory	Monthly and quarterly exam
(12)	2	Knowledge formal aspects of administrative discourse	Formal aspects of administrative discourse	The lecture is theory	Monthly and quarterly exam
(13) (14)	2	Knowledge the language of administrative discourse	Formal aspects of administrative discourse	The lecture is theory	Monthly and quarterly exam
(15)	2	Examples of administrative correspondence	Examples of administrative correspondence	The lecture is theory	Monthly and quarterly exam

11. Course Evaluation	
Monthly theoretical exam 40 Final theoretical exam 60	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Non
Main references (sources)	Non
Recommended books and references (scientific journals, reports...)	**Arabic Language for Iraqi Universities** **Prepared by: Dr. Safaa Kadhim Makki** **Dr. Lama Muhammad Younis**
Electronic References, Websites	Non

First stage\ Second semester

Course Description Form

1. Course Name: Quality control
2. Course Code: MLT121-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12 /2025
5. Available Attendance Forms: In-person Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)
90 hours/6 units
7. Course administrator's name (mention all, if more than one name)
Name: Maryam Ali Hussein Email: Maryam.hussein.3iba@atu.edu.iq
8. Course Objectives

Course Objectives	• Identify laboratory equipment and materials used in experiments. • • Learn about hematology and how to examine urine. • • How to control quality.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge quality control	Introduction to quality control	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge medical relevant of QA	Medical relevent of QA, Standarded units of the	Theoretical lecture method Practical lecture method	Daily testing. Quarterly test.

			international system	Method of discussion and dialogue	Discussing quarterly and annual research
3-4-5	2	Knowledge detection of balancing error	Balancing error detection and false rejection	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
6-7	2	Knowledge materials of quality control	Quality control materials	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
8	2	Knowledge QA techniques for quantitative results	QA techniques for quantitative results	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge QA techniques for qualitative results	QA techniques for qualitative results	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge QA techniques for semi-quantitative results	QA techniques for semi-quantitative results	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge troubleshoot	Troubleshoot based on QA results	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
-13-12-14	2	Review	Review	Theoretical lecture Practical lecture	Daily testing.

				Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
15	2	Final exam	Final exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Levensons and applied microbiology
Main references (sources)	Medical microbiology, sterilization text book
Recommended books and references (scientific journals, reports...)	Diagnostic microbiology , basic medical microbiology
Electronic References, Websites	FUNDAMENTALS of MICROBIOLOGY و ASM microbiology society

Course Description Form

1. Course Name: Histological techniques

2. Course Code: MLT122-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Mona Gafil Abd
Email: mona.hussein@atu.edu.iq

8. Course Objectives

Course Objectives	• **Learn how to prepare and dye slides from different body parts.**

9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge adhesive of sample	Mounting, adhesives	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2-3	2	Knowledge staining and classification of stains	Staining , classification of stains	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
4-5	2	Knowledge staining of section	Staining section	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
6	2	Knowledge method of staining	Methods of staining .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
8-7	2	Knowledge preparation of stain	Types of stains , preparation of stain and oxidation of some stains .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge factors affect staining	Stains solvents ,factors affecting staining , storage of stains , how to choose stain .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test.

					Discussing quarterly and annual research
10	2	Knowledge decalcification	Decalcification , bone tissue .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12-11	2	Examination	Examination for second term	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14-13	2	Knowledge tissue slide freezing	Tissue slide , Freezing microtome .	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Final examination	Final examination	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Theory and practice of histological technique by Bancroft
Main references (sources)	Digital histology
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Molecular biology

2. Course Code: MLT123-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

60 hours/4 units

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

Name: Maryam Ali Hussein
Email: Maryam.hussein.iba3@atu.edu.iq

8. Course Objectives

Course Objectives	• The student's knowledge of the genetic material found in the cells of living organisms. • 2-Structure of DNA and RNA.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge molecular biology	Introduction to molecular biology	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge cell cycle	Cell cycle	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

3	2	Knowledge structure of DNA and RNA	DNA and RNA structure	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge DNA replication	DNA replication	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge DNA transcription	DNA transcription	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6-7	2	Knowledge translation	Translation and protein synthesis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge gene expression	Gene expression and regulation	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10-9	2	Knowledge inhibitors of translation	Inhibitors of translation and transcription	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge repair system of DNA	DNA repair system.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
12	2	Knowledge mutation	Mutation and chromosomal aberrations	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge agents that cause mutations	Chemical and physical agents that cause mutation	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge cDNA technique	Recombinant DNA technology (cDNA technique)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge cloning	Cloning and application (briefly)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Genetic and molecular biology book
Main references (sources)	Non
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Lab. Safety

2. Course Code: MLT124-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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: Entesar marzook hussain
Email: entesar.hussain@atu.edu.iq

8. Course Objectives

Course Objectives	• Understanding biological and chemical risks. • • How to deal with safety and avoid injury in the laboratory.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
2-1	1	Knowledge laboratory safety	Introduction to laboratory safety.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Knowledge roles of safety	General lab. Safety roles	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

5-4	1	Knowledge equipment's for personal protective	Personal protective equipments	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
8-6-7	1	Knowledge biological hazards	Biological hazards	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
10-9	1	Knowledge types of biological hazards	Types of biological hazards	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	1	Knowledge chemical hazards	Chemical hazards	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	1	Knowledge types of hazards	Types of chemical hazards	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	1	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15-14	1	Final examination	Final exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	laboratory safety handbook
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Blood transfusion

2. Course Code: MLT125-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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: Wid Abdulkhaleq Abd Zaid
Email: wid.abdzaid@atu.edu.iq

8. Course Objectives

Course Objectives	• **Conduct all blood tests.** • **Knowing blood types and performing all tests**

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

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

1	1	Knowledge blood transfustion	Information of blood transfusion	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	1	Knowledge components of blood	Blood components, blood collection, choosing the donor, physiological examination, time of collection	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Complete the second week principles	Complete the second week principles	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	1	Knowledge ABO system	Blood group: ABO system, Rh factor, Lewis system.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	1	Knowledge of blood typing	Classification of blood typing (long & short)	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	1	Knowledge direct and indirect combs test	Direct and indirect coomb's test of blood	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	1	Knowledge cross matching test	Process of cross matching test, reporting and record the results.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
8	1	Knowledge roles of blood transfusion	Roles of blood transfusion , blood disease	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	1	Knowledge pregnant care	Pregnant care , leukemia of infants	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	1	Complete the principles above	Complete the principles above	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	1	Knowledge separation of blood contents	Separation of blood contents, methods of separation.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	1	Complete the principle above	Complete the principle above	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	1	Knowledge blood components after storage	Component of blood after storage, anticoagulants.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

