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

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.

جمهورية العراق
وزارة التعليم العالي والبحث العلمي جهاز الاشراف والتقويم العلمي
قسم الاعتماد/دائرة ضمان الجودة والاعتماد الاكاديمي
المجلس الوطني لاعتماد برامج كليات ومعاهد التقنيات الصحية والطبية

ACADEMIC PROGRAM DESCRIPTION FORM

University Name: Al-Furat Al-Awsat Technical University

Faculty/Institute: Karbala Technical Institute

Scientific Department: : Medical laboratory Technologies Department.

Academic or Professional Program Name: : Medical laboratory Technologies.

Final Certificate Name: Technical diploma

Academic System: Semester study system

Description Preparation Date: /6/2025

File Completion Date: /6/2025

Signature:

Head of Department Name:
Lec. Aqeel Salman Abd AlSalam
Date: / 6/ 2025

Signature:

Scientific Associate Name:
Assist.Prof.Dr. Mohammed Fadhil Neamah
Date: 12/ 6 / 2025

*** The file is checked by:**

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Signature:

Assist.Prof.Ali Neamah Hasan AL-Aaragi

Date: / 6 / 2025

19-6-2025 **Approval of the Dean**

Program Vision

Providing graduates with the necessary knowledge and experience in the fields of work in medical laboratories, which include isolating and diagnosing bacteria present in various clinical samples, preparing tissue slides for various organs of the body and preparing them for examination. Thus, the graduate is qualified and acquires scientific and practical skills and has a positive impact on the development of the governmental and private health sector and spreading awareness in Areas of public health in society.

Program Mission

Achieving excellence in teaching and education, acquiring scientific skills, and implementing educational and training programs and research activities, which leads to enhancing the high capacity in diagnosing various diseases and developing preventive and curative health services so that they are accessible to all members of society.

Program Objectives

The department aims to…

1. Highly skilled technical personnel graduate capable of working in medical laboratories, conducting routine laboratory analyses, general chemical examinations, and examining various body fluids such as cerebrospinal fluid, sputum, and semen.
2. Graduate students conduct various researches and contribute to raising the level of health education and cooperate with various organizations in meeting the therapeutic and preventive needs of individuals and society.
3. Graduating technical staff with a high level of knowledge in operating and maintaining laboratory equipment, as well as being able to keep pace with ongoing scientific and technological developments through the possibility and ease of updating information and topics on websites.

Program Accreditation

The established programs are accredited by the Ministry of Higher Education and Scientific Research/Al-Furat Al-Awsat Technical University.
In addition to the World Health Organization WHO.

Other external influences

- Scientific research related to the department's specialty.
- The World Wide Web (the Internet).
- Regular and digital libraries.
- Summer training in government hospitals.

Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	1	2	7%	Nothing
College Requirements	3	8	20%	Nothing
Department Requirements	14	55	73%	Nothing
Summer Training	Two months	/	/	Nothing
Other	Nothing	Nothing	Nothing	Nothing

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

Program Description

Year/Level		Course Code	Course Name	Credit Hours	
				Theoretical	Practical
First Stage	First semester	M.L.T	Medical laboratory Technologies	12	20
	Second Semester	M.L.T	Medical laboratory Technologies	14	17
Second Stage	First semester	M.L.T	Medical laboratory Technologies	13	22
	Second Semester	M.L.T	Medical laboratory Technologies	11	24

Expected learning outcomes of the program

Knowledge

A- Cognitive objectives

A-1: Complete knowledge of laboratory methods for diagnosing microorganisms such as bacteria, fungi, parasites, and viruses.

A-2: Full knowledge of modern laboratory techniques, quality management and quality control in medical laboratories.

A-3: Complete knowledge of conducting immunological and serological tests.

A-4: Complete knowledge of conducting general blood tests, the tests required to perform blood transfusions, and tissue tests.

A-5: Full knowledge of clinical chemistry tests and how to conduct them.

Skills

B- The program's skill objectives

B-1: Acquires advanced experience in microbial diagnosis.

B-2: Acquires advanced experience in diagnosing blood diseases.

B-3: Acquires extensive experience in diagnosing the defect occurring in the most important organs of the

human body through conducting tests on the chemical and immunological functions of the organs. B-4: Gain experience in working with the latest laboratory technologies and the ability to manage quality and quality control in medical laboratories.	
Ethics	
Learning Outcomes 4	Learning Outcomes Statement 4
Learning Outcomes 5	Learning Outcomes Statement 5

Teaching and Learning Strategies

- Cooperative education strategy.
- Brainstorming education strategy.
- Educational strategy, collaborative concept planning.
- Strategy education real-time feedback.
- Education strategy notes series.
- Education strategy by exchanging opinions and discussion.
- Educational strategy by presenting information.

9. Evaluation methods

1- Evaluation is carried out through theoretical, practical and applied tests on materials, devices and laboratory equipment available in the department, and Laboratory reports.
2- Daily exams.
3- Quarterly exams
4- Final exams.
5- Practical projects.

Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Veterinary Medicine And Surgery	Parasitology			√	
Assistant Professor	Microbiology	Industrial Microbiology			√	
	Medical Laboratory Science	Medical Viruses			√	
	Microbiology	Medical Microbiology			√	
Lecturer	Chemistry	Clinical Biochemistry			√	

Assistant Lecturer	Microbiology	Immunology			√	
	Animal Physiology	Clinical, Chemical And Biological Physiology			√	
	Medical Laboratory Science	Medical Laboratory Science			√	
	Microbiology	Mycotoxicology			√	
	Parasitology	Zoology			√	
	Biology	Medical Physiology			√	
	Medical Laboratory Science	Medical Laboratory Science			√	
	Biology	Biology			√	
	Chemistry	Biochemistry			√	
	Environmental Science	Environmental Science			√	
	Biology	Medical Microbiology			√	
	Statistics	Statistics			√	
	Law	Law			√	

Professional Development

Mentoring new faculty members

• Encourage them to participate in specialized courses within their specialty.
• Participation in holding seminars, workshops, and training programs.
• Participation in teaching methods courses to acquire different skills and methods in teaching.

Professional development of faculty members

• Continuous development of teaching capabilities in a manner consistent with cognitive development in the field of specialization.
• Developing the educational system so that it rises to high quality and solid specifications and supports innovation and creativity to serve society.
• Encouraging the participation of teachers in scientific programs and specialized courses and giving lectures in corresponding institutes and colleges to enhance academic and professional partnerships with reputable universities and institutions.

Acceptance Criterion

According to the controls specified by the Ministry of Higher Education and Scientific Research through the central admission portal and the special controls for admission to colleges and institutes approved by the Ministry, provided that the student holds a preparatory certificate in the scientific/biological stream exclusively."

The most important sources of information about the program
• Methodical and Text books, educational portfolios for professors, scientific research and theses within the specialty, the Internet. • The official website of the Technical Institute (https://ikr.atu.edu.iq)

Program Development Plan
• Applied education in health institutions. • Using modern means of communication such as the Internet and others. • Using modern means of illustration and advanced laboratory equipment. • Conducting scientific conferences for the institute or student conferences within the institute or with the participation of corresponding institutes. • Scientific seminars and quarterly seminars for the department. • Establishing specialized workshops for graduate and continuing students by professors.

Program Skills Outline

Year/Level	Course Code	Course Name	Basic or optional	Required program Learning outcomes												
				Knowledge					Skills				Ethics			
				A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	C4
First Stage/ First semester	L.T.	Laboratory Techniques	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	M.P.	Microbial preparation	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	L.I.	Laboratory Instrument	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	H	Histology	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	A.C.	Analytical Chemistry	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	F.N.	Fundamentals of Nursing	Assistant	√	√	√	√	√	√	√	√	√	√	√	√	√
	C.A.	Computer application	Assistant	√	√	√	√	√	√	√	√	√	√	√	√	√
First Stage/ Second Semester	Q.C.	Quality control	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	H.T.	Histological techniques	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	M.B.	Molecular biology	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	L.S.	Lab. Safety	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	B.T.	Blood transfusion	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	B.C.	Biochemistry	Specialized	√	√	√	√	√	√	√	√	√	√	√	√	√
	H.R.D.	Human right &Democratic	Assistant	√	√	√	√	√	√	√	√	√	√	√	√	√

	E.L.	**English language**	**Assistant**	√	√	√	√	√	√	√	√	√	√	√	√	√
Second Stage/ First semester	**M.**	**Microbiology**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	H.1	**Haematology\1**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	C.C.1	**Clinical chemistry\1**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	I.	**Immunology**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	P.	**Protozoa**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	V.	**Virology**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	M.E.	**Medical Ethics**	**Assistant**	√	√	√	√	√	√	√	√	√	√	√	√	√
Second Stage/ Second Semester	**B.P.**	**Bacterial Pathogenicity**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	H.2	**Hematology\2**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	C.C.2	**Clinical chemistry\2**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	C.I.	**Clinical Immunology**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	H.	**Helminthes**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	M.M.	**Medical Mycology**	**Specialized**	√	√	√	√	√	√	√	√	√	√	√	√	√
	G.P	**Graduation project**	**Assistant**	√	√	√	√	√	√	√	√	√	√	√	√	√

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

COURSE DESCRIPTION FORMS FOR THE FIRST YEAR/ FIREST SEMESTER

Description Form to Laboratory Techniques

1. Course Name:	
Laboratory Techniques	
2. Course Code:	
L.T.	
3. Semester / Year:	
First Semester / First Year	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
In presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist.Prof.Dr. Balqees Sadoon Jasim Assist. Lec.Israa Jawad Abdul_Rasul **Email: inkr.blk2@atu.edu.iq israaalasa@gamil.com**	
8. Course Objectives	
Course Objective	**General Goals:** The student will be able to learn about the basic principles of medical laboratories, how to work within laboratories, and perform basic examinations within medical laboratories. **Special:** The student will be able to: 1. Learn about the importance of medical laboratories and how to work within them. 2. To learn about sterilization methods and the types of risks inside laboratories, and to learn about safety procedures inside medical laboratories. 3. Learns how to perform the most important medical examinations, which are general urine tests, vaginal discharge, and semen examination, in addition to how to perform bacterial culture in the laboratory. 4. To learn about the latest and most important laboratory techniques used in laboratory diagnosis of diseases.
9. Teaching and Learning Strategies	

Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First to Third	2	- Developing student knowledge through the use of advanced teaching methods. - Raising the level of motivation for learning among students in its various types: internal motivation, social motivation, and achievement motivation. - Helping the student ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow up and continuous improvement. - Helping the student to emphasize the issue of quality assurance in academic programs.	**Introduction to Medical lab. Techniques includes** **- Identify the all types of laboratory glasses , plastic ware and modern instrument that used in medical laboratory.** **- Sterilization. Identify ways of cleaning, 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 levels and types of hazards, with safety in medical laboratory.**	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions
Fourth	2	=	**Samples collection handling.**	=	=

			- Samples collection different lab. Investigati samples transport, sam preparation.		
Fifth	2	=	**Culturing of microorganis types of Culture me different samples used culture, bacterial gro curve, MO characteriza (chemical tests for identification)**	=	=
Sixth	2	=	**Urine samples: U formation, Properties of ur chemical and phys investigations, microsc examination.**	=	=
Seventh	2	=	**Stool sample: formation, properties, culture, general examination.**	=	=
Eighth	2	=	**Seminal Fluid: Format organs of reproductive tr characterization of se fluid, investigations that u on seminal fluid, seminal f examination, fructose antisperm antibody (se and semen). Total sp count in Neubar cham Types of normal and abnor of Sperms character study the way of writing final report.**	=	=
Ninth	2	=	**Agglutination techniques**	=	=
Tenth	2	=	**Advance techniques -Enzyme-linked immunosorbent as (ELISA) princi applications**	=	=
Eleventh	2	=	**Radioimmunoassay (R principle, applications**	=	=
Twetveth	2	=	**Immunofluoresence techniq**	=	=
Thirteenth	2	=	**Polymerase chain reac (PCR), types princi applications**	=	=
Fourteenth	2	=	**Real-time PCR**	=	=
Fifteenth	2	=	**Review**	=	=
The practical structure of the course					
First to Third	4	- Developing student knowledge through the use of advanced	**Introduction on the subjec medical laboratory techniq - Glassware and materials u in some tests.**	1. The lecture. 2. Scientific laboratories.	Daily, oral and written examinations,

		teaching methods. - Raising the level of motivation for learning among students in its vario types: internal motivation, social motivation, and achievement motivation. - Helping the student ensure that decisio related to the curricula and educational environment are rational. - Promoting the philosophy of follo up and continuous improvement. - Helping the student emphasize the issu of quality assuranc in academic programs.	**Disinfection and steriliza (Chemical and physi - biological and chem hazards and safety**	3. Systematic training. 4. Summer training	reports, discussio
Fourth	4	=	**Samples collection and handling. - Samples collection for different lab. Investigations samples transport, samples preparation.**	=	=
Fifth	4	=	**Culturing of microorganisn types of Culture media, preparation of culture medi**	=	=
Sixth	4	=	**Urine samples: Chemical ar physical investigations, microscopic examination. Culture and sensitivity**	=	=
Seventh	4	=	**Stool sample: General examination. Culture and sensitivity**	=	=
Eighth	4	=	**Seminal Fluid: Seminal flui examination Liquification time, physical examination, microscopic examination. Fructose test.**	=	=

Ninth	4	=	**Heamagglutination test**	=	=
Tenth	4	=	**Advance techniques -Enzyme-linked immunosorbent assay (ELI procedure, troubleshoot. Cutoff value, stand curve**	=	=
Eleventh	4	=	**Radioimmunoassay (RIA) procedure, troubleshoot.**	=	=
Twetveth	4	=	**Immunofluoresence techniq**	=	=
Thirteenth	4	=	**Polymerase chain reaction (PCR), types procedure, ge electrophoresis**	=	=
Fourteenth	4	=	**Real-time PCR, procedure application in medical lab.**	=	=
Fifteenth	4	=	**Review**	=	=

10. 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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any	• **Basic Clinical Laboratory Techniques.** • **Essentials Of Medical Laboratory practice**
Main references (sources)	• **A Manual of Laboratory And Diagnostic Tests.** • **Fundamentals Of Urine And Body Fluid Analysis**
Recommended books and references (scientific journals, reports...)	• **Medical Laboratory Science Examination Review.** • **Tietz Clinical Guide To Laboratory Tests**
Electronic References, Websites	https://ikr.atu.edu.iq , https://microbenotes.com/ https://medicallabscientist.org/ https://labpedia.net

Update report:

1. It was updated in the first week of the curriculum, as shown in the table below.

Before updating	After update
Introduction to Medical lab. Techniques includes - Identify the various laboratory glasses and how to deal with laboratory methods.	**Introduction to Medical lab. Techniques includes - Identify the all types of laboratory glasses , plastic ware and modern instrument that used in medical laboratory.**

2.It was updated in the third week of the curriculum, as shown in the table below.