14	1	Knowledge disadvantage of blood transfusion	Blood transfusion disadvantage.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	1	Quality control , Tools ,Persons , Method	Quality control , Tools ,Persons , Method	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Blood Transfusion
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Biochemistry

2. Course Code: MLT126-24-CM

3. Semester / Year: Semester

4. Description Preparation Date:20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: ROAA WAHHAB MOHAMMED
Email: roaa.mohammed@atu.edu.iq

8. Course Objectives

Course Objectives	• It gives a general idea of biochemistry and enables one to identify the biochemical reactions that occur in human tissues. • It is possible to make and prepare different concentrations of solutions. • Diagnosing the body's life compounds using tools and chemicals. • Laboratory equipment can be used**.**

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	2	Knowledge biochemistry	Biochemistry Biochemistry compounds, cell	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge general properties of carbohydrate	Carbohydrates, classification, its presence, its importance, General properties of monosaccharide's.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge derivative of monosaccharids	Important monosaccharide's. Derivatives of monosaccharide's, reducing sugars. Its presence in human body, its reactions Disaccharides and polysaccharides properties, reactions occurrence.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research

4	2	Knowledge lipid classification and properties	Lipids ,classification ,properties. Fatty acids ,properties , reactions .	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge essential and unessential fatty acid	Essential fatty acids and unessential fatty acids. properties, reactions. Unsaturated fatty acids , properties its importance,	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge compound of lipids	Compound lipids ,derived lipids cholesterol, its existence.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge general properties of proteins	Proteins, general properties, peptide bond. Amino acids , properties , occurrence.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge classification of amino acid	Amino acid ,classification ,reactions. Classification of proteins ,chemical properties of proteins.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge separation of organic compounds	Separation of organic compounds by chromatography.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge separation of amino acid	Separation of amino acids. Examination	Theoretical lecture Practical lecture	Daily testing. Quarterly test.

				Method of discussion and dialogue	Discussing quarterly and annual research
11	2	Knowledge nucleoprotein analysis	Nucleic acids, nucleoprotein, analysis of nucleoprotein.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge nomenclature of enzyme	Enzymes ,nomenclature, classification. Enzymes, properties , factors in fleecing the rate of enzymatic reactions. Enzyme ,inhibitions.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge properties of hormones	Hormones , properties. , Classification of hormones. Protein hormones , non protein hormones	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge classification of vitamins	Vitamins ,water soluble vitamins, classification, occurrence, deficiency. Fat soluble vitamins , classification, occurrence, deficiency Complete of vitamins.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge creatine	Creatine and creatinine	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Quantitative chemical Analysis
Main references (sources)	Fundamentals of Biochemistry
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Human right and Democratic
2. Course Code: MLT128-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12 /2025
5. Available Attendance Forms: In-person 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: Zaid khudhur Email: zaid.bermany@atu.edu.iq
8. Course Objectives

Course Objectives	At the end of the course the student will be able to: • Know about human rights. • In addition, the student will be able to deal with different Theories of human right

9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

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

1st week	2	Knowledge rights and duties	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2nd week	2	know how to deal well with people in society	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3rd week	2	Knowledge the historical of human rights	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4th week	2	Knowledge the development of human rights	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5th week	2	Knowledge the development of human rights	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6th week	2	Knowledge human rights in Sumerian civilization	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7th week	2	Knowledge human rights in Sumerian civilization	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
8th week	2	Knowledge human rights in Roman civilization	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9th week	2	Knowledge human rights in Nile valley civilization	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10th week	2	Knowledge heavenly religions	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11th week	2	Knowledge humans rights in Judaism	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12th week	2	Knowledge humans rights in Christian	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13th week	2	Knowledge humans rights in Islamic religion	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

14th week	2	Knowledge humans rights in Islamic religion	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15th week	2	Final exam	Understanding the rights and duties and know how to deal well with people in society	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11.30% for the annual endeavor and 70% for the final exam					

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Human Rights book
Main references (sources)	The organization of human rights magazine
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name:
English Language
2. Course Code:
MLT127-24-CM
3. Semester / Year:
Semester
4. Description Preparation Date:
20 / 12 / 2025
5. Available Attendance Forms: In-person Lecture
6. Number of Credit Hours (Total) / Number of Units (Total)
Total credit hours: 30 Total units number: 2
7. Course administrator's name (mention all, if more than one name)
Name: Inas Haider Kadhim Email: inas.kadhim.iba@atu.edu.iq
8. Course Objectives

Course Objectives	1-Defines prefix ,suffix,root. 2. Understands the roles and functions of the grammar. 3.Measures the understanding by making oral tests. 4. Apply the rules of reading and writing the medical terms. 5. Performs the plurality of medical terms and its rules.

9. Teaching and Learning Strategies

Strategy	❖ Theoretic lectures strategy. ❖ Practical Application Strategy ❖ Conversation and discussion strategy. ❖ Regular testing strategy. ❖ Write a report on the topics ❖ Use visuals and videos that are relevant to the educational content

10.Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1st	**2**	Definition of root , suffix, the meaning of suffixes like –scopy, -logist, etc.	The meaning of suffix	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
2nd	**2**	Knowing the meaning of the common prefix likepre- Pro-, post-	Commonly used prefix	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
3rd	**2**	Give the students all the rules that help them to read the medical Terms.	Reading medical terms	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
4th	**2**	The students must know the process of pronunciation and the role of lungs, tongue, larynx	Pronunciation of medical terms	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.

5th	**2**	Investigate the letters that have no sounds. We only write them down.	Silent letters	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
6th	**2**	Knowing the two pronunciations of the sound c **As in cell, organ**	Soft and hard c	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
7th	**4**	The sound g has two pronunciations as in Biology, gastric	Soft and hard g	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
8th	**4**	Knowing the most common vocabulary that the nurse and the patient use them.	Vocabulary development	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
9th	**4**	The focus will be on the rules of grammar.	Focus on grammar	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
10th	**4**	Give the students the rules how to know the singular and the plural.	Singular and plural	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
11th	**4**	Match, fill the blank, test on vocabulary.	Exercise on vocabulary	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
12th	**4**	There are 12 rules of plurality, each medical term has a special rule.	Rules of plurality	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.

13th	**4**	Review, and answer all the exercise that is specific to the pronunciation.	Exercise on pronunciation	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
14th	**4**	Use all the rules of English to write the medical terms perfectly.	Writing the medical term	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.
15th	**4**	Make a full review of all previous lectures	Review	Review	Daily quizzes Quarterly testing. Annual examination.

11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports.... etc.	
12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	English for medicine and health sciences by Shehdeh farah and inaam hamadi
Main references (sources)	
Recommended books and references (scientific journals, reports, web sites...)	Non

Second year/first semester

Course Description Form

1. Course Name: Microbiology
2. Course Code: MLT211-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Dr. bareq A. ALlateef
Email: bareq.as86@gmail.com ,, barq10@atu.edu.iq

8. Course Objectives

Course Objectives	• Assistance in laboratory investigation of the examined samples by implantation. • Assistance in how to isolate and diagnose ailments. • Assisting the doctor in diagnostic and therapeutic procedures during the isolation procedure.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge medical microbiology	Introduction to medical microbiology, Microorganism, instruction with the host, microbial virulence, historical significance	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge pathogenic microorganisms	classes of pathogenic microorganisms Viruses, bacteria, fungi, parasites	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge classification and scientific nomenclature of bacteria	Classification and Scientific nomenclature of the bacteria. Normal Flora	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly

					and annual research
4	2	Knowledge the structure of bacteria	Bacterial Structure	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge bacterial division	Bacterial division and growth	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge bacterial genetics	Bacterial Genetics, DNA transfer between bacteria	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge the pathogenicity of bacteria	Pathogenicity of bacteria	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge bacterial toxin	TOXIGENESIS (bacterial toxin).	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge antibacterial agents	Classes of antibacterial agents	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

10	2	Knowledge the general characteristic of virus	General characteristic and classification of virus	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2		Viral genetics, a mutation, instruction between viruses, the role of genetic variation in evolution of viruses.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2		Pathogenicity of viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2		Classes of antiviral agents	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2		Characteristic and classification of medical fungi.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2		Morphology and structure of fungi,Classes of antifungal agents	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.					

12.Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Medical microbiology
Main references (sources)	BASIC BACTERIOLOGY
Recommended books and references (scientific journals, reports...)	Warren Levinson, MD, PhD San Francisco, California January 2014
Electronic References, Websites	https://www.amazon.com/Medical-Microbiology-Immunology-Eleventh-Science/dp/0071700285

Course Description Form

1. Course Name: Haematology\1	
2. Course Code: MLT212-24-CM	
3. Semester / Year: Semester	
4. Description Preparation Date: 20 /12 /2025	
5. Available Attendance Forms: In-person Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hours/6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Ali Mouged fadell Email: aldhmoshyali @gmail.com	
8. Course Objectives	
Course Objectives	• Knowledge of the medical system, laboratory tests, and diagnosis of disease. • Knowing blood types and performing all laboratory tests. • • Knowledge of blood types, RBCs, Hb, anemia.
9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

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

1	2	Knowledge importance of hematology	Introduction importance of hematology. Study the blood contains	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge the haemotopoiesis process	The haemoto poiesis in fetus, children and adult.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge structure and function of normal red blood cells	The normal red blood cells, importance, Structure, erythropoiesis and Function	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge causes and clinical signs of polycythemia	Polycythemia, causes, Clinical Signs and Laboratory diagnosis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge shape and size of RBCs	Study the red cell morphology in health and disease. Abnormality of R.B.C in size.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge abnormality of RBCs in shape	Abnormality of R.B.C in in shape	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge abnormality of RBCs in color	Abnormality of R.B.C in colour.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
8	2	Knowledge the normal Hb of blood	The normal Hb. Of the blood, contain and importance.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge types of Hb	Study the types of normal Hb. Types	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge common variant of Hb	Common Hb. Variant	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge anemia and classification	Anemia. Definition, classification and types	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge causes and clinical signs of anemia	Anemia. Causes .clinical signs and laboratory Finding.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge megaloblastic anemia	Megaloblastic anemia and Pernicious anemia.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

14	2	Knowledge aplastic anemia	Aplastic anemia and hemolytic anemia	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge sickle cell and hemolytic anemia	Sickle Cell an. And acquired and autoimmune hemolytic anemia.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Clinical hematology in medical practice
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Clinical chemistry\1
2. Course Code: MLT213-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12/2025
5. Available Attendance Forms: In-person Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)

90 hours/6 units

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

Name: Assist. Prof. Dr. Thikra Jawad
Email: thikra.jawad@atu.edu.iq

8. Course Objectives

Course Objectives	• Students learned the basic information of clinical chemistry and were able to develop their skills in clinical chemistry analyses • Knowing how to conduct laboratory tests, identifying diseases, and comparing them to nature.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge clinical chemistry	Introduction to clinical chemistry Disciplinary of clinical chemistry Introduction of metabolism, types of metabolism (anabolism and catabolism) collection and handing of blood samples , anticoagulant , urine compassion ,urine collection methods urine preservative	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge acid-base balance	Acid-base balance	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3-4	2	Knowledge electrolytes	Electrolytes (Na+, K+, Cl-, Ca2+, Mg, ect….) Diseases related to increase and decrease of electrolytes	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge trace elements	Trace element [Cu+2, Ceruloplasmin, Zn,	Theoretical lecture method Practical lecture method	Daily testing Quarterly tes Discussing quarterly

			Mn], disease appeared in abnormal metabolism of these metals.	Method of discussion and dialogue	and annual research
5	2	Knowledge trace elements	Trace element [Cu+2, Ceruloplasmin, Zn, Mn], disease appeared in abnormal metabolism of these metals	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6-7	2	Knowledge glucose digestion	Glucose digestion and absorption glucose) metabolism) Glucose uptake by cells Glycolysis and hormones that regulate glycolysis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Exam	Exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge krebs cycle	Tricyclic acid (TCA, Krebs' cycle) 1- Reactions of TCA 2- Energy production of TCA 3- Function and regulationof TCA 4- dysfunction of TCA	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge glycogen metabolism	Glycogen metabolism -Regulation of synthesis -disorders of glycogen metabolism	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge gluconeogenesis	Gluconeogenesis	Theoretical lecture Practical lecture	Daily testing.