Before updating	After update
Laboratory safety and how to avoid accidents and errors that are inadvertently laboratory in a laborato (first aid, biochemical hazards, and biological hazards and biological and chemical safety.	**Laboratory safety levels and types of hazards, with safety in medical laboratory.**

Description Form to Microbial Preparation

1. Course Name:
Microbial Preparation
2. Course Code:
M.P.
3. Semester / Year:
First year / First semester
4. Description Preparation Date:
14/1/2025
5. Available Attendance Forms:
Present
6. Number of Credit Hours (Total) / Number of Units (Total)
5th hours (2 Theoretical + 3 Practical)/ Number of Total unit 10 unite
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Thuraya Aamer Habeeb Assist lect. Zainab Abd Alhassan Alhussain Email: dw.thr@atu.edu.iq zainab.fadel.ikr29@atu.edu.iq
8. Course Objectives
Course Objectives
9. Teaching and Learning Strategies
Strategy: - Cooperative education strategy. - Brain storming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.
10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	- Raising the level of motivation for learning in its various types: internal motivation, social	Definition of some terminology that deals with histology , cytology,... etc.	**1. Lecturer** **2. Scientific** Lab 3. Systematic training. 4. Summer train	**1. Daily Quick Qui** **2. 2. Oral exams** **3. Theoretical exa** **4. Reports** **5. dissuasion**

		motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensure accountability and ensure the quality of academic programs			
Second	2	=	Sample collection, biopsy, and autops	=	=
Third & fourth	2	=	Steps of preparing tissue for study, Handling of Specimen, fixation, fixatives, Factors Affecting on Fixation	=	=

Fifth & Sixt	2	=	Routine fixatives a special fixatives.	=	=
Seventh	2	=	Washing, solution time	=	=
Eighth	2	=	Dehydration , dehydrants .	=	=
Ninth	2	=	Clearing ,clearing agents	=	=
Tenth	2	=	Infiltration ,types c waxes	=	=
Eleventh	2	=	blocking and trimming .	=	=
Twelfth	2	=	Microtomes, Sectioning, mounting and staining sections	=	=
Thirteenth& Fourteenth	2	=	Review	=	=
Fifteenth	2	=	Final exam	=	=
The practical structure of the course					
First	3	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to	Introduction to histological and cytological techniques		

		identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensure accountabilit and ensure the quali of academic progran			
Second	3	=	Instruments , tools , glass wares	=	=
Third	3	=	Preparation of solution used .	=	=
Four & Fifth	3	=	Steps of preparing the tissues with th solutions .	=	=
Sixth	3	=	Doing steps of preparation .	=	=
Seventh & Eighth	3	=	Blocking and embedding	=	=
Ninth	3	=	Trimming .	=	=
Tenth	3	=	Test for blocking a trimming .	=	=
Eleventh	3	=	Sectioning .	=	=
Twelfth	3	=	Sectioning and errors in sectionin	=	=
Thirteenth Fourteent	3	=	Review	=	=
Fifteenth	3	=	Final exam	=	=

10. 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	
11. Learning and Teaching Resources	
Required textbooks (curricular books, if any	**Theory and practice of histological technique Bancroft**
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Internet
Electronic References, Websites	**(https://ikr.atu.edu.iq)**

Update report:

1. It was updated in the third and fourth week of the curriculum, as shown in the table below.

Before updating	After update
Steps of preparing tissue for study, fixation, fixatives	**Steps of preparing tissue for study, handling of Specimen, fixation, fixatives Factors Affecting on Fixation.**

2.It was updated in the twelfth week of the curriculum, as shown in the table below.

Before updating	After update
Microtomes, sectioning	**Microtomes, sectioning, mounting and staining sections**

Description Form to Laboratory Instrument

1. Course Name:

Laboratory Instrument

2. Course Code:

L.I

3. Semester / Year:

1 st course / 1 st Year

4. Description Preparation Date:

30/1/2025

5. Available Attendance Forms:

Student presence and attendance record through attendance register

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

2 Theory + 2 Practical = 4 total

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

Name: zahraa qais jassim
Email: zahraa.jasm.ikr22@atu.edu.iq

8. Course Objectives

Course Objectives	**1- Enable the student to understand the main functions of laboratory instruments.** **2- Enabling the student to determine the importance of these devices to make the students able to deal with laboratory instruments.**

9. Teaching and Learning Strategies

Strategy	1- Knowledge and Understanding. 2- Determining the importance of laboratory devices and how to maintain them . 3- Explanation of the handling and maintenance of devices.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st.	2	- **The student understands the topic**	**Microscope** Uses, main parts, principle of work, kinds, type of condenser, operation, cleaning , service and maintenance **Balances** Uses , types, main parts, principle of operation service and maintence	1-**Lecture** **2- Scientific laboratories.** **3-Systematic training**. =	Quizze =
2nd.	2				

3th.	2		**CBC Analyzer** Blood component analysis	=	=
4th.	2		**Flame photometry** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenace		
5th.	2		**Fume hood** introduction, uses, main parts, types **CENTRIFUGE** Uses,types,main parts,principle of operation, operation and maintenanc	=	=
6th.	2		**AUTOCLAVES** Uses , types, main parts,principle of operation, operation and maintenanc	=	=
7th.	2		**PH METERS** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenance	=	=
8th.	2		**MICROTOMES** Uses,types,main parts,principle of operation, operation and maintenanc	=	=
9th.	2		**ELECTROPHORESIS** uses, main parts, types , atomizers, principle of operation ,operation and maintenance	=	=
10th.	2		**HEATING INSTRUMENTS(WARER BATH OVEN &NINCUBATION)** Uses, types, main parts, principle of operation, operation and maintenanc	=	=
11th.	**2**		**WATER PURIFICATION (DISTILLATORS&DEAIONIZE** Distillatory , deionizer , uses, main parts, operation and maintenance.	=	=
12th.	2		**AUTOANANLYZERS**		

13th.	**2**		introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenance .	=	=
				=	=

The practical structure of the course

Week	Hour	Required Learning Outcomes	Unit or subject name	Learn meth	Evaluat metho
1st.	2	**The student understands t topic**	**Microscope** Uses, main parts, principle of work, kinds, type of condenser, operation, cleaning , service and maintenance	1-**Lecture 2- Scientific laboratories. 3-Systematic training**.	Quizze
2nd.	2		**Balances** Uses , types, main parts, principle of operation service and maintence	=	=
3th.	2		**Photometry Introduction, light and wave length** ,beer lamberts law ,type of photometers, main parts, filters, prisı and diffraction gratings, principle of operation and maintenance	=	=
4th.	2		**Flame photometry** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenace	=	=
5th.	2		**Atomic Absorbition Spectrophotometry** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenace	=	=
6th.	2		**CENTRIFUGE** Uses,types,main parts,principle of operation, operation and maintenanc	=	=

7th.	2		**AUTOCLAVES** Uses , types, main parts,principle of operation, operation and maintenanc	=	=
8th.	2		**PH METERS** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenance	=	=
9th.	2		**MICROTOMES** Uses,types,main parts,principle of operation, operation and maintenanc	=	=
10th.	2		**ELECTROPHORESIS** uses, main parts, types , atomizers, principle of operation ,operation and maintenance	=	=
11th.	**2**		**HEATING INSTRUMENTS(WARER BATH OVEN &NINCUBATION)** Uses, types, main parts, principle of operation, operation and maintenanc	=	=
12th.	**2**		**WATER PURIFICATION (DISTILLATORS&DEAIONIZEI** Distillatory , deionizer , uses, main parts, operation and maintenance.	=	=
13th.	**2**		**AUTOANANLYZERS** introduction, uses, main parts, types atomizers, principle of operation ,operation and maintenance .		

10. 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	
11. Learning and Teaching Resources	
Required textbooks (curricular boc	

if any)	
Main references (sources)	Mary C. Haven, Gregory A. Tetrault, and Jerald R. Schenken. Laboratory Instrumentation, 4th Edition
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://ikr.atu.edu.iq

Update report:

Before Update	After Update
Photometry **Introduction, light and wave length ,beer lamberts law ,type of photometers, main parts, filters, prisms and diffraction gratings, principle of operation and maintenance** **.**	**Third week** **CBC Analyzer** **Blood component analysis**
Atomic Absorbition Spectrophotometry **introduction, uses, main parts, types , atomizers, principle of operation ,operation and maintenace**	**Fifth week** **fume hood** **introduction, uses, main parts, types .**

Description Form to Histology

1. Course Name:	
Histology	
2. Course Code:	
H.	
3. Semester / Year:	
The first course / fist stage	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
Mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 5 hours (2 theoretical + 3 practical) / total number of units: 5 unit	
7. Course administrator's name (mention all, if more than one name)	
Name: **Prof. Zainab Abed Mohsen** Email: **drzainababed@atu.edu** **Assist. lec. Abdul Salam H. Hamza** **salam.hamza@atu.edu.iqpsk**	
8. Course Objectives	
Course Objectives Objectives of the study subject	**Objectives of the article: -** The student will learn about the natural tissue structure of the human body's organs, which will enable him to imagine the effect of diseases on these tissues. **Special:** The student will be able to: **1.** Use all types of microscopes to examine tissue samples. 2. Preparing various tissue samples, cutting them, dyeing them, and preparing them on microscopic slides. 3. A discriminating histological study of the types of tissues and the important organs of each system in the human body 4. Viewing and studying natural tissue samples and knowing the tissue structure of these samples using a microscope. 5. Work in the laboratories of the Department of Health as an assistant specializing in histological diagnosis.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning.

	- Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	5	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to ensure accountability and ensure the quality of academic programs.	**Shape of cell**	1. The lecture 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral a written examinatior reports, discussions.
second	5	=	**Epithelial tissu simple epith. T.**	=	=
third	5	=	**Epithelial tissu Stratified epith T.**	=	=
4th	5	=	**Connective tiss – Loose co. t.**	=	=

5th	5	=	**Connective tiss –dense co. t.**	=	=
6th	5	=	**Connective tiss –the blood**	=	=
7th	5	=	**Connective tiss –compact bone**	=	=
8th	5	=	**External featur of digestive system**	=	=
9th	5	=	**Urogenital syst of male &femal**	=	=
10th	5	=	**Liver**	=	=
11th	5	=	**Spleen**	=	=
12th	5	=	**Lymph node**	=	=
13th	5	=	**Circulatory system (Artery)**	=	=
14th	5	=	**Circulatory system (vein)**	=	=
15th	5	=	**Review**	=	=

10. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, writing reports, and daily, oral, monthly, and written exams.

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Junqueira's Basic Histology Text and A 15th Edition • Junqueiras Basic Histology Text and A 14th Edition Lippincotts_Illustrated_Q&A_Review Histology 1st Edition 2015
Electronic References, Websites	https://ikr.atu.edu.iq

Update report:

Before Update	After Update
First week: **Shape of cell**	**Cell structure and types**
Second week: **Types of tissues and their divisions and Classification of epithelium**	**Epithelial tissue –simple epith. T**

Description Form to Analytical chemistry

1. Course Name:	
Analytical chemistry	
2. Course Code:	
A.C.	
3. Semester / Year:	
First Semester / First Year	
4. Description Preparation Date:	
14/2/2024	
5. Available Attendance Forms:	
Students of the Department of Medical Laboratory Technology/first level	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Dr. Hanan Abbas Majeed Al-Zubaidi Email: inkr.han2020@atu.edu.iq	Assist. lec.Mohammed Jawad Kadhim mohammed.kadhim.ikr23@atu.edu.iq
8. Course Objectives	
Course Objectives	**Objectives of the article: -** **The student will be able to learn about the basic principles of chemical laboratories, how to work within laboratories, and conduct basic analytical chemical examinations within medical laboratories.** **Special: The student will be able to:** **1. Learn about the importance of chemical laboratories and how to work within them.** **2. To become familiar with the methods of preparing chemical solutions, the types of risks within laboratories, and to become familiar with safety procedures within medical laboratories.** **3. Learn how to conduct the most important chemical tests, which are acidity tests, denaturation, in addition to how to conduct scientific research experiments inside the laboratory.** **4. To become familiar with the latest and most important laboratory techniques used in diagnosing the properties of solutions.**
9. Teaching and Learning Strategies	
Strategy	Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback

	- Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information

10. **The theoretical structure of the course**

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First to Third	2	Developing the student's knowledge by using advanced teaching methods for each lecture according to the title and content of the lecture and consolidating the concepts of the scientific subject in the student.	Introduction to analytical chemistry Atom elements, radio isomers pollutio with radio isome , pollution with elements . Relation betwee atoms, molecule ,energy, accordi to the new theor of atom.(Debrol equation). Matte classification. Chemical bonds covalent ,Ionic , coordination , hydrogen. Methods of analysis.qualitat and quantitative ,statistical meth of quantitative analysis, errors i quantitative analysis .	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions
Fourth	2	=	Methods of expressing concentration of solution , Molar solution ,normal solution .	=	=
Fifth	2	=	Preparation of molar solution , dilution ,questio	=	=
Sixth	2	=	Percentage composition, pa per million.	=	=

Seventh	2	=	Chemical equilibrium, ionization, constant of wate (PH and POH).	=	=
Eighth	2	=	Ionization of we electrolyte . calculation of Pl of weak acids ar weak bases.	=	=
Ninth	2	=	Buffer solutions classification .	=	=
Tenth	2	=	Calculation of buffer solutions	=	=
Eleventh	2	=	Uses of buffer solutions.	=	=
Twetveth	2	=	Volumetric analysis , classification , standard solutio examples .	=	=
Thirteenth	2	=	Neutralization reactions .	=	=
Fourteenth	2	=	Oxidation ,reduction reactions . examples.	=	=
Fifteenth	2	=	Precipitation reactions.	=	=
The practical structure of the course					
First to Third	4	Developing the student's knowledge by using advanced teaching method for each lecture according the title and content of the lecture and consolidating t concepts of the scientific subject in the student.	Type of glasswa used nown of cations Cleaning solutic safety. Cation analysis Unk uiz. Anion analysis . Unknown of amnions. Quiz	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions
Fourth	4	=	Balance, preparation of percentage solutions.	=	=
Fifth	4	=	Completion of	=	=

			preparation of percentage solutions.		
Sixth	4	=	Quiz, in balace a percentage solutions.	=	=
Seventh	4	=	Preparation of normal solution and molar soluti	=	=
Eighth	4	=	Dilution of concentrated solution.	=	=
Ninth	4	=	Quiz, examinati in dilution.	=	=
Tenth	4	=	Buffer solutions preparation PH.	=	=
Eleventh	4	=	PH. Meter.	=	=
Twetveth	4	=	Preparation of solution of knov PH.	=	=
Thirteenth	4	=	Quiz , unknown	=	=
Fourteenth	4	=	Volumetric analysis, acid-ba Titration. Preparation of standard borax. Solution	=	=
Fifteenth	4	=	Quiz, unknown.	=	=

11-Course Evaluation

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation = 15
And daily exams = 15
And oral = 10
And monthly = 25
And editorial. =35

12-Learning and Teaching Resources

Required textbooks (curricular books, if any)	1) Analytical Chemistry / Dr. Sajida Abdel Har Technical Education Authority 2)Fundamental of clinical chemistry / Norbert Tiet
Main references (sources)	3) General Chemistry / Saeba Abdullah - Hanaa Salman - Maysoon Suleiman / Technical Educatio Authority 4) Quality control of pharmacy students / Sa Muhammad Abu Zaid / Technical Educat

	Authority
Recommended books and references (scientific journals, reports...)	5- clinical chemical pathology / G.. H.Gary
Electronic References, Websites	6-https://ar.m.wikipedia.org The official website of the Technical Instit (https://ikr.atu.edu.iq)

تقرير التحديث: الكورس الاول// الكيمياء التحليلية

١. **تم التحديث في الاسبوع الاول من المنهاج وكما موضح في الجدول ادناه:**

قبل التحديث	بعد التحديث
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	Introduction to analytical chemistry Atom , **structure of atoms** . **Physical Properties of Metals**: 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. **Dangerous of radiation:**

٢. تم التحديث في **الاسبوع العاشر** من المنهاج وكما موضح في الجدول ادناه:

قبل التحديث	بعد التحديث
Principles of calorimetry	**_ Working of Colorimeter**: Principles of calorimetry" _ **Uses of Colorimeter. _Advantages and disadvantages of Colorimeter** **Some benefits are as follows**: _

Description Form to Fundamentals of Nursing

1.Course Name:	
Fundamentals of Nursing	
2.Course Code:	
F.N	
3.Semester / Year:	
First semester - academic year 2023-2024	
4.Description Preparation Date:	
2024/2/13	
5.Available Attendance Forms:	
Being present - using modern means of communication and the Internet	
6.Number of Credit Hours (Total) / Number of Units (Total)	
One theoretical hour - two practical hours per week - number of units = 3	
7.Course administrator's name (mention all, if more than one name)	
Name: MOHAMMED MAJID HAMEED Email: mohammed.hameed@atu.edu.iq	
8.Course Objectives	
Course Objective	**• The student will be able to become familiar with the basic principles of the Technical Nursing Basics course. • Graduating technical personnel who work in medical laboratories and are able to do the following:- • Help measure vital signs (temperature, pulse, breathing, blood pressure). • Assisting the doctor in diagnostic and therapeutic nursing procedures. • Operating medical equipment to evaluate vital signs • Dressing wounds • Knowing the degrees of burns, the percentage of burns, and what are the necessary tests that are performed on a person who has been burned • Giving treatment and inserting needles • Identifying communicable diseases, their methods of transmission, and how to prever them while taking a sample from a sick person.**
9.Teaching and Learning Strategies	
Strategy	**Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information.**
10. The theoretical structure of the course	
Week	**Topics**
1	Introduction to nursing