			Precursors (such as Pyruvate, lactate, alanine, ect…)	Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
12-14	2	Knowledge diabetes mellitus	Diabetes Mellitus 1- blood glucose and regulation of blood glucose (role of insulin and glucagon hormones in glucose regulation) 2- Hyperglycemia (types of DM) 3- Hypoglycemia	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Review	Review for final exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Biochemistry
Main references (sources)	cholesterol clinical practice guidelines
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Immunology

2. Course Code: MLT214-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Dr. Wid Abdulkhaleq Abd Zaid
Email: wid.abdzaid@atu.edu.iq

8. Course Objectives

Course Objectives	• Identify the most important parts of the immune system related to disease resistance. • Preparing some antibodies and antigens. • Learn how to detect fever, AIDS, and some bacterial diseases.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge definition and classification of immunology	Knowledge of immunology: definition and classification of the sections of immunity, natural and acquired immunity, factors and defenses Natural immunity	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge of the immune system	Knowledge of the immune system, lymphoid tissues and cells, their origin, recipients and stages of	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			maturation, primary and secondary lymphoid organs.		and annual research
3	2	Knowledge phagocytosis	Phagocytosis: macrophages, mononuclear cells, inflammation, and phagocytosis Antigen presenting cells: origin, maturity, receptors, types	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge Antigen and antigenic determination	Antigen and antigenic determination Its definition, characteristics, types of antigens (exogenous and endogenous antigens)	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge definition, composition and properties of antibodies	Definition of antibodies, composition, types, properties, manufacturing and editing	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge Immune response: primary and secondary, their characteristics	Immune response: primary and secondary, their characteristics and differences, regulation of the immune response	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge Major histocompatibility complex (MHC)	Major histocompatibility complex (MHC) Its definition, types, role in	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			antigen presentation		and annual research
8	2	Knowledge complement system	Complements Definition of complement, its activation, methods of activation, inhibitors, diseases associated with complement deficienc	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge cytokines	Cytokines	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge of defense mechanisms by the immune system	Immunity against germs and toxins How the immune system works in defense against germs	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge immunity against viruses	Immunity against viruses, immunity against parasites, immunity against fungi	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge the Anti-tumor immunity	Anti-tumor immunity Definition of tumor, antigens related to the tumor, their types, their relationship to different tumors, methods Escaping the body's immunity	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

13	2	Knowledge definition and patterns of hypersensitivity	Hypersensitivity Its definition, different patterns, and diseases resulting from it	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge natural and acquired immunity	Natural and acquired immune deficiency Types and theories	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge vaccination	Vaccination, types of vaccines	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Basic Immunology
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Protozoa
2. Course Code: MLT215-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12 /2025
5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Assist. Prof. Dr. Haider Hussein Obaid
Email: haider.alseady.dw@atu.edu.iq

8. Course Objectives

Course Objectives	• Identify the form, life cycle, and laboratory diagnosis of most types of pathogenic parasites. • Identify the epidemiology and diseases that occur as a result of parasitic infection and the methods of transmission.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge definition, classification, types of parasites	Defines the parasites ,parasitology types of parasites Types of host, Classification of parasites, Protozoa + metazoan Metazoa [helminthes and arthropoda	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge characteristic features of protozoa	Introduction generally in characteristic feature of protozoa and classification:- Rhizopoda ,Mastigophora ,Cilophora (ciliate) ,Telospora	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge pathogenic amoeba	Class Rhizopoda Pathogenic amoeba, Entamoeba histolytica, Morphology ,life cycle ,Pathogenicity ,Lab.diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge pathogenicity and diagnosis of	Few of morphology ,pathogenicity ,diagnosis of :-	Theoretical lecture method	Daily testing Quarterly tes

		Entamoeba gingivalis	Entamoeba gingivalis, A canthomoeba ,Naegleria	Practical lecture method Method of discussion and dialogue	Discussing quarterly and annual research
5	2	Knowledge non-pathogenic amoeba	Nonpathogenic amoeba Different between Entamoeba coli and E. histolytica. morphology , Lab, diagnosis of Iodamoebabutschlii , Endolimax nana ,E. dispar ,Dientamoeba fragilis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge general characteristics features of mastigophor	Class Mastigophor or Flagellates generally introduction in characteristic feature and classification in (intestinal flagellate, blood and tissue flagellates, genital flagellates). Intestinal Flagellate: - Giardia lamblia ,Chilomastix mesnili ,Trichomonashominis ,Morphology ,life cycle ,pathogenicity ,and lab. Diagnosis.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge genital flagellate	Genital flagellate Trichomonas vaginales, Oral flagellates, Trichomonas tenax. Morphology, pathogenicity and lab. Diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge tissue and blood flagellate	Tissue and blood flagellate Haemoflagellates forms. Lishmania donovani Lishmania tropica Lishmania brazeliencis Morphology ,life cycle ,pathogenicity, Lab. Diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

9	2	Knowledge morphology of Trypanosoma spp	Trypanosoma cruzi Trypanosoma brucei Morphology.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge morphology, life cycle and diagnosis of ciliophra cilata	(Class Ciliophra (cilata Blantidium coli Morphology ,life cycle ,pathogenicity, Lab. Diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge general characteristics features of sporozoa	Class Sporozoa Generally introduction of characteristic features of sporozoa. Life cycle in generally of Plasmodium spp. In man and insects.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge pathogenicity and diagnosis of *Plasmodium spp*	Plasmodium vivax Plasmodium ovale pathogenicity, Lab. Diagnosis Plasmodium malariae Plasmodium falciparum Pathogenicity, Lab. diagnosis and short notes of parasites Babesia spp. The differences in lab. diagnosis with Plasmodium spp.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge characteristics features of *toxoplasma gondii*	Isosporia belli , Toxoplasma gondii Morphology ,life cycle ,pathogenicity, Lab. diagnosis Cryptosporidium spp.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			Morphology ,life cycle ,pathogenicity, Lab. Diagnosis		and annual research
15	2	Review	Review and examination	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical Parasitology
Main references (sources)	medical helminthology protozoa
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Virology
2. Course Code: MLT216-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12/2025
5. Available Attendance Forms: In-person Lectures
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: Maysaa Zaki
Email: zkyyhyy51@gmail.com

8. Course Objectives

Course Objectives	• Identify viruses. • Knowing the types of diseases caused by viruses.

	• . Know how to diagnose viruses and how to treat them.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge General properties of virus	Introduction, General properties of virus, structure, classification of DNA & RNA viruses.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	1	Knowledge replication process of virus nucleic acids	Replication of DNA and RNA virus	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Knowledge virus isolation & cultivation.	Virus isolation & cultivation.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	1	Knowledge chemotherapy	Chemotherapy, antiviral agent & vaccines.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	1	Knowledge influenza viruses	Influenza viruses	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

6	1	Knowledge Paramyxo & Robella viruses	Paramyxo & Robella viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	1	Knowledge enteric viruses	Enteric viruses, Rhinovirus group.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	1	Knowledge pathogenicity of viruses	Pathogenesis of viruses and Genetic of viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	1	Knowledge herpes viruses	Herpes viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	1	Knowledge oncogenic viruses	Oncogenic viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	1	Knowledge hepatitis viruses	Hepatitis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	1	Knowledge rubies & other neurotropic viruses	Rubies & other neurotropic viruses	Theoretical lecture Practical lecture	Daily testing.

			Arbo viruses & viral haemorrhagic viruses	Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
13	1	Knowledge Arbo viruses & viral haemorrhagic viruses	Arbo viruses & viral haemorrhagic viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	1	Knowledge adeno, pox & parvo viruses	Adeno, pox & parvo viruses	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	1	Knowledge retro & Adis viruses	Retro & Adis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

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

Course Description Form

1. Course Name: Medical Ethics

2. Course Code: Med. MLT217-24-CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12/2025

5. Available Attendance Forms: In-person Lectures

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

30 hours/2units

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

Name: Wisam Faris Abd Al-Amir
Email: wisam.jasem@atu.edu.iq

8. Course Objectives

Course Objectives	• **Introducing the basic principles of professional ethics of medical workers.** • **Qualifying graduates for the essential ethics in their interaction with their profession.** • **Achieving harmony within themselves and professional environment.**

9. Teaching and Learning Strategies

Strategy	• Theoretic lectures strategy. • Conversation and discussion strategy. • Regular testing strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Knowledge principles of medical ethics in differer early civilizations	The principles of medical ethics in different early civilizations. The principles of medical professior in the Arabic Islan civilization. The manners of dealing with patients since then until now	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examinati

second	2	Knowledge medical ethics	Medical ethics: definition – concep applications – the relationship betwe the workers.	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examinati
Third	2	Knowledge the basic manners of the Profession	The basic manners the profession: The characteristics a medical worker, commitment, appearance, manne The legal rights of patients. Dealing with the patients and their families	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examinati
Fourth	2	Knowledge connection methods: lingual and nor lingual.	Connection metho lingual and non-lingual. Definition, types, effects, producing successful method How such methods effects manners, listening and how students practice them with practica examples.	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examinati
Fifth	2	Knowledge behavioral tendencies:	Behavioral tendencies: Definition, types, influencing factors measuring method	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examinati
Sixth	2	Knowledge values, habi and traditions	Values, habits and traditions: Definition, types, influencing factors measuring method	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examination.
seventh	2	Knowledge personality types and how to deal with them	Personality types and how to deal with them:	Theoretic lectures strategy.	Daily quizzes Quarterly testing. Annual examination.

			Definition, types, relation to the medical profession. The personality of the technicians and their manifestation	Conversation and discussion strategy.	
Eighth	2	Knowledge mental health improvement	Mental health improvement: Definition, influencing factors the role of mental health in the profession	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examination.
Ninth	2	Knowledge the ethics and the manner of dealing with patients	The ethics and the manner of dealing with patients: Patients reception, dealing with them, earning their trust, and maintain priva Scheduling needed procedures. Preserving the patients belonging	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examination.
Tenth	2	Knowledge the ethics and manners of dealing with medical equipment's and machines	The ethics and manners of dealing with medical equipments and machines: Preparing the essential equipments before work. Maintaining, sustaining and preserving the machines, tools, solutions and different equipmer of the laboratory	Theoretic lectures strategy. Conversation and discussion strategy.	Daily quizzes Quarterly testing. Annual examination.
Eleventh	2	Knowledge applications medical ethics	Applications of medical ethics	Theoretic lectures strategy. Conversation and	Daily quizzes Quarterly testing. Annual examinati

				discussion strategy.	
11. Course Evaluation					
30% for the annual endeavor and 70% for the final exam.					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)		Medical Ethics For the Authority of Technical Institutes Students and Professional Ethics for Medical and Health Technical Education			
Main references (sources)		Non			
Recommended books and references (scientific journals, reports...)		Scientific journals and research in the field			

Course Description Form

1. Course Name: The crimes of the Baath regime in Iraq					
2. Course Code: MLT218-24-CM					
3. Semester / Year: Semester					
4. Description Preparation Date: 20 /12 /2025					
5. Available Attendance Forms: In-person 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: zaid khudhur Email:zaid.bermany@atu.edu.iq					
8. Course Objectives					
Course Objectives		At the end of the course the student will be able to: The student gets to know the concept of crimes. □ Learn about the dictatorship of the former regime			
9. Teaching and Learning Strategies					
Strategy		• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue			
10. Course Structure					
Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**

1	2	Knowledge the concept of crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge the history of crimes by the authority	Understanding the dictatorial regime and avoid it in future	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge the crime department	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge the crime department	Understanding the dictatorial regime and avoid it in future	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge types of international crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge types of international crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge human rights in Roman civilization	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
8	2	Knowledge decisions issued by the Supreme court	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge decisions issued by the Supreme court	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge decisions issued by the Supreme court	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge psychological crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge mechanisms psychological crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge psychological effects crimes	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

14	2	Knowledge baath crimes against religion	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge baath crimes against religion	Understanding the dictatorial regime and avoid it in future	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11.30% for the annual endeavor and 70% for the final exam.

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	The main book supply by the ministry of higher education
Main references (sources)	Al baath crime's
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Second stage\ second semester

Course Description Form

1. Course Name: Bacterial pathogenicity
2. Course Code: MLT221-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 /12 /2025
5. Available Attendance Forms: In-person Lectures
6. Number of Credit Hours (Total) / Number of Units (Total)

   90 hours/6 units
7. Course administrator's name (mention all, if more than one name)

   Name: Dr. bareq A. Allateef
   Email: bareq.as86@gmail.com ,, barq10@atu.edu.iq
8. Course Objectives

Course Objectives	• **Assistance in laboratory investigation of the examined samples by implantation .** • **Assistance in how to isolate and diagnose ailments .** • **Assisting the doctor in diagnostic and therapeutic procedures during the isolation procedure and different genus of pathogenic bacteria study.**

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge systemic bacteriology	Systemic bacteriology, Genus Staphylococcus, General characters , toxin production , enzyme , immunity, Sensitivity test.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge general characteristics of *Streptococcus*	Genus Streptococcus General characters. Bio chemical test, Antigenic characters , M protein Streptococcus group A, diseases, toxin, and immunity.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge *Streptococcus* group A, B,D	Streptococcus group B, C, D. Biochemical reaction, immunity, diseases. Streptococcus pneumonia and Streptococcus variance disease, antigenic structure.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge gram positive bacilli	Gram positive bacilli – Corynebacterium diphtheria.	Theoretical lecture method Practical lecture method	Daily testing Quarterly tes Discussing quarterly

			Shape of bacteria, virulence, toxin, immunity, shick test. Antitoxin, skin test.	Method of discussion and dialogue	and annual research
5	2	Knowledge general characteristics of mycobacterium	Genus Mycobacterium , general characters, Classification of bacteria , growth , antigenic structure , Disease, immunity.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge general characteristic of *Bacillus anthraces*	Genus Bacillus, Bacillus anthraces. General characters, biochemical reaction, antigenic structure, toxin, immunity	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge general characteristics of anaerobic bacteria	Anaerobic bacteria – Clostridium, general characters. Clostridium perifringeus , general characters . Antigen structure, biochemical reaction, virulence, toxin. Clostridium tetani , disease , immunity, antigenic structure	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge general characteristics of Neisseria	Genus Neisseria, general characters, biochemical reaction. Neisseria gonorrhea, antigenic structure, virulence. Neisseria meningitides, immunity, sensitivity test. Antigenic structure , virulence , immunity	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge general characteristics of Haemophilus	Genus Haemophilus, general characters , growth factors , Virulence, immunity.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