2	Medical examination
3	Vital signs, temperature measurement,
4	Pulse, definition, factors that effecting pulse, measurement of pulse .
5	Respiration, definition, factors that effecting respiration, measurement of respiration
6	Blood pressure, definition, factor the effecting blood pressure, hyper and hypotension, measurement of blood pressure
7	Health care, definition, factors effecting health care
8	Factors that effects the health of worker in laboratories, natural factors, infectious disease
9	Chemical factors- disease
10	Psychological factors-diseases
11 and 12	Biological factors- types-their effects on workers in Lab.- diseases.
13 and 14	First aid- definition, paramedic, fundamental of first aid, wound, bleeding .
15	Burns- types of fracture aid- artificial respiration
The practical structure of the course	
Week	**Topics**
1	Physical and medical examination
2	Methods of bio-vital markers measurement-temperature measurement
3	Pulse measurement, atrial, vein pulsation
4	Respiration measurement
5	Method of blood pressure measurement
6	Review for bio-vital markers measurement
7	Disinfection and sterilization methods
8	Methods of drugs intake and needle glaucoma
9	Samples collection from patients
10	Blood collection
11	Review
12	First aid- wound and bleeding first aid. .
13	First aid- fractures first aid- poisoning
14	Choking first aid- Heart massage
15	Application of artificial respiration
11.Course Evaluation	
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports .... etc	
1. Learning and Teaching Resources	
Required textbooks (curricular boo if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Fundamentals_of_Nursing_Clinical_Skills_Workbook – 2012 • PROFESSIONAL NURSING: CONCEPTS & CHALLENGES – 2014 • Complete Nurse_s Guide to Diabetes Care American Diabetes Association 2009 • Advanced Practice Nursing Emphasizing Common Roles 2011 • Fundamentals of Nursing 2014
Electronic References, Websites	

Description Form to Human right and Democratic

1.Course Name:
Human right and Democratic
2.Course Code:
F.N
3.Semester / Year:
First semester - academic year 2023-2024
4.Description Preparation Date:
2025/2/13
5.Available Attendance Forms:
Being present - using modern means of communication and the Internet
6.Number of Credit Hours (Total) / Number of Units (Total)
One theoretical hour - two practical hours per week - number of units = 3
7.Course administrator's name (mention all, if more than one name)
Name: Mohammed Hamid Kazem Howair **:Yamil -hussain.muhammed@atu.edu.iq**
8.Course Objectives

1- gets to know the principles and valu of human rights **2- Learn about democracy and huma rights** **spect it and stick to itRe** **Learn about public freedoms and what these freedoms are** **Its details**	**Objectives of the study subject**

9. Teaching and Learning Strategies	
exposed to continuous awareness of human rights and the fundamental freedo .associated with them ht everything that aims to ignore it, harm it, or undermine its sanctity, and And to to recognize .The concept of democracy and its relationship to public freedoms	**The strategy**

10. Teaching and Learning Strategies

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week

oral test	a lecture	rights Human Definition and objectives	knowledge And meaning And what it is human rights And her relationship With others from Threads in meaning Human rights / concept The concept of human rights throw lecture And a question Students on the topic knowledge And inquiry on to understand Students For the topic	6	1
oral test	a lecture	Human rights in ancient civilizations, especially the Mesopotamian vilizationci	knowledge And meaning And what it is Human rights in civilizations And her relationship With others from Threads A field human rights As Independently throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic	6	2
oral test	a lecture	Human rights in heavenly laws	knowledge Rights according to divine laws And all what Regard with it With rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract And inquiries on questions the topic with to request Preparation from Students	6	3
A written test	discussion	Human rights in Islam		6	4

oral test	a lecture	-Non governmental organizations and human rights International) Committee of the -Red Cross Amnesty - International	knowledge Human rights committees And all what Regard with it erything related to And ev human rights throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	5
oral test	a lecture	Human Rights Arab -Watch Human Rights .Organizations	knowledge Human rights organizations throw lecture And a question Students on the topic Subtract questions on the time Students and give For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	6
oral test	a lecture	Human rights in Iraqi constitutions between theory The -and reality. titutionIraqi Cons	knowledge Iraqi constitutions throw lecture And a question udents on the topicSt Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	7
oral test	a lecture	The relationship between human rights and public .freedoms	knowledge The relationship between human rights and public freedoms throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract	6	8

			questions And inquiries on the topic with to request Preparation from Students		
oral test	a lecture	Universal Declaration of Human Rights	knowledge Universal Declaration of Human Rights and Public Freedoms throw lecture And a question icStudents on the top Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	٩
A written test	discussion	charters Regional and national .constitutions	Identify on factors in National Influential charters and constitutions throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	10
storal te	a lecture	Modern human rights: economic, social and cultural human rights and civil and political (human rights	Identify on factors Influential in economic, social and cultural human rights and civil and (political human rights throw lecture And a question Students on the topic on Subtract questions Students and give the time For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	11
oral test	discussion	Guarantees of respect and protection of	Identify on Guarantees for the protection of human rights	6	12

		human rights at the national and international .levels	throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request on from StudentsPreparati		
oral test	a lecture	The general theory of freedoms: the origin of rights -and freedoms the project's position on declared rights .and freedoms	Identify on Theories of human achievement throw lecture And a question Students on the topic Subtract questions on tudents and give the time S For students To subtract questions And inquiries on the topic with to request Preparation from Students	6	13
oral test	a lecture	-The role of non governmental organizations in respecting and protecting human rights	-Identify Non governmental organizations throw lecture And a question Students on the topic Subtract questions on Students and give the time For students To subtract questions And inquiries on the topic with to request on from StudentsPreparati	6	14
oral test	a lecture	Democracy definition and types	knowledge And meaning And what it is Democracy and its relationship With others from Threads in meaning Democracy / pes and concept, ty characteristics Democracy throw lecture And a question Students on the topic knowledge And inquiry on to understand Students For the topic	6	15

12. Course evaluation	
ccording to the tasks assigned to the student, such as daily a ١٠٠Distribution of the grade out of .preparation, daily, oral, monthly, written exams, reports, etc marks monthly exam ٤٠ marks for daily and oral preparation and report writing ١٠ final exam score ٥٠	
13. cesLearning and teaching resour	
Human rights and democracy	(Required textbooks (methodology, if any
Public opinion and human rights / Dr. An Hassan Fayyad	(Main references (sources
periodicals and research ،Scientific journals And specialty	Recommended supporting books and (....references (scientific journals, reports
Internet sites (YouTube and Google) and oth media Communication in the specialty	Electronic references, Internet sites

Description Form to Computer application

1. Course Name: Computer Application
Computer Application
2. Course Code:
C.A.
3. Semester / Year: First semester / First year
4. Description Preparation Date: February 2025
5. Available Attendance Forms: Communication in person and electronic communication
6. Number of Credit Hours (Total) / Number of Units (Total) : 3 hours / 3 Units
7. Course administrator's name (mention all, if more than one name)
Name: Assistant Lecturer Huda Jalil dikhil Assistant Lecturer: Ahmed Saaed Email: hudajh@atu.edu.iq ahmed.jabar.ikr24@atu.edu.iq
8. Course Objectives: The student must be able to use a computer, be familiar with its use, and understand how to use its software

Course Objectives	Training the student and developing his scientific abilities to benefit from the computer. Providing the student with creative mental abilities, helping him in inductive and deductive logical thinking, and developing his abilities to solve dilemmas. Strengthening the factor of desire towards the computer and its applications and providing the student with positive tendencies aimed at information technology to employ it and benefit from it in the field of medical laboratories in the future.

9. Teaching and Learning Strategies

Strategy	Theoretical learning and practical technical application

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
15	1	Enabling the student to understand the computer as an electronic device	Introduction to computers, computer generations, hardware and software components Operating systems and their types MS-DOS operating system	Explanation using smart screen display, presentation usir the PowerPoint	Direct questions and pop quiz

		and learn about all its components and the software used in it	operating system commands WINDOWS operating system operating system commands	application, and using the whiteboard to clarify important information	
The practical structure of the course					
15	2	A realistic practical application of everything the student has learned through the theoretical explanation of the subject	Dealing with the device directly, identifying its external componen and understanding its internal components Learn about the DOS operating system and apply inter and external operating system commands Learn about the Windows operating system, its advantages, requirements, operation, and applying operating system commands	Application through computers	By practicing using the computer, applying exercises, and solving important questions about the topics

10. 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	
11. Learning and Teaching Resources	
Required textbooks (curricular books any)	Computer Applications Book issued by the Iraqi Ministry of Higher Education
Main references (sources)	Computer Applications Book issued by the Iraqi Ministry of Higher Education
Recommended books and references (scientific journals, reports...)	Everything related to Iraqi and Arabic computer applications.
Electronic References, Websites	Websites of the universities of the Iraqi Ministry of Higher Educat and Scientific Research

COURSE DESCRIPTION FORMS FOR THE FIRST YEAR/ SECOND SEMESTER

Description Form to Quality control

1. Course Name:
Quality control
2. Course Code:
Q.C.
3. Semester / Year:
Second Semester / First Year
4. Description Preparation Date:
10/2/2025
5. Available Attendance Forms:
In presence
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units
7. Course administrator's name (mention all, if more than one name)
Name: Assist.Prof.Dr. Balqees Sadoon Jasim inkr.blk2@atu.edu.iq Assist. Lec **Israa Jawad Abdul_Rasul** israaalasa@gamil.com Assist. Lec **Abdul Salam H. Hamza** **salam.hamza@atu.edu.iqpsk**
8. Course Objectives

Course Objectives	**General Goals:** Students will be able to understand how to validate their results and control tests, as well as become familiar with the latest and most important laboratory techniques used in disease diagnosis.

9. Teaching and Learning Strategies

Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

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

		Outcomes			
1			Intoduction to quality control		
2			Medical relevent of QA, Standarded units of the international system		
3,4,5	2	=	Balancing error detection and false rejection	=	=
6,7	2	=	Quality control materials	=	=
8	2	=	QA techniques for quantitative results	=	=
9	2	=	QA techniques for qualitative results	=	=
10	2	=	QA techniques for semi-quantitative results	=	=
11	2	=	Troubleshoot based on QA results	=	=
12,13,14	2	=	Review	=	=
15	2	=	Final exam	=	=
The practical structure of the course					
First to Third	4	- Developing studer knowledge throug the use of advanc teaching methods - Raising the level c motivation for learning among students in its various types: internal motivatio social motivation, and achievement motivation. - Helping the studer to ensure that decisions related t the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous	**Introduction on the subject medical laboratory techniq - Glassware and materials use some tests. Disinfection and steriliza (Chemical and physi - biological and chemical haza and safety**	1. The lectur 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, report discussi

		improvement. - Helping the studer to emphasize the issue of quality assurance in academic progran			
Fourth	4	=	**Samples collection and handlin - Samples collection for differe lab. Investigations, samples transport, samples preparatior**	=	=
Fifth	4	=	**Culturing of microorganism :- types of Culture media, preparation of culture media**	=	=
Sixth	4	=	**Urine samples: Chemical and physical investigations, microscopic examination. Cult and sensitivity**	=	=
Seventh	4	=	**Stool sample: General examination. Culture and sensitivity**	=	=
Eighth	4	=	**Seminal Fluid: Seminal fluid examination Liquification time, physical examination, microscopic examination. Fructose test.**	=	=
Ninth	4	=	**Heamagglutination test**	=	=
Tenth	4	=	**Advance techniques -Enzyme-linked immunosorber assay (ELISA) procedure, troubleshoot. Cutoff value, standard curve**	=	=
Eleventh	4	=	**Radioimmunoassay (RIA) procedure, troubleshoot.**	=	=
Twetveth	4	=	**Immunofluoresence technique**	=	=
Thirteent	4	=	**Polymerase chain reaction (PC types procedure, gel electrophoresis**	=	=
Fourteent	4	=	**Real-time PCR, procedure application in medical lab.**	=	=
Fifteenth	4	=	**Review**	=	=

10. 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	
11. Learning and Teaching Resources	
Required textbooks (curricular books, any)	• **Basic Clinical Laboratory Techniques.** • **Essentials Of Medical Laboratory practice**

Main references (sources)	• **A Manual of Laboratory And Diagnostic Tests.** • **Fundamentals Of Urine And Body Fluid Analysis**
Recommended books and references (scientific journals, reports...)	• **Medical Laboratory Science Examination Review.** • **Tietz Clinical Guide To Laboratory Tests**
Electronic References, Websites	https://ikr.atu.edu.iq https://microbenotes.com/ https://medicallabscientist.org/ https://labpedia.net

Description Form to Histological techniques

1. Course Name:	
Histological techniques	
2. Course Code:	
3. Semester / Year:	
The sconed course / fist stage	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
Mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 5 hours (2 theoretical + 3 practical) / total number of units: 5 units	
7. Course administrator's name (mention all, if more than one name)	
Name: **Prof. Zainab Abed Mohsen** Email: **drzainababed@atu.edu**	
8. Course Objectives	
Course Objectives Objectives of the study subject	**Objectives of the article: -** The student will learn about the natural tissue structure of the human body's organs, which will enable him to imagine the effect of diseases on these tissues. **Special:** The student will be able to: **1.** Use all types of microscopes to examine tissue samples. 2. Preparing various tissue samples, cutting them, dyeing them, and preparing them on microscopic slides. 3. A discriminating histological study of the types of tissues and the important organs of each system in the human body 4. Viewing and studying natural tissue samples and knowing the tissue structure of these samples using a microscope. 5. Work in the laboratories of the Department of Health as an assistant specializing in histological diagnosis.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion

	- Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
first	5	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to ensure accountability and ensure the quality of academic programs.	**Mounting Adhesives**	1. The lecture 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions.
Second - third	5	=	**Staining , classification of stains.**	=	=
4th - 5th	5	=	**Staining section**	=	=
6th	5	=	**Methods of staining**	=	=
7th-8th	5	=	**Types of stains ,**	=	=

			preparation of stain and oxidation of son stains		
9th	5	=	**Stains solvents ,factors affectin staining , storag of stains , how t choose stain**	=	=
10th	5	=	**Decalcification , bone tissue .**	=	=
11th-12th	5	=	**Examination fo second term.**	=	=
13th-14th	5	=	**Tissue slide, Freezing microtome**	=	=
15th	5	=	**Final examinati**	=	=

10. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, writing reports, and daily, oral, monthly, and written exams.

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Junqueira's Basic Histology Text and Atlas 1 Edition • Junqueiras Basic Histology Text and Atlas 1 Edition Lippincotts_Illustrated_Q&A_Review Histology 1st Edition 2015
Electronic References, Websites	https://ikr.atu.edu.iq

Update report: **1. It was updated in the (13,14) week of the curriculum, as shown in the table below.**

After updating	Befor updating
Updated Slide Library Content • **Include modern examples such as:** ○ **Immunohistochemical staining** ○ **Electron microscopy images** ○ **Comparative slides of normal vs. pathological tissues (e.g., cancerous vs. healthy tissues**	**Review**

Description Form to Molecular biology

1. Course Name:
Molecular biology
2. Course Code:
M.B.
3. Semester / Year:
Second year / first semester
4. Description Preparation Date:
١٤/1/2025
5. Available Attendance Forms:
Present
6. Number of Credit Hours (Total) / Number of Units (Total)
4th hours (2 Theoretical + 4 Practical)/ Number of Total unit 4 unite
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Thuraya Aamer Habeeb Assist. Lec **Abdul Salam H. Hamza** **Email: dw.thr@atu.edu.iq** **salam.hamza@atu.edu.iqpsk**
8. Course Objectives

Course Objectives	**Course Objectives:** **The course aims to enable students to thoroughly understand cellular structures at the molecular level.** **Specific Objectives:** **By the end of the course, students will be able to:** **1. Understand the basic principles of molecular biology.** **2. Recognize the molecular structure of the cell.** **3. Identify the materials used for isolating nucleic acids (DNA and RNA).** **4. Understand the practical methods of nucleic acid replication outside the cell.**

9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback

	- Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ens accountability and ensure quality of academic program	Introduction to molecular biology	1. Lecturer 2. Scientific Lab 3. Systematic training. 4 Summer training	1. Daily Quick Qu 2. 2. Oral exams 3. Theoretical exa 4. Reports dissuasion
2	2	=	Cell cycle	=	=
3	2	=	DNA And RNA structure	=	=
4	2	=	DNA replication	=	=
5	2	=	DNA transcription	=	=
6-7	2	=	Translation and protein synthesis	=	=
8	2	=	Gene expression,	=	=

			regulation, DNA methylation their role in gene regulation		
9-10	2	=	Inhibitors of Translation and transcription	=	=
11	2	=	DNA repair system	=	=
12	2	=	Mutation and chromosomal aberrations	=	=
13	2	=	Chemical and physical agents that cause mutation	=	=
14	2	=	Recombinant DNA technology (c DNA technique)	=	=
15	2	=	Cloning and applicat (briefly)	=	=

The practical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subj name	Learning method	Evaluation meth
1	4	Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to	Introduction molecular biology	1. Lecturer 2. Scientific Lab 3. Systematic training. 4.Summer training	1. Daily Quick 2. Oral exams 3. Theoretical exa 4. Reports 5.dissuasion

		identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensure accountability and ensure th quality of academic program			
2	4	=	Instruments materials used molecular biology	=	=
3	4	=	DNA isolation	=	=
4	4	=	RNA isolation	=	=
5	4	=	Electrophoresis	=	=
6	4	=	Restriction enzym	=	=
7	4	=	Genetic engireerin	=	=
8	4	=	c DNA technique	=	=
9	4	=	Southran blot technique	=	=
10	4	=	Northran blot technique	=	=
11-12	4	=	Polymerase chain reaction (PCR) applications and protocol	=	=
13	4	=	Gene cloning	=	=
14	4	=	Review	=	=
15	4	=	Final exam	=	=

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	/

Main references (sources)	1- **Principles and Techniques of Biochemistry and Molecular Biology** // Seventh edition Edited by: Keith Wilson and John Walker 2- **Molecular Biology** // Fifth edition Robert F. Weaver 3- **Fundamental Molecular Biology //** Lizabeth A. Allison
Recommended books and references (scientific journals, reports…)	Internet's books
Electronic References, Websites	Internet's books

Update report:
1. It was updated in the eighth week of the curriculum, as shown in the table below.