			Genus Bordetella, general characters, disease.		and annual research
10-11	2	Knowledge general characteristics of Enterobacteriaceae	Family Enterobacteriaceae , General characters , classification , biochemical reaction , Antigenic characters, sugar fermentation, sensitivity test. Genus Escherichia coli, Klebsiella, diseases, virulence, Immunity.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge general characteristics of Vibirio	Genus Vibirio, history of disease, general characters, Antigenic structure, virulence, immunity, treatment. Classical Vibirio EL-TOR biotype. Vibirio parahaemical. Campylobacter jejuni.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge general characteristics of Brucella	Genus Brucella , general characters , diseases , species , Zoonosis. Yersinia pestis , general characters , virulence , diseases	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge general characteristics of Francisella	Francisella , general characters , transmition diseases , Virulence, syphilis, VDRL. Nocardia , general characters , stin-direct smear . Mycoplasma, shape, virulence, Lab.dignosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

15	2	Knowledge general characteristics of Chlamedia	Chlamydia , general characters , shape , biochemical test , Virulence, immunity	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical microbiology
Main references (sources)	**BASIC BACTERIOLOGY**
Recommended books and references (scientific journals, reports...)	Warren Levinson, MD, PhD San Francisco, California January 2014
Electronic References, Websites	https://www.amazon.com/Medical-Microbiology-Immunology-Eleventh-Science/dp/0071700285

Course Description Form

1. Course Name: Hematology\2

2. Course Code: MLT222-24-CM

3. Semester / Year: Semester

4. Description Preparation Date 20 /12 /2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Ali Mouged Fadell
Email: aldhmoshyali @gmail.com

8. Course Objectives

Course Objectives	• Knowledge of the medical system, laboratory tests, and diagnosis of medical conditions.

	• Knowing blood types, performing all laboratory tests, and diagnosing disease cases. • Knowledge of W.B.C, clotting factors, acute and chronic leukemia

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge haemostasis	Haemostasis , definition and types .The role of blood Vessels and Platelet in Haemostasis.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge coagulation factors	Coagulation factors, name and figures	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge coagulative processes	Coagulative Processes.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge types of haemostasis disorder	Haemostasis disorder types. Haemostasis due to blood vessels disorder	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge blood platelets disorder	Haemostasis due to blood platelet disorder	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

6	2	Knowledge coagulative disorder	Haemostasis due to Coagulative disorder.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge types of white blood cells	The White blood Cells, types.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge maturation of WBCs	maturation of W.B.C.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge function of WBCs	function of W.B.C.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge leukocytosis	Leukocytosis.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge leukopenia	Leukopenia.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	.knowledge definition and	Leukemia, definition and classification	Theoretical lecture Practical lecture	Daily testing.

		classification of leukemia		Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
13	2	Knowledge Chronic and acute myeloid. L.	Chronic and acute myeloid. L.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Knowledge chronic and acute myeloid L.	Chronic and acute myeloid. L.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge chronic and acute monocytic L.	Chronic and acute Monocytic .L	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Clinical hematology in medical practice
Main references (sources)	Non
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Clinical chemistry\2
2. Course Code: MLT223-24-CM
3. Semester / Year: Semester

4. Description Preparation Date: 20 \12\2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name: Assist. Prof. Dr. Thikra jawad

Email: thikra.jawad@atu.edu.iq

8. Course Objectives

Course Objectives	• Conducting all chemical tests on the blood. • Knowing how to conduct laboratory tests, identify diseases, and compare them to nature. • Knowing all the components of carbohydrates, fats, enzymes, proteins, etc.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
3-1	2	Knowledge protein metabolism and renal function	Protein metabolism and renal function 1- Serum Protein (components), 2- Amino acid metabolism, 3- fate of ammonia, 4- Urea cycle, urea metabolism and renal function tests	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6-4	2	Knowledge lipid metabolism	Lipid metabolism 1- fatty acids oxidation 2- ketone bodies Lipid profile and disorder in lipid profile (cholesterol, triglycerides, lipoproteins)	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

7	2	Knowledge disorders of purine and pyrimidine	Disorders of purine and pyrimidine Uric acid metabolism (synthesis and hyperuricemia)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
8	2	Exam	Exam	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
9	2	Knowledge definition of enzyme	Introduction to enzyme (definition of enzymology) Creatin kinase CK (isoenzymes) Lactate dehydrogenase LDH (isoenzymes	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10-11	2	Knowledge liver function tests	Liver function tests Bilirubin metabolism Jaundice (adult and neonatal jaundice) Hepatitis and liver function tests	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge tumor markers	Tumor markers	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13-15	2	Knowledge hormones	Hormones 1- Thyroid hormones (Thyroid function tests, parathyroid hormones) Fertility hormones (testosterone, luteinizing hormone, prolactin, follicular stimulating hormone)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
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11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Biochemistry
Main references (sources)	CHOLESTEROL CLINICAL PRACTICE GUIDELINES
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Clinical Immunology	
2. Course Code: MLT224-24-CM	
3. Semester / Year: Semester	
4. Description Preparation Date:20 \12 \2025	
5. Available Attendance Forms: In-person Lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
90 hours/6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Wid Abdulkhaleq Abd Zaid Email: wid.abdzaid@atu.edu.iq	
8. Course Objectives	
Course Objectives	Identify the most important immune and rheumatic diseases. • Identify diseases of the digestive system and liver. • Learn how to detect autoimmune hepatitis and some other diseases
9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue
10. Course Structure	

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

1	2	Knowledge rheumatic disease	Rheumatic diseases and Rheumatoid arthritis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge systemic erythromatous	Systemic lupus erythromatous and Psoriatic arthritis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge Sjogern˙s sundrome	Ankylosing Spondylitis and Sjogren's syndrome	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge behcet disease	Behcet's disease	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge gluten sensitive entero-pathy	1-Gluten sensitive entero-pathy 2-Ulcerative colitis 3-Crohn's disease	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	2	Knowledge pernicious anemia	Pernicious anemia	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge Diabetes Mellitus Type I	Diabetes Mellitus Type I	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
8	2	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge of autoimmune hepatitis diseases	Autoimmune hepatitis diseases	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge primary biliary cirrhosis and primary sclerosing	Primary biliary cirrhosis and primary sclerosing Cholangitis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge renal diseases	Renal diseases -Circulating immune complex -In situ immune complex formation -Antineutrophil cytoplasmic autoantibodies and associated diseases	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	2	Knowledge respiratory disease	Respiratory disease 1- Drug-induced respiratory disease 2- Eosinophilic pneumonia 3- Asthma	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge immunological thyroid disease	Immunological thyroid disease and Immunological infertility	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