Before updating	After update
Gene expression and regulation	Gene expression, regulation, DNA methylation their role in gene regulation

Description Form to Lab. Safety

12. Course Name:
Laboratory Safety
13. Course Code:
L.s
14. Semester / Year:
1 st course / 1 st Year
15. Description Preparation Date:
30/١/202٥
16. Available Attendance Forms:
17. Number of Credit Hours (Total) / Number of Units (Total)
1Theory + 2 Practical = 3 total
18. Course administrator's name (mention all, if more than one name)
Name: zahraa qais jassim Email: zahraa.jasm.ikr22@atu.edu.iq
19. Course Objectives

Course Objectives	**1- Enable the student to identify the safety of the work environment** **2- Identify personal protection and risk protection methods in the work environment.** **3- The student should understand the types of fires, their causes, methods of extinguishing them and ways to prevent them**
20. Teaching and Learning Strategies	
Strategy	1- - Introducing the student to the occupational and laboratory risks to the health of workers 2- Enabling the student to prevent occupational hazards in laboratories and workshops.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning ethod	Evaluation method
1st. + **2nd.**		**-The student understands the topic** =	**Introduction to laboratory safety**	1-**Lecture** **2- Scientific laboratories.** **3-Systematic training.** =	Quizze =

		=	Introduction to laborator safety		
3th.				=	=
			How to deal with biologic agents		
4th. +					
5th.				=	=
			Laboratory safety symbols the laboratory		
6th. +	1			=	=
7th. +	1				
8th.	1		Biological hazard		
				=	=
9th. +	1				
10th. +	1				
			Types of Biological hazar	=	=
11th.	1			=	=
			Chemical hazard		
12th.	1			=	=
			types of chemical hazards		
13th.	1			=	=
			Review		

The practical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject na	Learning method	Evaluation method
1st.			1st.		

21. 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

22. Learning and Teaching Resources

Required textbooks (curricular books if any)	
Main references (sources)	ocupational Health and Safety in the Care and1- Use of Research Animals" by National Research Council . "Fundamentals of Occupational Safety and Health" by Mark A. Friend and James P. Kohn
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://ikr.atu.edu.iq

Updating report:

Befor updating	After updating
General lab. Safety roles	Third week/ /How to deal with biological agents
Personal protective equipment	Fifth week / Laboratory safety symbols in the laboratory

Description Form to Blood transfusion

1. Course Name:
Blood transfusion
2. Course Code:
BT
3. Semester / Year:
Second semester – first year academic year 2024–2025
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Being present - using modern means of communication and the Internet
6. Number of Credit Hours (Total) / Number of Units (Total)
One theoretical hour - two practical hours per week - number of units = 3
7. Course administrator's name (mention all, if more than one name)
Name: MOHAMMED MAJID HAMEED Email: mohammed.hameed@atu.edu.iq
8. Course Objectives

Course Objectives	• **The student will be able to learn the ba principles of blood transfusion, laboratory wo and basic tests for blood transfusion.**
9. Teaching and Learning Strategies	
Strategy	- Cooperative learning strategy. - Brainstorming teaching strategy. - Collaborative concept planning teaching strategy. - Real-time feedback teaching strategy. - Note-taking teaching strategy. - Exchange and discussion teaching strategy. - Information presentation teaching strategy. - Training and presentation of scientific developments teachi strategy.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	**One hour each week**	**The student understands the topic**	Information of blood transfusion.	**1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training**	**Daily, oral and written examinations, reports, discussions.**
2	=	=	Blood components, blood collection, choosing the donor, physiological examination, time of collection.	=	=
3	=	=	Complete the second week principles.	=	=
4	=	=	Blood group: ABO system, Rh factor, Lewis system.	=	=
5	=	=	Classification of blood typing (long & short)	=	=
6	=	=	Direct and indirect coomb's test of blood.	=	=
7	=	=	Process of cross matching test,	=	=

			reporting and record the results.		
8	=	=	Roles of blood transfusion , blood disease.	=	=
9	=	=	Pregnant care , leukemia of infants	=	=
10	=	=	Complete the principles above	=	=
11	=	=	Separation of blood contents, methods of separation.	=	=
12	=	=	Complete the principle above.	=	=
13	=	=	Component of blood after storage, anticoagulants.	=	=
14	=	=	Blood transfusion disadvantage.	=	=
15	=	=	15 Quality control , Tools ,Persons , Method	=	=
The practical structure of the course					
1	**two hours each week**	**The stud understar**	Instruments used in blood collection,	=	=

		s the topi	examination and blood transfusion.		
2	=	=	Donor choosing, how blood is collecting, donor care during and after blood giving.	=	=
3	=	=	Methods of blood typing, tube method.	=	=
4	=	=	Methods of blood typing, slide method, the difference between the long and short method .	=	=
5	=	=	Coomb,s test , direct method .	=	=
6	=	=	Coomb's test, indirect method.	=	=
7	=	=	Compatibility tests and report writing.	=	=
8	=	=	Identification of disadvantage.	=	=
9	=	=	Blood plasma fraction and pregnant care.	=	=
10	=	=	Blood fraction methods.	=	=
11	=	=	Blood	=	=

			fraction methods.		
12	=	=	Methods of blood storage and components .	=	=
13	=	=	Quality control.	=	=
14	=	=	Transfusion instrument and fluids giving.	=	=
15	=	=	Refreshing and moves presenting (Blood bank).	=	=

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 ar	• **Modern Blood Banking & Transfusion Practices Sixth Edition**
Main references (sources)	Basic and Applied Concepts of Blood Banking Transfusion Practices, 5th edition by Paula R. Howard 20
Recommended books and references (scientific journals, reports…)	• **Medical Laboratory Science Examination Review.** • **Tietz Clinical Guide To Laboratory Tests.**
Electronic References, Websites	**الموقع الرسمي للمعهد التقني (**https://ikr.atu.edu.iq) • https://microbenotes.com/ • https://medicallabscientist.org/ https://labpedia.net

1.Update Report:

1. The curriculum was updated in the first week of the curriculum, as shown in the table below:

After update	Before update

Information of blood transfusion. And introduction about cardio vascular system and all vine and artery that supply heart	Information of blood transfusion.

2. The curriculum was updated in the second week as shown in the table below:-

After update	Before update
Blood components, blood collection, choosing the donor, physiological examination, time of collection. And the physiological problem that associated when there is a deferent in blood groups between donor and recipient	Blood components, blood collection, choosing the donor, physiological examination, time of collection.

Description Form to Biochemistry

1. Course Name:	
Biochemistry	
2. Course Code:	
CHB.	
3. Semester / Year:	
Second Semester / First Year	
4. Description Preparation Date:	
22/1/2025	
5. Available Attendance Forms:	
Students of the Department of Medical Laboratory Technology/first level	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Hanan Abbas Majeed Al-Zubaidi Email: inkr.han2020@atu.edu.iq	**Assist. Lec.Mohammed Jawad Kadhim** mohammed.kadhim.ikr23@atu.edu.iq
8. Course Objectives	
Course Objectives	- **Course Objectives: -** **The student will be able to learn the basic principles of biochemical laboratories and how to work inside laboratories and conduct basic biochemical tests inside medical laboratories.** **Special: - The student will be able to:** **1. Identify the importance of clinical biochemical laboratories and how to work inside them.** **2. Identify the methods of preparing chemical solutions and the types of risks inside laboratories and identify safety procedures inside medical laboratories.** **3. Identify how to conduct the most important chemical tests, represented by tests for measuring sugar, fats, enzymes, hormones and vitamins, in addition to how to conduct scientific research experiments inside the laboratory.** **4. Identify the latest and most important laboratory techniques used in diagnosing the properties of solutions and conducting chemical tests**
9. Teaching and Learning Strategies	
Strategy	Cooperative education strategy.

	- Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First to Third	2	**Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and**	. **1_Biochemistry compounds, cell** **2-Carbohydrates, classification ,its presence ,its importance, General properties of monosaccharide's** **3-Important monosaccharide's. Derivatives of monosaccharide's, reducing sugars. Its presence in human body , its reaction _Disaccharides and polysaccharides properties, reactions occurrence**	1. The lecture. 2. Scientifi laboratorie 3. Systema training. 4. Summer training	Daily, oral a written examinations reports, discussions

		educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to ensure accountability and ensure the quality of academic programs.			
Fourth	2	=	**Lipids ,classification ,properties . _Fatty acids ,properties , reactions**	=	=
Fifth	2	=	**Essential fatty acids and unessential fat acids . properties, reactions. Unsaturated fatty acids ,** **properties its importance,**	=	=
Sixth an Seventh	2	=	**Compound lipids ,derived lipids cholesterol, its existence** **_____ Proteins ,general properties ,peptide bo Amino acids , properties , occurrence ..**	=	=
Eighth	2	=	**. Amino acid ,classification ,reactionsClassification of proteins ,chemical properties of proteins**	=	=
Ninth	2	=	**. Separation of organic compounds by chromatography.**	=	=
Tenth	2	=	**Separation of amino acids. Examination_**	=	=
Eleventh	2	=	**Nucleic acids, nucleoprotein, analysis of nucleoprotein.**	=	=
Twetvet	2	=	**Enzymes ,nomenclature, classification. Enzymes, properties , factors in fleecing the rate of enzymatic reactions. Enzyme ,inhibitions .**	=	=
Thirteen	2	=	**Hormones , properties. , Classification of hormones. Protein**	=	=

			hormones , non protein hormones .		
Fourtee	2	=	**Vitamins ,water soluble vitamins, classification, occurrence، deficiency.** **Fat soluble vitamins , classification, occurrence, deficiency Complete of vitamins**	=	=
Fifteent	2	=	**Creatine and creatinine**	=	=
The practical structure of the course					
First to Third	4	Raising the level motivation for learning in its various types: internal motivatio social motivation, and achievement motivation. - Creating opportunities to implement a collective plannin approach to the curriculum, and f cooperation amon faculty members identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to ensure accountability an ensure the quality	**1-Reactions of monosaccharide's, Fehling, Benedict,** **bar food ,sylvan of ,Mulish tests .** **2-Reactions of reducing disaccharides** **3-Reactions of non-reducing disaccharides**	1. The lecture. 2. Scientifi laboratorie 3. Systema training. 4. Summer training	Daily, oral a written examination reports, discussions

		academic progran			
Fourth	4	=	**Chromatography**	=	=
Fifth	4	=	**Chromatography**	=	=
Sixth	4	=	**Phenyl hydrazine. Test. Of mono-and-disaccharides**	=	=
Seventh	4	=	**Reaction of polysaccharides.**	=	=
Eighth	4	=	**Scheme of identification of saccharides.**	=	=
Ninth Tenth Eleventl	4	=	**Quiz, unknown** **_____** **Lipids, solubility, reactions of fatty acids, hydrolysis of fats and oils.** **_____** **Test for saturation in fatty acids .**	=	=
Twetvet Thirteer Fourtee	4	=	**Quiz, unknown .** **_____** **Proteins, properties, Albumin .** **_____** **Quiz and practical examination .**	=	=
Fifteen	4	=	**Urea and uric acid** **Test for urea and uric acid in urine.**	=	=

11-Course Evaluation

Distribution of the score out of 100 according to the tasks assigned to the student, such as daily preparation = 15
And daily exams = 15
And oral = 10
And monthly = 25
And editorial. =35

12-Learning and Teaching Resources

Required textbooks (curricular boc if any)	…….
Main references (sources)	**1) Clinical Chemistry / Mohamed Fathy El-Hawary / Technical Education Authority** **2) Practical Clinical Chemistry / Mohamed Ramzy El-Omari / Technical Education Authority** **3) General Chemistry / Saiba Abdullah - Hanaa Salman – Maysoun Suleiman / Technical Education Authority** **4) Quality Control for Pharmacy Students / Sayed Mohamed Abu Zeid / Technical Education Authority** **5) Analytical Chemistry / Dr. Sajida Abdel Hamid / Technical Education Authority.**

	6- Fundamental of clinical chemistry / Norbert Tietz
Recommended books and references (scientific journals, reports...)	**1-Clinical chemical pathology / G.H. Gary** **2- Basic Techniques for the medical laboratory / Jean Jorgen as .** **3- Biochemistry booklet / Muhammad Ramzi Al-Omari / Technical Education Authority**
Electronic References, Websites	**1-https://ar.m.wikipedia.org** **2-The official website of the Technical Institute (https://ikr.atu.edu.iq)**

تقرير التحديث: الكورس الثاني// الكيمياء الحياتية :

١. تم التحديث في الاسبوع الاول من المنهاج وكما موضح في الجدول ادناه:

قبل التحديث	بعد التحديث
Triglycerides - types of triglycerides - their clinical significance .	Triglycerides - types of triglycerides - their clinical significance **. Fats as stored fuel PROPERTIES OF TRIACYLGTYCEROLS '**

٢- تم التحديث في الاسبوع الثالث عشر من المنهاج وكما موضح في الجدول ادناه:

قبل التحديث	بعد التحديث
Vitamins - their classification - Vitamins (A - B - C - D) their respective functions - and their sources .	Vitamins - their classification - Vitamins (A - B - C - D) their respective functions - and their sources ' **Important of vitamins**.' **properties of Vitamins** - .

Description Form to English Language

1. Course Name:	
English Language	
2. Course Code:	
3. Semester / Year:	
First year / Second semester	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
Present	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 Theoretical / Number of Total unit 4 unite	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Lec. Hadeel salah mahdi **Email: Ahmedalwazni2@gmail.com**	
8. Course Objectives	
Course Objectives	**General Objectives** The student will be able to know medical English in general **Special Objectives** - Define and identify the functions of Root, Suffixes and Prefixs in medical terms, - Pronounce medical terms containing root, suffixes and prefixes properly and analyze medical terms into their components - Read and write definitions of medical terms, diseases, and medical procedures - differentiate between the terms system, organ, and tissue - Paraphrase a sentence or a paragraph - Write a referral letter and prepare an oral presentation
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning.

	- Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First & Second	2	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensure accountability and ensure the quality	- Medical terms (human body) - Root - suffixes and - prefixes.	**1. Lecturer** **2. Scientific** Lab 3. Systematic training. 4. Summer traini	**1. Daily Quick Quiz** **2. Oral exams** **3. Theoretical exa** **4. Reports** **5. dissuasion**

		of academic programs			
Third	=	=	Spelling of medical terms	=	=
Fourth	=	=	- Pronouncing of medical terms - Pronounce exercise	=	=
Fifth	=	=	Vocabulary development (medical vacobulary)	=	=
Six & Seve	=	=	reading	=	=
Eighth and Ninth	=	=	Writing	=	=
Tenth and Elenth	=	=	grammar	=	=
Twelfth & Thirteenth	=	=	Oral communication	=	=
Fourteenth	=	=	Review	=	=
Fifteenth	=	=	Final exam	=	=

The practical structure of the course
No Practical Structure Theory only
10. 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
11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	English for medicine and health science By shehde and Fareh
Main references (sources)	
Recommended books and references (scientific journals, reports...)	Internet
Electronic References, Websites	**(https://ikr.atu.edu.iq)**

Baath Crimes:

1. Course Name
Baath crimes
2. Course Code
B.C.
3. Semester/ year
Second Year / First Semester
4. is description was preparedThe date th
2
5. Available forms of attendance for the second stage
6. Number of study hours (total)/number of units (total) Number of units
7. (Name of the course administrator (if more than one name is mentioned
ad AlName: Hussain Ali Muhamm Yamilhussain.muhammed@atu.edu.iq
objectives Course .٨

Achieving international standards in education respect and respect for others-To emphasize self much as possible to achieve the optimal Provide the ideal environment as -٣ .learning state	**Objectives**
9. Teaching and learning strategies	
Are qualified to delve deeply into the study, equipped with a scientific thinking styl and the ability to ific truth in all fieldsAcademic research and investigation of scient	**The strategy**

Course structure .١٠

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
oral test	a lecture	Concept Crimes And its . sections	Community health technologies	4	1
oral test	a lecture	identification the crime language And terminologically	th Community heal technologies	4	2

oral test	a lecture	The crimes of the Baath regime in Iraq	Community health technologies	4	3
A written test		Sections and types of the Baath crimes of regime	Community health technologies	4	4
oral test	a lecture	crimes System Resurrection according to documentation Law The court Criminal Iraqi _ ... AD ٢٠٠٥Supreme	Community health technologies	4	5
oral test	a lecture	and Crimes International Species Crimes . International	Community health technologies	4	6
oral test	a lecture	Decisions Outgoing from The court Criminal The . upper one	Community health technologies	4	7
oral test	a lecture	Crimes Mental And social And its effects, And hlighted Violations the hig system Baathist in Iraq	Community health technologies	4	8
oral test	a lecture	Crimes Psychological and mechanisms Crimes Psychological effects Crimes Mental	Community health technologies	4	٩
A written test	discussio n	and Crimes Social militarization Society and position the system Baathist from Debt	Community health technologies	4	10
oral test	a lecture	Violations Laws Iraqi photo Violations rights Human And crimes . Authority	Community health technologies	4	11
oral test	discussio n	some decisions Violations Political And the military For system	Community health nologiestech	4	12
oral test	a lecture	Places Prisons And detention For system Resurrection crimes Cemeteries Collective	Community health technologies	4	13
A written test	a lecture	Crimes Environmental For system Resurrection in Iraq destruction the cities And the villages	Community health technologies	4	14

		Policy the earth Scorched drying Marshes .			
oral test	a lecture	pollution The warlike And radiological And an explosion Mines . destruction the cities And the villages Policy the earth Scorched . Scraping Orchards Palm And trees And crops	Community health technologies	4	15

١١. Course evaluation

١٠٠Distribution of the grade out of s ,uch as daily according to the tasks assigned to the student .preparation, daily, oral, monthly, written exams, reports, etc

marks monthly exam ٤٠
marks for daily and oral preparation and report writing ١٠
final exam score ٥٠

12. Learning and teaching resources

e crimes of the Baath regime in IraqTh	(Required textbooks (methodology, if any
Local governments / Dr. Zia's joy	(Main references (sources
Scientific journals, periodicals and research And specialty	Recommended supporting books and (....references (scientific journals, reports
Internet sites (YouTube and Google) and otl media Communication in the specialty	nces, Internet sitesElectronic refere

COURSE DESCRIPTION FORMS FOR THE SECOND YEAR/ FIREST SEMESTER

Description Form to Microbiology

1. Course Name:
Microbiology
2. Course Code:
M.
3. Semester / Year:
Second year / first semester
4. Description Preparation Date:
5. Available Attendance Forms:
Present
6. Number of Credit Hours (Total) / Number of Units (Total)
6th hours (2 Theoretical + 4 Practical)/ Number of Total unit 6 unite
7. Course administrator's name (mention all, if more than one name)
Name: Assist. Prof. Dr. Balkeas Abd Ali Abd Aun Jwad **Email: inker.balk@atu.edu.iq**
8. Course Objectives

Course Objectives	**Subject objective**: The student will be able to know microorganisms, their importance and their relationship to humans. **Special:-** The student will be able to: 1. Identify the types of microorganisms that are cause humans diseases (bacteria, viruses, fungi, parasites) 2. Identify the types of microorganisms that cause diseases to humans 2. Identify the molecular structure of microorganisms 3. Identify the reproduction of bacteria, their toxins and their pathogenicity 5. Identify the types of antibiotics and their mechanism of action
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback

	- Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ens accountability and ens the quality of acade programs	Introduction to molecular biology	1. Lecturer 2. Scientific Lab 3. Systematic training. 4 Summer training	1. Daily Quick Qui 2. 2. Oral exams 3. Theoretical exan 4. Reports dissuasion
2	2	=	classes of pathoge microorganisms Virus bacteria, fungi, parasite	=	=

3	2	=	Classification a Scientific nomenclat of the bacteria. Normal Flora	=	=
4	2	=	Bacterial Structure	=	=
5	2	=	Bacterial division a growth	=	=
6	2	=	Bacterial Genetics, Di transfer between bacte	=	=
7	2	=	Pathogenicity of bacte	=	=
8	2	=	Toxigenesis (bacte toxin).	=	=
9	2	=	Classes of antibacte agents	=	=
10	2	=	General characteristic a classification of virus	=	=
11	2	=	Viral genetics, mutation, instruct between viruses, the r of genetic variation evolution of viruses.	=	=
12	2	=	Pathogenicity of viruse	=	=
13	2	=	Classes of antiviral age	=	=
14	2	=	Characteristic a classification of medi fungi.	=	=
15	2	=	Morphology and structure of fungi, Classes of antifungal agents	=	=

The practical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation metho
1	4	Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to	Introduction, behav inside Lab.	1. Lecturer 2. Scientific Lab 3. Systematic training. 4.Summer training	1. Daily Quick 2. 2 Oral exams 3. Theoretical exan 4. Reports 5.dissuasion

		implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensur accountability and ensur the quality of academic programs			
2	4	=	Sterilization disinfection methods.	=	=
3	4	=	Specimen Collection Processing	=	=
4	4	=	Microscopic Examinat of Infected Materials	=	=
5	4	=	Use of Colo Morphology for Presumptive Identification Microorganisms.	=	=
6	4	=	Biochemical Identification of Bacte	=	=
7	4	=	Immunological meth used for microorgani detection	=	=
8	4	=	Applications of Molecular Diagnostic Nuclei acid Hybridization techniques	=	=

9	4	=	Nucleic acid Amplification procedu	=	=
10	4	=	Other Nucleic Acid Amplification Reactior Nucleic Acid Sequence Based Amplification	=	=
11	4	=	Antimicrobial Susceptibility Testing, SELECTING ANTIMICROBIAL AGENTS FOR TESTING, Reporting of Susceptibility T Results.	=	=
12	4	=	TRADITIONAL ANTIMICROBIAL SUSCEPTIBILITY TEST METHODS, Inoculum Preparation and Use of McFarland Standards, Dilution Susceptibility Testing Methods, Antimicrol Stock Solutions, Brc Macrodilution (Tu Dilution) Tests, Ag Dilution Tests	=	=
13	4	=	Disk Diffusion Testi Principle, Establish Zone- Diame Interpretive Breakpoi Disk Storage, Inoculat and Incubation, Read Plates and T Interpretation	=	=
14	4	=	Modified Methods Testing Slow-Growing Fastidious Bacteria	=	=
15	4	=	Susceptibility Testing Anaerobes	=	=

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	/
Main references (sources)	1- **Text book of Microbiology and Immunology** // second edition // Subhash Chandra Parija 2- **Medical Microbiology** // Fritz H. Kayser, M.D., Kurt A. Bienz, Ph.D., Johannes Eckert, D.V.M., Rolf M. Zinkernagel, M.D. **3- Microbiology (Boundless)**
Recommended books and references (scientific journals, reports…)	Internet's books
Electronic References, Websites	Internet's books

Updating report :

1. **The curriculum was updated in the fourth week of the curriculum, as shown in the table belo**

After updating	Before updating
General characteristics, Bacterial Structure	Bacterial Structure

2. **The curriculum was updated in the fifth week of the curriculum, as shown in the table below:**

After updating	Before updating
Bacterial division and growth, bacterial growth curve	Bacterial division and growth

3. **The curriculum was updated in the eight week of the curriculum, as shown in the table below**

After updating	efore updating
Bacterial toxins, Bacterial enzymes	TOXIGENESIS (bacterial toxin).

Description Form to Haematology\1 and 2

1. Course Name:	
Hematology	
2. Course Code:	
H.1 and H.2	
3. Semester / Year:	
1st + 2nd Semester / 2nd Year	
4. Description Preparation Date:	
10/2/2024	
5. Available Attendance Forms:	
In presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Assist. Lec. Nawras Abdel Abbas Esmaeel Nawras.madi@atu.edu.iq Assist. Lec **Israa Jawad Abdul_Rasul** **israaalasa@gamil.com**	
8. Course Objectives	
Course Objectives	1- Identify the blindness of general concepts of specialization generalized blood 2- Identify the blindness of the main place resulting in free blood in the bone marrow and the difference in place according to age and the most important in-depth causes By decreasing and increasing their numbers and the deep causes of their dysfunction 3 – Identify the blindness of acute anemia and its causes and division blindness based on the size of red blood cells and the basis of diseases that Affects the bone marrow 4- Focus blindness types of anemia, which include anemia deepening bone marrow failure, iron anemia and deep anemia B Breakdown of red blood cells and deepened anemia with deficiency or poverty in folic acid or vitamin and histotic anemia12B 5_ Focus blindness of diseases deep in Mediterranean anemia Thalassaemia and sickle cell anemia 6- Introduction to leukocytes and their types and deep diseases that resemble lymphatic gland disorders and immune deficiency

	7- Identify acute and chronic leukemia blindness and lymphoma 8 _ Identify platelet blindness, clotting factors and deep diseases 9. Identify the blindness of the method of action of coagulation time, bleeding time, in-depth coagulation analyzes and platelet counting directly And indirectly and its relationship to clinical diseases and the most important hemorrhagic diseases and their relationship to world history.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st.	2	- **The student understands the topic**	**Introduction importance of hematology. Study the blood contains.**	1-**Lecture** **2- Scientific laboratories.** **3-Systematic training**.	Quizze
2nd.	2	- The student understands the topic	**The haemoto poiesis in fetus, children and adult**	=	=
3th.	2	- The student understands the topic	**The normal red blood cells, importance, Structure, erythropoiesis and Function**	=	=
4th.	2	The student understands the topic	**Polycythemia, causes, Clinical Signs and Laboratory diagnosis**	=	=
5th.	2	The student understands the topic	**Study the red cell morphology in health and disease Abnormality of R.B.C in size.**		
6th.	2	The student understands the topic	**Abnormality of R.B.C in shape**	=	

7th.	2	The student understands the topic	**Abnormality of R.B.C in colour.**	=	=
8th.	2	The student understands the topic	**The normal Hb. Of the blood, contain and importance. Study the types of normal Hb. Types**	=	=
9th.	2	The student understands the topic	**Common Hb. Variant.**	=	=
10th.	2	The student understands the topic	**Anemia. Definition, classification and types**	=	=
11th.	**2**	The student understands the topic	**Anemia. Causes .clinical signs and laboratory Finding,**	=	=
12th.	2	The student understands the topic	**Megaloblastic anemia and Pernicious anemia.**	=	=
13th.	**2**	The student understands the topic	**Aplastic anemia and hemolytic anemia.**	=	=
14th.	2	The student understands the topic	**Aplastic anemia and hemolytic anemia.**	=	=
15th.	2	The student understands the topic	**Sickle Cell an. And acquired and autoimmune hemolytic anemia.**		
16th.	2	The student understands the topic	**Haemostasis , definition and types . The role of blood Vessels and Platelet in Haemostasis.**		

17th.	2	The student understands the topic	**Coagulation factors, name and figures.**		
18th.	2	The student understands the topic	**Coagulative Processes**		
19th.	2	The student understands the topic	**Haemostasis disorder types. Haemostasis due to blood vessels disorder.**		
20th.	2	The student understands the topic	**Haemostasis due to blood platelet disorder**		
21th.	2	The student understands the topic	**Haemostasis due to Coagulative disorder**		
22th.	2	The student understands the topic	**The White blood Cells, types**		
23th.	2	The student understands the topic	**The maturation of W.B.C**		
24th.	2	The student understands the topic	**The function of W.B.C**		
25th.	2	The student understands the topic	**Leukocytosis**		
26th.	2	The student understands the topic	**Leukopenia**		
27th.	2	The student understands the	**Leukemia, definition and classification.**		

		topic			
28th.	2	The student understands the topic	**Chronic and acute myeloid**		
29th.	2	The student understands the topic	**L. Chronic and acute myeloid**		
30th.	2	The student understands the topic	**L Chronic and acute Monocytic** .		

The practical structure of the course

Week	**Hour**	**Required Learning Outcomes**	**Unit or subject name**	**Learn meth**	**Evaluat metho**
1st.	4	**The student understands the topic**	identify hematological laboratory system .	1-**Lecture 2- Scientific laboratories. 3-Systematic training**.	Quizze
2nd.	4	**The student understands the topic**	Erythrocyte Sedimentation rate	=	=
3th.	4	**The student understands the topic**	. Packed Cell Volume.	=	=
4th.	4	**The student understands the topic**	Hb Estimation	=	=
5th.	4	**The student understands the topic**	Study the absolute Values include MCV, MCH, and MCHC.	=	=

6th.	4	**The student understands the topic**	Abnormality of R.B.C in color, size and inclusion bodies	=	=
7th. + **8th.**	4 4	**The student understands the topic**	Abnormality of R.B.C in shape Examination.	= =	= =
9th.	4	**The student understands the topic**	Study the Reticulocyte Count.	=	=
10th.	4	**The student understands the topic**	Anemic types	=	=
11th.	4	**The student understands the topic**	Examination.	=	=
12th.	4	**The student understands the topic**	Study the abnormal Hb. (Hb.S)).		=
13th.	4	**The student understands the topic**	Study the haemostasis disorders.	=	=
14th.	4	**The student understands the topic**	Study the bleeding time	=	=
15th.	4	**The student understands the topic**	Study the Clotting time	=	=
16th.	4	**The student**	Study the Clotting time		

		understands the topic		=	=
17th	4	**The student understands the topic**	Study the Hb. Electrophoresis	=	=
18th.	4	**The student understands the topic**	Study the Plasma fibrinogen Examination.	=	=
19th.	2	**The student understands the topic**	Study the total Count of the W.B.C	=	=
20th.	2	**The student understands the topic**	Differential Count of W.B.C	=	=
21th.	4	**The student understands the topic**	Count the eosinophil. L.E Cell	=	=
22th.	4	**The student understands the topic**	Examination.	=	=
23th.	**4**	**The student understands the topic**	W.B.C Series .	=	=
24th.	4	**The student understands the topic**	Study the Leukemia.	=	=
25th.	4	**The student understands the topic**	Study the Myeloid. L.	=	=
26th.	4	**The student understands the topic**	Study the Lymphatic. L.	=	=

27th.	4	**The student understands the topic**	Study the monocytic . L	=	=
28th.	4	The student understands the topic	Study the Lymphatic. L.	=	=
29th.	4	The student understands the topic	Study the monocytic . L	=	=
30th.	4	The student understands the topic	Use the Peroxides test for differential diagnosis.	=	=

1. 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	
2. Learning and Teaching Resources	
Required textbooks (curricular boc if any)	
Main references (sources)	1., Silberstein, L. E., Heslop, H. E., Weitz, J. I., Anasta J., ... & Abutalib, S. (2017). Hematology: basic principles and practice. Elsevier Inc.. 2-Hoffbrand, A. V., & Steensma, D. P (2019). Hoffbrand's essential haematology. John Wiley & Sons. 3- arabic reference: Al-shaeer, A.,M., et al., (1991). book of blood science, AL-AHLYIA publisher
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	http://ikr.atu.edu.iq

Update report:

1. It was updated in the first week of the curriculum, as shown in the table below.

Before updating	After update
Introduction to clinical hematology include **- morphology of human blood and bone marrow cells .**	**Introduction importance of hematology. Study the blood contains.**

2.It was updated in the 13 week of the curriculum, as shown in the table below.

Before updating	After update
• Aplastic Anemia Including Pure Red Cell Aplasia,Congenital Dyserythropoietic Anernia, and Paroxysmal Noc-turnal Hemoglobinuria • Introduction to Hemolytic Anemias: Intracorpuscular Defects	**Aplastic anemia and hemolytic anemia.**

3.It was updated in the 20 week of the curriculum, as shown in the table below.

Before updating	After update
• **Introduction to Hemostasis Disorders of Primary Hemostasis: Quantitative and Qualitative Platelet Disorders and Vascular Disorders** • **Disorders of Plasma Clotting Factors** • **Disorder of Platelet**	**Haemostasis due to blood platelet disorder**

Description Form to Clinical chemistry\1

1. Course Name:
Clinical chemistry
2. Course Code:
C. CH
3. Semester / Year:
First semester
4. Description Preparation Date:
6/10/2024
5. Available Attendance Forms:
Live attendance with students
6. Number of Credit Hours (Total) / Number of Units (Total)
Theoretical – 2 hours **Practical** – 4 hours
7. Course administrator's name (mention all, if more than one name)
Name: Jaafar Khalaf Ali **Email:** jaafar.ali@atu.edu.iq
8. Course Objectives

Course Objectives	• Students will learn the basic information in clinical chemistry • Understand the role of clinical biochemistry in the health and diseas status of different body systems. • Highlight the natural pathways of biochemistry and the occurrence diseases due to biochemical disturbances associated with different diseases. • Understand and interpret the results of different clinical chemistry t

9. Teaching and Learning Strategies

Strategy	• Lecture and delivery strategy • Discussion strategy • Brainstorming strategy • Project strategy • Group work • Problem solving strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	٢	•Understanding	• Introduction to Clinical	• Lecture	• Direct

		clinical chemistry •Routine laboratory testing and readings •Types of samples and their collection	Chemistry • Introduction to Metabolism • Collection and delivery of blood samples.	• Questions and answers • Presentation	questions • Daily exam
٢	٢	• Metabolic pathway of acid-base balance • Disorders resulting from it	Acid-base balance	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
٤-٣	٤	• The role of electrolytes in maintaining cellular and systemic balance • Diseases related to increased or decreased electrolytes	• Electrolytes (Na+, K+, Cl-, Ca2+, Mg, etc.) • Diseases related to increased or decreased electrolytes	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
٥	٢	Identify trace elements and their role in metabolism, maintaining balance, and diseases related to them.	Trace elements [Cu+2, Ceruloplasmin, Zn, Mn], and diseases related to them.	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
٧-٦	٤	Learn about the role of sugar in the body, its metabolism, and how it is regulated hormonally and physiologically.	Glucose, and the hormones that regulate the process of glucose breakdown.	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
٨	٢	Exam			
٩	٢	Identify cellular metabolic pathways, the Krebs cycle and its disorders.	Krebs cycle, pathways, energy production and related disorders.	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
١٠	٢	Learn about glycogen, how it is produced and stored in the liver, as well as diseases related to	Glycogen metabolism (regulation of the synthesis process and glycogen metabolism disorders).	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
١١	٢	Identify the metabolic pathways for glucose formation	Glucose formation: Raw materials (e.g. lactate, pyruvate, alanine, etc.)	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
١٤-١٢	٦	Learn about diabetes, its types, and how to perform diagnostic tests.	Diabetes: blood sugar regulation, high blood sugar, low blood sugar.	• Lecture • Questions and	• Direct questions

				answers • Presentation	• Daily exam
١٥	٢	Final Exam Review			

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

Main references (sources)	• Clinical Chemistry Techniques, principles, correlations. Michael L. Bish MS, CLS, MT(ASCP) • Clinical Chemistry, David White, Nigel Lawson, Paul Masters • Clinical Chemistry, William J. Marshall, Marta Lapsley, Andrew Day

Update Report

The update was made in the first weeks as shown in the table below:

Before Update	After Update
• Introduction to Clinical Chemistry • Introduction to Metabolism Collection and delivery of blood samples.	Add a section on **modern laboratory automation** (analyzers, barcoding LIS – Laboratory Information Systems) Include a short segment on **inborn errors of metabolism** (e.g., phenylketonuria, maple syrup urine disease), especially those detectable via lab screening Highlight clinical relevance of metabolism pathways in diagnosing **diabetes, hyperlipidemia, urea cycle disorders**)

The update was made in the second weeks as shown in the table below:

Acid-base balance: Metabolic pathway of acid-base balance Disorders resulting from it	Add **arterial blood gas (ABG)** interpretation: pH, pCO_2, HCO_3^-, anion ga Introduce **metabolic vs. respiratory acidosis/alkalosis** with clinical ca examples Discuss modern blood gas analyzers and point-of-care testing

Description Form to Immunology

1. Course Name:
Immunology
2. Course Code:
3. Semester / Year:
Second year / First semester
4. Description Preparation Date:
26/1/2025
5. Available Attendance Forms:
Present
6. Number of Credit Hours (Total) / Number of Units (Total)
6th hours (2 Theoretical + 4 Practical)/ Number of Total unit 12 unite
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Aqeel Salman Abd Al- Salam **Hadeel salah mahdi** **Email: aqeel.alsalam.ikr@atu.edu.iq** **Ahmedalwazni2@gmail.com**
8. Course Objectives

Course Objectives	**Objectives of the course: -** The student will be able to understand immunology of it's various branches **Species:- The student will be able to:** 1- Identify the types of antibodies and how they are formed in response to a pathological infection. 2- Identify the types of antigens (pathogenic bacterial species that trigger an immune response). 3- Understand the complement factor, how it is formed, functions, and its role in the body's immunity to eliminate pathogens**.**
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

١٠. structure of the course:

First: The theoretical structure of the course

Evaluation method	Learning method	Unit or subject name	Required Learning Outcomes	Hours	Week
1. Daily Quick Qu 2. 2. Ora exams 3. Theoretic exam 4. Repor 5. dissuasion	1. Lecturer 2. Scientific Lab 3. Systematic training. 4. Summer training	Immunology: Definition and classification of the types of immunity, natural and acquired immunity, factors and defenses Natural immunity	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational.	2	First

			- Promoting the philosophy of follow-up and continuous improvement. - Helping - students ensure accountability and ensure the quality of academic programs		
=	=	Immune system, lymphoid tissues and cells, their origin, receptors, and maturation stages, primary and secondary lymphoid organs	=	2	**Second**
=	=	Phagocytosis: Macrophages, mononuclear cells, inflammation, and phagocytosis Antigen presenting cells: Origin, maturity, recipients, types	=	2	**Third**
=	=	Antigen and antigenic determination. Definition, properties, types of antigens (external and internal antigens)	=	2	**Fourth**
=	=	Antibodies Definition of antonym, composition, types, properties, manufacturing and editing	=	2	**Fifth**

=	=	Immune response: primary and secondary, their characteristics and differences, regulation of the immune response	=	2	**Sixth**
=	=	Major histocompatibility complex (MHC). Definition, types, role in antigen presentation	=	2	**Seventh**
		Complements Definition of complement, its activation, methods of activation, inhibitors, diseases associated with complement deficiency	=	2	**Eighth**
		Cytokines	=	2	**Ninth**
		Immunity against germs and toxins.The mechanism of the immune system's defense against germs		2	**Tenth**
=	=	Immunity against viruses, immunity against parasites immunity against fungi	=	2	**Eleventh**
=	=	Anti-tumor immunity Tumor definition, tumor-related antigens, their types, their relationship to different tumors, and means of escaping the body's immune system	=	2	**Twelfth**
=	=	Hypersensitivity Definition, different types, diseases caused by it	=	2	**Thirteenth**
=	=	Natural and Acquired Immunodeficiencies	=	2	**Fourteenth**

		Types and Theories			
		Vaccination, types of vaccines	=	2	**Fifteenth**

Second The practical structure of the course

1. Daily Quick Qu 2. 2. Ora exams 3. Theoreti exam 4. Repor 5. dissuasio n	**1**. Lecture 2.Scientific Lab 3. Systematic training. 4. Summer training	- General Lab instructions orientation to the student with meaning of immunity & of the lab. - Orient the student to what do we mean by the scientific references & how to use them, visiting to the library. Seminars to the student.	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting	4	**First**

			the philosophy of follow-up and continuous improvement. - Helping students ensure accountability and ensure the quality of academic programs		
=	=	Immunologic tests specimens (serum-plasma-CSF-&urine) How to handle such specimens, preservation of them & how to collect these specimens.	=	4	**Second**
=	=	- How to collect blood samples \ venous – puncture, serum collection, serum inactivation, collection of blood samples from students, preserving such samples to be used during the course. Titration & dilution (definition of them) types of dilutions &How to calculate. The dilution by tow method, micro dilution macro dilution.	=	4	**Third**
=	=	- Students solution of different problem related to the above topic, giving them (students) home work. Quiz. - Preparation of R.B.S.S suspension, methods of preservation anti-coagulants, their types,	=	4	**Fourth**

		giving the meaning of preservation of the cells, calculation of suspension dilution of different volumes. Determination of humoral agents of body. defenses (meaning of humoral agents –types , The complements , their activity by using G^+b & G^-b & their roles to the complement & serum activation .			
=	=	- Role of humoral agents to the body defense. Antigens (types of somatic & flagellar Ags) R.BS suspension , blood serum) methods of the preparation (the somatic & flagellar)	=	4	**Fifth**
=	=	Anti-bodies their preparation, meaning of Immunization, different methods of immunization.	=	4	**Sixth**
=	=	Reaction of Ag – Ab Agglutination, types of agglutination. Applications of the agglutination. Pregnancy – Test Principle, purpose, procedure, The interpretations of results, order students to write a report.	=	4	**Seventh**
=	=	C – Reactive protein Is taught as of pregnancy method.	=	4	**Eighth**
=	=	Widal test (as above). Applying the two methods slide method & dilution method. Meaning of titer,	=	4	**Ninth**

		interpretation of the results, the prozone pheno menoun. Brucella – test \ (as above) Rose- Bengal method Brucella slide test.			
=	=	Rickettsia & weil feliy test	=	4	**Tenth**
=	=	VDLR – test How to prepare of antigen emulsion tow methods :- 1- VDRL – test 2- RPR (rapid plasma Reagan of prepared Ag.) TPHA (syphilis test) The reactants substances (their contents, how to be solved, test performance with the interpretation of results, reporting & quiz's.	=	4	**Eleventh**
=	=	Viral-hepatitis (Hbs-Ag-test) The principle ,causative agent ,mode of infection , reporting , quiz's	=	4	**Twelfth**
		Viral-hepatitis (Hbs-Ag-test) The principle ,causative agent ,mode of infection , reporting , quiz's		4	**Thirteenth**
=	=	IMN – test (In reaction – mononucleosis test) The principle, causative agent, serologic diagnostic test, heterophiles Abs. differential david sohn -test.	=	4	**Fourteenth**
=	=	Echinococcus slide – agglutination test. The diagnosis ,discussion of result (confirmative positive results)	=	4	**Fifteenth**

1. 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

2. Learning and Teaching Resources

Required textbooks (curricular books, if ar	
Main references (sources)	**Electronic books from internet**
Recommended books and references (scientific journals, reports...)	Internet
Electronic References, Websites	**(https://ikr.atu.edu.iq)**

a 1- It was updated in the week tenth of the curriculum, as shown in the table belo

Before updating	After update
Immunity against germs and toxins.The mechanism of the immune system's defense against germs	Immunity against pathogenic bacteria and their toxins The mechanism by which the immune system eliminates pathogenic bacteria and acquires immunity

2- It was updated in the week thirteen of the curriculum, as shown in the table below

Before updating	After update
Hypersensitivity Definition, different types, diseases caused by it	Autoimmune Diseases definition, Causes, treatment Hypersensitivity Its different types, the diseases caused by it, and its definition.

3- It was updated in the week fifteen of the curriculum, as shown in the table below

Before updating	After update
Vaccination, types of vaccines	Vaccination, types of vaccines, methods of preparing vaccines

Description Form to Protozoa

1. Course Name:	
Medical Parasitology **(Protozoa)**	
2. Course Code:	
M.P	
3. Semester / Year:	
First Semester / second Year	
4. Description Preparation Date:	
10/2/2025	
5. Available Attendance Forms:	
In presence	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist lect. Hussain Ali Rzoqy **Assist lect. Zainab Abd Alhassan Alhussainie**	Email: hussain.rezoqy@atu.edu.iq zainab.fadel.ikr29@atu.edu.iq
8. Course Objectives	
Course Objectives	**General Goals:** The student will be able to learn about the basic principles of medical laboratories, how to work within laboratories, and perform basic examinations within medical laboratories. **Special:** The student will be able to: 1. Learn about the importance of medical laboratories and how to work within them. 2. To learn about sterilization methods and the types of risks inside laboratories, and to learn about safety procedures inside medical laboratories. 3. Learns how to perform the most important medical examinations, which are general urine tests, vaginal discharge, and semen examination, in addition to how to perform bacterial culture in the laboratory. 4. To learn about the latest and most important laboratory techniques used in laboratory diagnosis of diseases.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy by exchanging opinions and discussion.

	- Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	- Developing student knowledge through the use advanced teaching metho - Raising the leve of motivation f learning among students in its various types: internal motivation, soc motivation, and achievement motivation. - Helping the student to ensu that decisions related to the curricula and educational environment ar rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to emphasize the issue of quality assurance in academic	**Defines the parasites, parasitology types of parasites. Types of hosts, Classification of parasites, Protozoa + metazoan Metazoa [helminths and arthropods]**	1. The lectu 2. Scientific laboratories 3. Systemati training. 4. Summer training	Daily, oral ar written examinations reports, discussions

		programs.			
sconh	2	=	**Introduction generally in characteristic feature of protozoa and classification:- Rhizopoda ,Mastigophora ,Cilophora (ciliate) ,Telospora**	=	=
fourth	2	=	**Class Rhizopoda Pathogenic amoeba, Entamoeba histolytica, Morphology, life cycle, Pathogenicity ، Lab.diagnosis**	=	=
Fifth	2	=	**Few of morphology, pathogenicity, diagnosis of:- Entamoeba gingivalis, A canthomoeba, Naegleria**	=	=
Sixth	2	=	**Nonpathogenic amoeba Different between Entamoeba coli and E. histolytica. morphology, Lab, diagnosis of Iodamoeba butschlii , Endolimax nana,E. dispar ,Dientamoeba fragilis**	=	=
Seventh	2	=	**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, Trichomonas hominis, Morphology, life cycle, pathogenicity, and lab. Diagnosis.**	=	=
Eighth	2	=	**Genital flagellate Trichomonas vaginales, Oral flagellates,**	=	=

			Trichomonas tenax. Morphology, pathogenicity and lab. diagnosis		
Ninth	2	=	Tissue and blood flagellate Haemoflagellates forms. Lishmania donovani Lishmania tropica Lishmania brazeliencis Morphology, life cycle, pathogenicity, Lab. Diagnosis	=	=
Tenth	2	=	Trypanosoma cruzi Trypanosoma brucei Morphology, life cycle, pathogenicity, Lab. Diagnosis Sample of Tse-tse fly and Reduviid bug.	=	=
Eleventh	2	=	Class Ciliophra (cilata) Blantidium coli Morphology, life cycle, pathogenicity, Lab. Diagnosis	=	=
Twetveth	2	=	Review	=	=
Thirteenth	2	=	Class Sporozoa Generally, introduction of characteristic features of sporozoa. Life cycle in generally of Plasmodium spp. In man, and insects.	=	=
Fourteenth	2	=	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.		
Fifteenth			**Isosporia belli, Toxoplasma gondii Morphology, life cycle, pathogenicity, Lab. diagnosis Cryptosporidium spp. Morphology, life cycle, pathogenicity, Lab. diagnosis**		
The practical structure of the course					
First	4	- Developing student knowledge through the use advanced teaching metho - Raising the leve of motivation f learning among students in its various types: internal motivation, soc motivation, and achievement motivation. - Helping the student to ensu that decisions related to the curricula and educational environment ar rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to	**Information of parasitic Lab. diagnosis work ,** **Collection of samp Preservation and Fixati solution.**	1. The lectu 2. Scientific laboratories 3. Systemati training. 4. Summe training	Daily, oral ar written examinations repor discu ons

		emphasize the issue of quality assurance in academic programs.			
scond	4	=	**General stool examination and preparation of Iodine, Eosin and saline solutions.**	=	=
third	4	=	**Entamoeba histolytica Permanent slides and stool examination.**	=	=
fourth	4	=	**Slides of Entamoeba gingivalis, Blastocystis hominis Entamoeba coli and stool examination for E. coli and Blastocystis hominis**	=	=
fifth	4	=	**Slides of Diantamoeba fragilis, Iodamoeba butschlii ,Endolimax nana and stool examination**	=	=
sixth	4	=	**Slides of Giardia lamblia, Chilomastix mesnili stool examination**	=	=
7th	4	=	**Trichomonas vaginalis, Trichomonas hominis , Trichomonas tenax slides Stool examination and gener unrein examination**	=	=
8th	4	=	**Haemoflagellates Leishmania tropica (Lab.**	=	=

			diagnosis) **Lishmania donovani (Lab. diagnosis)** **sample of sand fly**		
Eleventh	4	=	**Trypanosoma cruzi (slides)** **Trypanosoma brucei (slides)** **With sample of Tse – tse fly, Reduviid bug**	=	=
Twetveth	4	=	**Slides of** **Blantidium coli** **Stool examination**	=	=
Thirteenth	4	=	**Review, examination**	=	=
	4	=	**Life cycle of Plasmodium spp. Sample Anopheline,** **preparation of blood film (Thick and thin blood film)**	=	=
Fourteenth	4	=	**Slides of Plasmodium vivax, Plasmodium ovali .** **Slides of Plasmodium malari Plasmodium falciparum**	=	=
Fifteenth			**Slides of Isospora belli,** **Toxoplasma gondii** **With lab. diagnosis** **Slides of Cryptosporidium spp.** **With lab. Diagnosis**		
			Review and examination		

10. 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

11. Learning and Teaching Resources	
Required textbooks (curricular books, any)	• **Basic Clinical Laboratory Techniques.** • **Essentials Of Medical Laboratory practice**
Main references (sources)	• **A Manual of Laboratory And Diagnostic Tests.** • **Fundamentals Of Urine And Body Fluid Analysis**
Recommended books and references (scientific journals, reports...)	• **Medical Laboratory Science Examination Review.** • **Tietz Clinical Guide To Laboratory Tests**
Electronic References, Websites	https://ikr.atu.edu https://microbenotes.co https://medicallabscientist.c https://labpedia. https://www.ncbi.nlm.nih.g

Update report:

1. It was updated in the 7th week of the curriculum, as shown in the table below.

Before updating	After update
I Trichomonas vaginalis, Trichomonas hominis , Trichomonas tenax slides Stool examination	**Trichomonas vaginalis, Trichomonas hominis , Trichomonas tenax slides Stool examination and general unrein examination**

2.It was updated in the 14th week of the curriculum, as shown on the table below.