14	2	Knowledge tumor	Tumor and Tumor markers	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Knowledge graft versus host rejection	Graft versus host rejection and transplantation	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Clinical Immunology
Recommended books and references (scientific journals, reports...)	Scientific journals and research in the field
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Helminthes

2. Course Code: MLT225-24-CM

3. Semester / Year: Semester

4. Description Preparation Date : 20 \ 12\2025

5. Available Attendance Forms: In-person Lectures

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

90 hours/6 units

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

Name Assist. Prof. Dr. Haider Hussein Obaid

Email: haider.alseady.dw@atu.edu.iq

8. Course Objectives

Course Objectives	• Knowing the types of parasitic worms and how to diagnose them. • Knowledge of various parasitological analyzes to diagnose the types of parasites. • . Knowledge of all diseases through cultivation of slides.

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge general characteristic features of metazoa Helminthes	In generally introduction of characteristic features of metazoa Helminthes (cestoda ,trematoda and nematoda)	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
2	2	Knowledge class Cestoda	Class Cestoda Taenia saginata Taenia solium Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	2	Knowledge Hymenolepis nana	Hymenolepis nana Hymenolepis diminuta Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	2	Knowledge Echinococcus granulosis	Echinococcus granulosis Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	2	Knowledge class Trematoda	Class Trematoda In general life cycle of Schistosoma spp. Schistosoma haematobium Schistosoma	Theoretical lecture method Practical lecture method	Daily testing. Quarterly test. Discussing quarterly

			mansoni Schistosoma japonicum Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Method of discussion and dialogue	and annual research
6	2	Knowledge liver flukes	Short notes of (liver flukes) Fasciola hepatica (Lung flukes) Fasciola buski (intestinal flukes) Heterophyes heterophes Lab. diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	2	Knowledge class nematode	Class Nematode Ascaris lumbricoides Trichuris trichura Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	2	Knowledge Enterobius vermicularis	Enterobius vermicularis Ancylostoma dudenale Necator americanus Morphology ,life cycle ,pathogenicity, Lab. diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
9	2	Knowledge larva migrans in human	Larva migrans in human -cutenous larva migrans Ancylostoma caninum Schistosoma sp.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	2	Knowledge subcutenous larva migrans (scrow worm)(Myiasis)	subcutenous larva migrans (scrow worm)(Myiasis) -visceral larva migrans Toxocara spp. pathogenicity, Lab. diagnosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	2	Knowledge Filaria Wuchereria bancrofti Loa loa	Filaria Wuchereria bancrofti Loa loa	Theoretical lecture Practical lecture	Daily testing.

			Morphology ,life cycle ,pathogenicity, Lab. Diagnosis	Method of discussion and dialogue	Quarterly test. Discussing quarterly and annual research
12	2	Knowledge short notes of class Annelida	Short notes of class Annelida Hirudo medicinalis in human morphology and lab. Diagnosis. And from metazoan Class Arthropoda	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	2	Knowledge short notes of morphology and lab. diagnosis , some pathogenicity of nsect and archnide	Short notes of morphology and lab. diagnosis , some pathogenicity of 1-insect (Anopheline ,Sand fly ,Tse – tse fly ,Reduviid bug ,Culex , lice ,Fleas , Cimex) 2-Arachnids Mites , tick	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	2	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
15	2	Exam	Examination (Final)	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Medical Parasitology
Recommended books and references (scientific journals, reports...)	medical helminthology protozoa
Electronic References, Websites	Google scholar

Course Description Form

1. Course Name: Medical Mycology
2. Course Code: MLT226-24-CM
3. Semester / Year: Semester
4. Description Preparation Date: 20 \12 \2025
5. Available Attendance Forms: In-person Lectures
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: Assist. Lecturer Maha Adil Hussein Email: maha.hussain.iba100@atu.edu.iq

8. Course Objectives	
Course Objectives	. Study on medicinal mushrooms. • Knowing the types of diseases they cause. • . Knowing how to diagnose diseases and how to treat them.

9. Teaching and Learning Strategies	
Strategy	• Theoretical lecture method. • Practical lecture method. • Method of discussion and dialogue

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Knowledge medical fungi	Introduction of medical Fungi	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

2	1	Knowledge structure, reproduction and classification.	Structure, reproduction and classification.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
3	1	Knowledge cultural characteristics of mycosis	Cultural characteristics, type of mycosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
4	1	Knowledge general principle of treatment	General principle in treatment.	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing Quarterly tes Discussing quarterly and annual research
5	1	Knowledge Actinomyces, Nocardia, Mycetoma	Actinomyces, Nocardia, Mycetoma	Theoretical lecture method Practical lecture method Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
6	1	Knowledge Dermatophytes	Dermatophytes	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
7	1	Knowledge candidiasis	Candidiasis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
8	1	Knowledge cytococcsis	Cytococcsis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly

					and annual research
9	1	Knowledge cryptococcusis	Cryptococcusis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
10	1	Knowledge Histoplasmosis, sporotrichosis	Histoplasmosis, sporotrichosis	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
11	1	Knowledge Micellanaus fungi ,Aspergillosis, mucor	Micellanaus fungi ,Aspergillosis, mucor	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
12	1	Knowledge Rhizopus & penicillium	Rhizopus & penicillium	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
13	1	Knowledge antifungal agents	Anti-fungal agents , antibiotic produced by fungi	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
14	1	Review	Review	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

15	1	Exam	Exam	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11. Course Evaluation: the evaluation method is as follows: 15% for the practical exam and 25% for the theoretical exam to extract the annual effort from 40%. As for the final exam, it is 25% for the practical exam and 35% for the theoretical exam.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical mycology
Main references (sources)	Levinson, jawitz
Recommended books and references (scientific journals, reports...)	Scientific journals, periodicals and research in the field of medical mycology.
Electronic References, Websites	Google scholar

Course Description form

1- Course Name:
Computers and Artificial Intelligence
2- Course Code:
MLT227-24-CM
3- Semester / Year
Second semester
4- Description Preparation Date:
20 /12 /2025
5- Available Attendance Forms:
In-person Lecturers
6- Number of Credit Hours (Total) / Number of Units (Total)
45 hours per semester, total number of units (3).
7- Course administrator's name (mention all, if more than one name)
Name: Syffi Mohammad Monji Email: inb.syffi10@atu.edu.iq Dr. Saif Obeed Hussein
8- Course Objectives