Before updating	After update
Slides of Isospora belli, Toxoplasma gondii With lab. diagnosis Slides of Cryptosporidium spp. With lab. Diagnosis	**Slides of Isospora belli, Toxoplasma gondii With lab. diagnosis Slides of Cryptosporidium spp. With lab. Diagnosis (rapid teste examination)**

Description Form to Virology

1. Course Name:
Medical Virology
2. Course Code:
M.V.
3. Semester / Year:
First Semester / Second Year
4. Description Preparation Date:
10/2/2025
5. Available Attendance Forms:
In presence
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours: 3 hours (1 theoretical + 2 practical) / total number of units: 3 units
7. Course administrator's name (mention all, if more than one name)
Name: Assist.Prof.Dr. Balqees Sadoon Jasim Email: inkr.blk2@atu.edu.iq
8. Course Objectives

Course Objective	**General Goals:** The student will be able to identify the basic principles of medical virology and understand the importance and potential dangers of viruses. **Special:** The student will be able to: 1. Understanding how to collect and handle samples. 2. Learning the routine laboratory diagnostic methods for viruses. 3. Becoming familiar with the latest and most important laboratory techniques used in virus diagnosis.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy by exchanging opinions and discussion. - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required	Unit or subject name	Learning	Evaluation

		Learning Outcomes		method	method
First	1	- Developing student knowledge through the use of advanced teaching methods. - Raising the level of motivation for learning among students in its various types: internal motivation, social motivation, and achievement motivation. - Helping the student ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow up and continuous improvement. - Helping the student to emphasize the issue of quality assurance in academic programs.	Introduction, General properties of virus, structure, classification of DNA & RNA viruses.	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions
Second	1		Replication of DNA and RNA virus	=	=
Third	1		Virus isolation & cultivation.	=	=
Fourth	1	=	Chemotherapy, antiviral agent & vaccines	=	=
Fifth	1	=	Influenza viruses	=	=

Sixth	1	=	Paramyxo & Robella viruses.	=	=
Seventh	1	=	Enteric viruses, Rhinovirus group.	=	=
Eighth	1	=	Pathogenesis of viruses and Genetic of viruse	=	=
Ninth	1	=	Herpes viruses	=	=
Tenth	1	=	Oncogenic viruses	=	=
Eleventh	1	=	Hepatitis viruses	=	=
Twetveth	1	=	Rubies & other neurotropic viruses	=	=
Thirteenth	1	=	Arbo viruses & viral haemorrhagic viruses	=	=
Fourteenth	1	=	Adeno, pox & parvo viruses	=	=
Fifteenth	1	=	Retro & Adis	=	=
The practical structure of the course					
First	2	Enhancing the student knowledge through t use of advanced teaching methods tailored to each lecture's title and content, and reinforcing the scientific concepts o the subject matter.	Virus identification in general	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussio
Second	2		Equipments needed for virology lab.		
Third	2		Viral culture & isolation.		
Fourth	2	=	Elisa tests for viral identification	=	=
5-6	2	=	PCR	=	=
Seventh	2	=	Electron microscope for virus identification	=	=
8-9	2	=	Viral DNA extraction	=	=
Tenth	2	=	Viral RNA extraction	=	=

Eleventh	2	=	Detection by Neutralization test (Nt)	=	=
Twetveth	2	=	Detection by haemagglutination inhibition (HI)	=	=
13-14	2	=	Serological diagnosis and Immunological detection of virus infection	=	=
Fifteenth	2	=	review	=	=

10. 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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any	• **Basic Clinical Laboratory Techniques.** • **Essentials Of Medical Laboratory practice**
Main references (sources)	• **A Manual of Laboratory And Diagnostic Tests.** • **Fundamentals Of Urine And Body Fluid Analysis**
Recommended books and references (scientific journals, reports...)	• **Medical Laboratory Science Examination Review.** • **Tietz Clinical Guide To Laboratory Tests**
Electronic References, Websites	https://ikr.atu.edu.iq https://microbenotes.com/ https://medicallabscientist.org/ https://labpedia.net

Update report:
It was updated in the fifteen week of the curriculum, as shown in the table below.

Before updating	After update
review	**Coronavirus (COVID-19): Virology, Transmission, Clinical Features, and Diagnos Approaches**

Description Form to Medical Ethics

1. Course Name:
Medical ethics
2. Course Code:
M.E
3. Semester / Year:
1 st course / 2 st Year
4. Description Preparation Date:
30/١/202٥
5. Available Attendance Forms:
Student presence and attendance record through attendance register
6. Number of Credit Hours (Total) / Number of Units (Total)
1Theory
7. Course administrator's name (mention all, if more than one name)
Name: zahraa qais jassim Email: zahraa.jasm.ikr22@atu.edu.iq
8. Course Objectives

Course Objectives	**General: – Identifying the basic ethics of professional conduct for workers in medical specialties.** **Special: – Qualifying the graduate on professional behavior in deal with his profession and achieving harmony with himself and professional environment (the patient, his companions, workers the health field and medical devices).**

9. Teaching and Learning Strategies

Strategy	- Introducing the student to how to deal with the patient and maintain his privacy. 2- How to deal with his subordinates and colleagues at work.

10. Course Structure

Week	Hours	Required Learning	Unit or subject	Learning	Evaluation

		Outcomes	name	method	method
1st.	2	- The student understands the topic	- Principles of professional ethics in Arab and Islamic civilization.	1-Lecture 2- Scientific laboratories. 3-Systematic training.	Quizze
+		=	- Etiquette of dealing with patients in hospitals from ancient times until now.	=	
2nd.	2				=
		=	Respect the institution's r	=	
3th.	2		and regulations		=
4th.	2			=	
+			For professional confidentiality		
5th.	2				=
				=	
			Characteristics of eth as a guide and guide t		
6th.	2		behavior.		
+					=
7th.	2		Behavior of dealing w	=	
+			medical devices and		
8th.	2		equipment.		
				=	=
9th.	2		To prevent work hazards and accident		
+					
10th.	2			=	
+					=
			Prevent the risks of bacterial, toxic and		
11th.	2		radioactive contamination.	=	
					=
				=	
12th.	2				

13th.	2		**Avoid wrong practice in the field of work.**		= =

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	ashwa George "Auditor Rotation and The Quality of Audits" The CPA Journal,(Dec,2014),Vol.(74), No.(12),PP.4-22. Palmrose, Z. "An Analysis of Auditor Litigation and Audit Service lity", The Accounting Review 63 (January): 55 - 73. (2018) 3. Palmrose, Z.. "An Analysis of Auditor litigaation
Recommended books and references (scientific journals, reports…)	
Electronic References, Websites	http://ikr.atu.edu.iq

Update repot:

بعد التحديث	قبل التحديث
الأسبوع الثالث/ احترام قوانين المؤسسة ونظامها	- آداب التعامل مع المرضى في المستشفيات منذ القدم لحد الآن.
الأسبوع الخامس / السرية المهنية	الآداب الاساسية للمهنة

COURSE DESCRIPTION FORMS FOR THE SECOND YEAR/ SECOND SEMESTER

Description Form to Bacterial Pathogenicity

1. Course Name:

Pathogenic Bacteria

2. Course Code:

P.B.

3. Semester / Year:

Second year / Second semester

4. Description Preparation Date:

26/1/2025

5. Available Attendance Forms:

Present

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

6th hours (2 Theoretical + 4 Practical)/ Number of Total unit 12 unite

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

Name: Assist. **Prof. Dr. Balkeas Abd Ali Abd Aun Jwad** **Assist. Lec. Hadeel salah mahdi**
Email: inker.balk@atu.edu.iq **Ahmedalwazni2@gmail.com**

8. Course Objectives

Course Objectives	**Objectives of the course: -** The student will be able to identify pathogenic bacteria at the genus and species level **Species:- The student will be able to:** 1. Initial diagnosis of pathogenic bacterial species based on morphological characteristics 2. Diagnosis of pathogenic bacterial species based on different biochemical tests 3. Identify the virulence factors of pathogenic bacteria, especially toxins and enzymes. 4. Know the diseases resulting from pathogenic bacterial species as well as the defense mechanisms (immunity) and treatments

9. Teaching and Learning Strategies

Strategy	- Cooperative education strate - Brainstorming education strate - Educational strategy, collaborative concept plann - Strategy education real-time feedb - Education strategy notes ser - Education strategy by exchanging opinions and discuss - Educational strategy by presenting informat

	- Education strategy through training and presenting scientific developme

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping students ensure accountability and ensure the	Systemic bacteriology, Genus Staphylococcus, General characters , toxin production , enzyme. Staphylococcus aureus General characters, toxin and enzyme production, biochemical reaction, immunity, diseases	**1**. Lecturer 2. Scientific Lab 3. System traini 4. Sumr train	**1.** Daily Quick C 2. 2. Oral exa 3. Theoret ex 4. Repo 5. dissuas

		quality of academic programs			
Second	2	=	Genus Streptococcus General characters. Bio ،chemical test Antigenic characters , M protein Streptococcus group A, diseases, toxin, and immunity	=	=
Third			Streptococcus group B, C, D. Biochem reaction, immunity, disea		
fourth			Streptococcus pneumonia Streptococcus variance disease, antige		
Fifth	2	=	Genus Mycobacterium , gene characters, Classification bacteria , growth , antige structure , Disease, immun	=	=
Sixth	2	=	GenusBacillus, Bacillus anthraces General characters, biochemical reaction, antigenic structure, toxin, immunity	=	=
Seventh	2	=	Anaerobic bacteria – Clostridiu general characters. Ge Clostridium perifringeus, gene characters. Antigen structu biochemical reaction, virulen toxin. *Clostridium tetani*, disea immunity, antigenic structu *Colstridium botulinum* gene characters Antigen structu biochemical reaction, virulen tox	=	=
Eighth	2	=	Genus Neisseria, general charact biochemical reaction. Neiss gonorrhea, antigenic structu viruler Neisseria meningitides, immun	=	=

			sensitivity test. Antigenic structu virulence , immur		
Ninth	2	=	Genus Neisseria, general charact biochemical reaction. Neiss gonorrhea, antigenic structu viruler Neisseria meningitides, immun sensitivity test. Antigenic structu virulence , immur	=	=
Tenth	2	=	Enterobacteriaceae General characters , classification , biochemical reaction Genus Salmonella diseases, virulence، Immunity	=	=
Eleventh	2	=	Genus Escherichia coli, Klebsie diseases, viruler Immur	=	=
Twelfth			Genus Vibirio, history of disea general characters, Antigenic structu virulence, immunity, treatm Classical Vibirio EL-TOR bioty Vibirio parahaemical. Campyloba jeju		
Thirteen	2	=	Genus Brucella , general characte diseases , species , Zoono Yersinia pestis , general characte virulence , disea	=	=
Fourteen	2	=	Francisella , general characte transmition diseases , Viruler syphilis, VDI Nocardia , general characters , s direct smear . Mycoplasma, sha virulence, Lab.dignos	=	=
Fifteenth	2	=	Chlamydia , general characters , sha biochemical te Virulence, immun	=	=

The practical structure of the course

First	4	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping stude ensure accountabi and ensure the qua of academic progra	Genus Staphylococ General characters, Lab. diagno coagulase t catalase t		
Second	4	=	Streptococcus General characters, Lab. diagnosis sensitivity to bastracin. Treatment.	=	=
Third	4		Genus Pneumococcus		

			General characters, Lab. diagnosis Optochin		
	4	=	Corynebacterium: General characte Lab. diagnosis, Eleck test	=	=
Fifth	4	=	Mycobacterium: General character Lab. diagnosis, Z.N. stain, petroffs method.	=	=
Sixth	4	=	Genus Bacillus General characters, spore forming aerobic. Lab. diagnosis	=	=
Seventh	4		Clostridium: General characters, spo forming, anaerobic. Lab. diagnosis, macntosh jar.		
Eighth	4	=	Neisseriae: General characters, oxida test, Lab. diagnosis, growth requirements.	=	=
Ninth	4	=	Haemophilus: General characters, X and V factors, Lab. diagnosis, satellitism phenomena	=	=
Tenth	4	=	Family Enterobacteriaceae General characters, G ve- Bacilli, Im test. Types of culture media.	=	=
Eleventh	4	=	E.coli General characters, lactose ferment Lab. diagnosis.	=	=
Twelfth	4	=	Klebsiella General characters. Lab. diagnosis, lactose fermenter, Im test.	=	=
Thirteen	4		Proteus General characters. Lab. diagnosis, non-lactose ferment Classification of species.		
Fourteen	4	=	Salmonella and Shigella General chsrscteres. Lab. diagnosis.	=	=
Fifteenth	4	=	Pseudomonas: General characters. L diagnosis, types of pigments, oxida test. Vibirio General characters.	=	=

10. 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
11. Learning and Teaching Resources

Required textbooks (curricular books, any)	
Main references (sources)	**Electronic books from internet**
Recommended books and references (scientific journals, reports...)	Internet
Electronic References, Websites	**(https://ikr.atu.edu.iq)**

Update report:

1- It was updated in the first week of the curriculum, as shown in the table bel

Before updating	After update
Systemic bacteriology, Genus Staphylococcus, General characters , toxin production , enzyme , immunity, Sensitivity test.	Systemic bacteriology, Genus Staphylococcus, General characters , toxin production , enzyme. Staphylococcus aureus General characters, toxin and enzyme production, biochemical reaction, immunity, diseases

2- It was updated in the seventh week of the curriculum, as shown in the table below

Before updating	After update
Anaerobic bacteria – Clostridium, general characters. Clostridium perifringeus , general characters . Antigen structure, biochemical reaction, virulence, toxin. Clostridium tetani , disease , immunity, antigenic structure	Anaerobic bacteria – Clostridium, general characters. Genus Clostridium perifringeus, general characters. Antigen structure, biochemical reaction, virulence, toxin. *Clostridium tetani*, disease, immunity, antigenic structure, *Colstridium botulinum* general characters Antigen structure, biochemical reaction, virulence, toxin.