Course Objectives	The student must be able to use a computer, be familiar with its use, and understand how to use its software

9- Teaching and Learning Strategies

Strategy	1- Theoretical lecture method 2- Practical lecture method 3- Method of discussion and dialogue

10-Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
(1)	1	Knowledge security and networking	Security and Networking: What is a network? Types of networks. Basic network components.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(2)	1	Knowledge security and networking	Security and Networking (Cont.): Network Security Basics. Understanding network threats	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(3)	2	Knowledge E-commerce	E-commerce: Concepts of Electronic banking services this include online banking: ATM and debit card services, Phone banking, SMS banking, electronic alert, Mobile banking	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(4)	1	Knowledge computer troubleshooting	Computer Troubleshooting: Identifying and solving common hardware and software problems that computer users encounter.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(5)	1	Knowledge computer troubleshooting	Computer Troubleshooting (Cont.): Basic Troubleshooting techniques and tools	Theoretical lecture Practical lecture	Daily testing. Quarterly test. Discussing quarterly and

			for diagnosing and resolving issues.	Method of discussion and dialogue	annual research
(6)	1	Knowledge Al	Introduction to Al: Definition of Al, History of Al, Al Techniques and Approaches.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(7)	1	Knowledge Al	Introduction to Al(Cont.): Key Characteristics of Al, Benefits of Al, Challenges and Ethical considerations.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(8)	1	Knowledge roles of Al	The Role of Al in Modern Smartphones: /\I-Driven Mobile Technologies, Virtual Assistants (Siri, Google Assistant,, Alexa).	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(9)	1	Knowledge of Al in modern samrtphones	The Role of Al in Modern Smartphones (Cont.):Adaptive Learning,Real-Time Translation Services.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(10)	1	Knowledge applications and tools of Al	Applications and Tools of Al: Overview of Al Applications in Various Industries, Education and Healthcare.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(11)	1	Knowledge applications and tools of Al	Applications and Tools of Al (Cont.): Transportation, Marketing and Advertising.	Theoretical lecture Practical lecture Method of discussion	Daily testing. Quarterly test. Discussing quarterly and annual research

				and dialogue	
(12)	1	Knowledge applications and tools of Al	Applications and Tools of Al(Cont.): Finance, Robotics and Automation Technologies	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(13)	1	Knowledge Al and society	AI and Society: How Al affects social, Al and international relations, Al and the future of humanity.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(14)	1	Knowledge ethical challenges	Ethical Challenges in Al : Al ethics, privacy and surveillance, the impact of Al on the job market.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research
(15)	1	Knowledge the future of Al	The Future of Al: Future trends in Al, recent research and emerging technologies.	Theoretical lecture Practical lecture Method of discussion and dialogue	Daily testing. Quarterly test. Discussing quarterly and annual research

11-Course Evaluation
Monthly theoretical exam 25 +Monthly practical exam 15 +Final theoretical exam 35 +Final practical exam 25

12-Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Non
Main references (sources)	l. Graham Brown, David Watson, "Cambridge IGCSE Information and Communication Technology", 3rd Edition (2020) 2. Alan Evans, Kendall Martin, Mary Anne Poatsy, "Technology In Action Complete" ,16th Edition (2020).

	3. Ahmed Banafa, "Introduction to Artificial Intelligence (AD", 1st Edition (2024). 4. Al-Khader Ali Al-Khader, Researcher, “Computer Basics 2016”. 5.Dr. Adel Abdel Nour, Introduction to the World of Artificial Intelligence, 2005
Recommended books and references (scientific journals, reports...)	https://www.noor-book.com/
Electronic References, Websites	https://www.noor-book.com

Course Description Form

1. Course Name: Arabic language

2. Course Code:

MLT228−24−CM

3. Semester / Year: Semester

4. Description Preparation Date: 20 /12 /2025

5. Available Attendance Forms: In-person 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: Ali Gaber
Email: ali.gabr.bib5@atu.edu.iq

8. Course Objectives

Course Objectives	• **Arabic language grammar** • **Knowing the original and subsidiary grammatical signs.** • **Knowledge of grammar and Quranic miracles.**

9. Teaching and Learning Strategies

Strategy	• Theoretical lecture method. • Method of discussion and dialogue

10. Course Structure

week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Knowledge diacritical marks and Secondary diacritical marks	Original diacritical marks (Damma, Fatha, Kasra)	Theoretical lecture	Monthly and quarterly exam

			Secondary diacritical marks: waw, alif, ya		
2	2	Knowledge Nominal sentence,	Nominal sentence, types of subject and types of predicate	Theoretical lecture	Monthly and quarterly exam
3	2	Knowledge an wakhawatiha	an wakhawatiha	Theoretical lecture	Monthly and quarterly exam
4	2	Knowledge The difference between (that, that)	The difference between (that, that)	Theoretical lecture	Monthly and quarterly exam
5	2	Knowledge The five verbs	The five verbs	Theoretical lecture	Monthly and quarterly exam
6	2	Knowledge kan wakhawatuha	kan wakhawatuha	Theoretical lecture	Monthly and quarterly exam
7	2	Knowledge linguistic errors	linguistic errors	Theoretical lecture	Monthly and quarterly exam
8	2	Knowledge Dual and its syntax	Dual and its syntax	Theoretical lecture	Monthly and quarterly exam
9-10	2	Knowledge Quranic expression	Quranic expression (grammatically in terms of sentence structure and text, rhetorically in terms of rich impact, Return to the source: The Book of Quranic Expression by Dr. Fadhel Al-Samarra'i	Theoretical lecture	Monthly and quarterly exam
11	2	Knowledge The poet Badr Shaker Al-Abab	The poet Badr Shaker Al-Abab	Theoretical lecture	Monthly and quarterly exam
12	2	Knowledge Linguistic information	Linguistic information (synonyms and antonyms, linguistic differences, grammatical equivalents)	Theoretical lecture	Monthly and quarterly exam
13-14	2	Knowledge Types of plurals	Types of plurals (masculine plural malam, feminine	Theoretical lecture	Monthly and quarterly exam

			plural madalim, broken plural)		
15	2	Knowledge Grammar arrangement	Grammar arrangement (Arabic grammar rules in the educational board, corrections for grammar)	Theoretical lecture	Monthly and quarterly exam

11. Course Evaluation: 40% monthly exam ----- 60% final exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Non
Main references (sources)	Non
Recommended books and references (scientific journals, reports...)	Arabic Language for Iraqi Universities Prepared by: Dr. Safaa Kadhim Makki Dr. Lama Muhammad Younis
Electronic References, Websites	Google scholar