3- It was updated in the tenth week of the curriculum, as shown in the table below

Before updating	After update

Family Enterobacteriaceae, General characters , classification , biochemical reaction , Antigenic characters, sugar fermentation, sensitivity test. Genus	Enterobacteriaceae General characters , classification , biochemical reaction Genus Salmonella diseases, virulence، Immunity

Description Form to Clinical chemistry\2

1. Course Name:	
Clinical chemistry 2	
2. Course Code:	
C.CH2	
3. Semester / Year:	
Second semester	
4. Description Preparation Date:	
26/01/2025	
5. Available Attendance Forms:	
Live attendance with students	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theoretical – 2 hours **Practical –** 4 hours	
7. Course administrator's name (mention all, if more than one name)	
Name: Jaafar Khalaf Ali	**Email:** jaafar.ali@atu.edu.iq
8. Course Objectives	
Course Objectives	• The second semester focuses on advanced concepts in Clinical Chemistry, including detailed organ function with its laboratory test advanced diagnostic techniques. • The important metabolic pathways for different bioactive substance the body with different disease relation, and their concentrations in body fluids, especially blood, due to their importance in diagnosing such as diabetes, kidney diseases and failure and liver diseases.
9.	
Strategy	• Lecture and delivery strategy • Discussion strategy • Brainstorming strategy • Project strategy • Group work • Problem solving strategy

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 - 3	**6**	• Learn about the role of glucose in the body, its metabolism, and how it is regulated hormonally	**Glucose, and the hormones that regulate the process of glucose breakdown.**	• Lecture • Questions and answers	• Direct questions

		and physiologically. • Diabetes mellitus, types, signs and complication with diagnostic criteria		• Presentation	• Daily exam
4	٢	• Explain the biochemical pathways of protein metabolism, including protein digestion, absorption. • Describe the role of proteins in maintaining homeostasis. • Understand the role of the kidneys in filtering and excreting byproducts of protein metabolism, such as urea and creatinine. • List key biomarkers of renal function, including blood urea nitrogen (BUN), creatinine, and albumin.	**Protein metabolism and renal function**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
5-6	٤	• Explain the structure, classification, and biological functions of lipids. • Understand the pathways of lipid metabolism, including lipogenesis, lipolysis, beta-oxidation, and ketogenesis. • Identify the metabolic basis of disorders such as hyperlipidemia, atherosclerosis, and metabolic syndrome. • Explain the clinical significance of lipid profiles in diagnosing and managing these disorders.	**Lipid metabolism**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
7	٢	• Knowledge the pathways of purine and pyrimidine synthesis, salvage, and degradation. • Identification of disorders related to purine and pyrimidine metabolism, such as gout, Lesch-Nyhan syndrome, and Orotic	**Disorders of purine and pyrimidine**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam

		aciduria. • Knowledge of the laboratory techniques and tests used to diagnose purine and pyrimidine metabolism disorders.			
٨	٢	**Exam**			
٩	٢	• Knowledge of what enzymes are, and their role as biological catalysts. • Understanding the essential role enzymes in metabolic pathways and physiological processes.	**Introduction to enzyme (definition of enzymology)**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
10-11	**4**	• Knowledge of the liver's role in metabolism, detoxification, protein synthesis, and other critical physiological functions. • Types of Liver Function Tests (LFTs): Understanding the different tests used to assess liver function. • Interpret elevated or decreased enzyme levels and bilirubin, and how these changes relate to specific liver conditions (e.g., hepatitis, cirrhosis, fatty liver disease).	**Liver function tests**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
١٢	٢	Definition and Role of Tumor Markers: Understanding what tumor markers are, including their role in the detection, diagnosis, and monitoring of cancer.	**Tumor markers**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam
13-15	**6**	• Understanding Hormone Definition: Knowledge of what hormones are, including their chemical nature and their role as chemical messengers in the body. • Understanding how hormones are synthesized, stored, and secreted by endocrine glands	**Hormones**	• Lecture • Questions and answers • Presentation	• Direct questions • Daily exam

		(e.g., thyroid, adrenal, pancreas). And mechanism of action • Disorders related to hormonal imbalance.			

Final Exam Review

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

Main references (sources)	• Clinical Chemistry Techniques, principles, correlations. Michael L. Bishop, MS, CLS, MT(ASCP) • Clinical Chemistry, David White, Nigel Lawson, Paul Master • Clinical Chemistry, William J. Marshall, Marta Lapsley, Andr Day

Update Report

The update was made in the first to third weeks as shown in the table below:

Before Update	After Update
Glucose and the hormones that regulate glycolysis. • Understand the role of glucose in the body, its metabolism and how it is regulated hormonally and physiologically. • Diabetes, its types, symptoms, and complications, along w diagnostic criteria for glucose and the hormones that regulat glycolysis.	**Addition of the following topics:** • Glycated hemoglobin (HbA1c) test (its importance and methodology). • Introduction to new classifications of diabetes (Type 1, Type 2, MODY, LADA).

Updated in the ninth week of the curriculum, as shown in the table below:

Before Update	After Update
Introduction to Enzymes (Definition of Enzymology) • Know what enzymes are and their role as biological cataly Understand the fundamental role of enzymes in metabolic pathways and physiological processes.	**Electrophoresis** Definition and basic principle (the movement of charged particle an electric field) • Serum Protein Electrophoresis (SPEP): Determination of albumin, alpha-1, alpha-2, beta, and gamma globulins Diagnosis of multiple myeloma, nephrotic syndrome, and liver disease • Hemoglobin Electrophoresis: • Diagnosis of hemoglobinopathies (such as sickle cell anemia ar thalassemia) • Lipoprotein Electrophoresis: Distinguishing between lipid disorders (types I and V hyperlipoproteinemia)

Description Form to Clinical Immunology

1. Course Name:
Clinical Immunology
2. Course Code:
C.I
3. Semester / Year:
Second Course
4. Description Preparation Date:
1/5/2025
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Aqeel salman abd alsalam **Email: aqeel.alsalam.ikr@atu.edu.iq** **Assist. Lec. zahraa qais jassim** **zahraa.jasm.ikr22@atu.edu.iq**
8. Course Objectives

Course Objectives	**General objectives: Applying Immunological Concepts Clinically:** • Interpreting the role of the immune system in common diseases such as allergies, autoimmune disorders, and immunodeficiency conditions. • Understanding the mechanisms of vaccine action and methods of immunotherapy (e.g., antibody-based treatments). **Special objective: Understanding Immunological Diagnostic Tests:** • Recognizing the most important immunological tests (such as ELISA, Coombs test, and cellular immunity assays). • Correlating test results with clinical diagnosis. **Appreciating the Relationship Between the Immune System and Chronic Diseases:** • Understanding how certain diseases (such as cancer, AIDS, and

	diabetes) affect immune responses. • Studying the interaction between treatment and immunity in patients with chronic illnesses. **Encouraging Critical Thinking and Clinical Analysis:** • Developing the student's ability to analyze immunology-related clinical cases. • Applying immunological knowledge in making evidence-based therapeutic decisions.

9. Teaching and Learning Strategies

Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	Enhancing students' knowledge by using advanced teaching methods tailored to the title and content of each lecture, in order to reinforce the core concepts of the subject matter.	Rheumatic diseases and Rheumatoid arthritis	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions.
second	2	=	Systemic lupus erythromatous and Psoriatic	=	=

			arthritis		
third	2	=	Ankylosing Spondylitis and Sjogren's syndrome	=	=
4th	2	=	Behcet's disease	=	=
5th	2	=	1- Gluten sensitive entero-pathy 2-Ulcerative colitis 3-Crohn's disease	=	=
6th	2	=	Pernicious anemia	=	=
7th	2	=	Diabetes Mellitus Type I	=	=
8th	2	=	Review	=	=
9th	2	=	Autoimmune Hepatitis Diseases	=	=
10th	2	=	Primary biliary cirrhosis and primary sclerosing	=	=
11th	2	=	cholangitis	=	=
12th	2	=	Respiratory disease 1- Drug-induced respiratory disease 2- Eosinophilic pneumonia 3- Asthma	=	=
13th	2	=	Immunological thyroid disease and Immunological infertility	=	=
14th	2	=	Tumor and Tumor markers	=	=
15th	2	=	Graft versus host rejection and transplantation	=	=

10. Course Evaluation

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, writing reports, and daily, oral, monthly, and written exams.

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Essentials of Medical Parasitology • First Edition: 2014 • ISBN: 978-93-5152-329-1

Electronic References, Websites	https://ikr.atu.edu.iq

Update report:

1. It was updated in the second week of the curriculum, as shown in the table below.

After update	Before updating
Laboratory Advances in Immunodiagnostics • New biomarkers, multiplex assays, and point-of-care immunological tests.	Review

2.It was updated in the 9th week of the curriculum, as shown on the table below.

After update	Before updating
Checkpoint Inhibitors and Cancer Immunology • Mechanisms of action, resistance, and immune-related adverse events. • Tumor and Tumor markers	Tumor and Tumor markers

3. **It was updated in the 9th week of the curriculum, as shown on the table below.**

After update	Before updating
Immunological Aspects of Organ Transplantation • Advances in graft tolerance, HLA matching, and immunosuppressive strategies.	Graft versus host rejection and transplantation

Description Form to Helminthes

1. Course Name:	
Helminthes	
2. Course Code:	
MH	
3. Semester / Year:	
Second Course	
4. Description Preparation Date:	
1/1/2025	
5. Available Attendance Forms:	
Mandatory	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Total number of hours: 6 hours (2 theoretical + 4 practical) / total number of units: 6 units	
7. Course administrator's name (mention all, if more than one name)	
Name: **Assist lect. Hussain Ali Rzoqy**	Email: **hussain.rezoqy@atu.edu.iq**
8. Course Objectives	
Course Objectives Objectives of the study subject	**General aims: -** Having an idea about the human pathogenic parasites and its diseases and the lab. Diagnosis of its. **Special aims: -** To know how can be analyzed different techniques of diagnosis the pathogenic parasites. Special**:** The student will be able to: **1.** Use all types of microscopes to examine tissue samples. 2. 5. Work in the laboratories of the Department of Health as an assistant specializing in histological diagnosis.
9. Teaching and Learning Strategies	
Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback

	- Education strategy notes series. - Education strategy by exchanging opinions and discussion - Educational strategy by presenting information. - Education strategy through training and presenting scientific developments.

10. The theoretical structure of the course

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	2	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and	**In generally introduction of characteristic features of metazoa** **Helminthes (cestoda ,trematoda and nematoda**	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations, reports, discussions.

		educational environment are rational. - Promoting the philosophy of follow-up and continuous improvement . - Helping the student to ensure accountability and ensure the quality of academic programs.			
second	2	=	**Class Cestoda Taenia saginata Taenia solium Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
third	2	=	**Hymenolepis nana Hymenolepis diminuta Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
4th	2	=	**Echinococcus granulosis Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
5th	2	=	**Class Trematoda In general life cycle of Schistosoma spp. Schistosoma haematobium Schistosoma mansoni Schistosoma japonicum**	=	=
6th	2	=	**Short notes of (liver flukes) Fasciola hepatica (Lung flukes) Fasciola buski (intestinal flukes) Heterophyes heterophes Lab. diagnosis**	=	=

7th	2	=	**Class Nematode Ascaris lumbricoides Trichuris trichura Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
8th	2	=	**Enterobius vermicularis Ancylostoma dudenale Necator americanus Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
9th	2	=	**Larva migrans in human -cutenous larva migrans Ancylostoma caninum Schistosoma sp.**	=	=
10th	2	=	**-subcutenous larva migrans (scrow worm)(Myiasis) -visceral larva migrans Toxocara spp. pathogenicity, Lab. diagnosis**	=	=
11th	2	=	**Filaria Wuchereria bancrofti Loa loa Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	=	=
12th	2	=	**Examination**	=	=
13th	2	=	***Short notes of class Annelida Hirudo medicinalis in human morphology and lab. Diagnosis. 12 And from metazoan Class Arthropoda***	=	=
14th	2	=	***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***	=	=
15th	2	=	**Examination (Final)**	=	=
10. Course Evaluation					

Distribution of the grade out of 100 according to the tasks assigned to the student, such as daily preparation, writing reports, and daily, oral, monthly, and written exams.	
11. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	• Essentials of Medical Parasitology • First Edition: 2014 • ISBN: 978-93-5152-329-1
Electronic References, Websites	https://ikr.atu.edu.iq

Update report:

1. It was updated in the second week of the curriculum, as shown in the table below.

Before updating	After update
Class Cestoda **Taenia saginata** **Taenia solium** **Morphology ,life cycle ,pathogenicity, Lab. diagnosis**	**Class Cestoda** **CLASSIFICATION OF CESTODES** **Systemic Classification** **Taenia saginata** **Taenia solium** **Morphology ,life cycle ,pathogenicity, Lab. diagnosis**

2.It was updated in the 9th week of the curriculum, as shown on the table below.

Before updating	After update
Larva migrans in human **-cutenous larva migrans** **Ancylostoma caninum** **Schistosoma sp.**	**Larva migrans in human** ***Toxocara* species** **-cutenous larva migrans** **Ancylostoma caninum** **Schistosoma sp.**

Description Form to Medical Mycology

1. Course Name:
Medical Mycology
2. Course Code:
MM
3. Semester / Year:
Second Course / 2nd
4. Description Preparation Date:
1/2/2025
5. Available Attendance Forms:
Mandatory
6. Number of Credit Hours (Total) / Number of Units (Total)
Total number of hours: 3 hours (1 theoretical + 2 practical) / total numb of credits: 3 credits
7. Course administrator's name (mention all, if more than one name)
Name: **Assist lect. Zainab Abd Alhassan Alhussainie** Email: zainab.fadel.ikr29@atu.edu.iq
8. Course Objectives

Course Objectives	**General aims: -** Having an idea about the human pathogenic fungi and its diseases and the lab. Diagnosis of its. **Special aims: -** To know how can be analyzed different techniques of diagnosis the pathogenic fungi. Special**:** The student will be able to: **1.** Use all types of microscopes to examine the samples. **2**.Work in the laboratories of the Department of Health as an assistant specializing in mycological diagnosis.
9. Teaching and Learning Strategies	

Strategy	- Cooperative education strategy. - Brainstorming education strategy. - Educational strategy, collaborative concept planning. - Strategy education real-time feedback - Education strategy notes series. - Education strategy by exchanging opinions and discussion - Educational strategy by presenting information. -Education strategy through training and presenting scientific developments

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	1	- Raising the level of motivation for learning in its various types: internal motivation, social motivation, and achievement motivation. - Creating opportunities to implement a collective planning approach to the curriculum, and for cooperation among faculty members to identify gaps and repetitions. - Helping the student to ensure that decisions related to the curricula and educational environment are	**Introduction of medical Fungi**	1. The lecture. 2. Scientific laboratories. 3. Systematic training. 4. Summer training	Daily, oral and written examinations , reports, discussions.

		rational. - Promoting the philosophy of follow-up and continuous improvement. - Helping the student to ensure accountability and ensure the quality of academic programs.			
second	1	=	**Structure, reproduction and classification.**	=	=
third	1	=	**Cultural characteristics, type of mycosis**	=	=
4th	1	=	**General principle in treatment**	=	=
5th	1	=	**Actinomyces, Nocardia, Mycetoma**	=	=
6th	1	=	**Dermatophytes**	=	=
7th	1	=	**Candidiasis**	=	=
8th	1	=	**Cytococcsis**	=	=
9th	1	=	**Cryptococcusis**	=	=
10th	1	=	**Examination**	=	=
11th	1	=	**Histoplasmosis, sporotrichosis**	=	=
12th	1	=	**Micellanaus fungi ,Aspergillosis, mucor**	=	=
13th	1	=	**Rhizopus & penicillium**	=	=
14th	1	=	**Anti-fungal agents , antibiotic produced by fungi**	=	=
15th	1	=	**Examination (Final)**	=	=

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

11. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports…)	• Essentials of Clinical Mycology • First Edition: 2011 • ISBN:1441966404, 978144166407
Electronic References, Websites	https://ikr.atu.edu.iq

Update report:

1. It was updated in the seventh week of the curriculum, as shown in the table below.

Before updating	After update
Candidiasis	Candidiasis and Opportunistic Fungal Infections

2.It was updated in the fourteenth week of the curriculum, as shown in the table below.

Before updating	After update
Anti-fungal agents, antibiotic produced by fungi	Anti-fungal agents and Resistance ,antibiotic produc by fungi

Description Form to Computer application (Artificial Intelligence)

1. Course Name: Computer Application (Artificial Intelligence)
Computer Application
2. Course Code:
C.A.
3. Semester / Year: First semester / First year
4. Description Preparation Date: 1/4/2025
5. Available Attendance Forms: Communication in person and electronic communication
6. Number of Credit Hours (Total) / Number of Units (Total) : 3 hours / 3 Units
7. Course administrator's name (mention all, if more than one name)
Name: **Assistant Lect. Ahmed Saaed** Email: ahmed.jabar.ikr24@atu.edu.iq
8. Course Objectives: The student must be able to use a computer, be familiar with its use, and understand how to use its software

Course Objectives	Training the student and developing his scientific abilities to benefit from the computer. Providing the student with creative mental abilities, helping him in inductive and deductive logical thinking, and developing his abilities to solve dilemmas. Strengthening the factor of desire towards the computer and its applications and providing the student with positive tendencies aimed at information technology to employ it and benefit from it in the field of medical laboratories in the future.

9. Teaching and Learning Strategies

Strategy	Theoretical learning and practical technical application

10. The theoretical structure of the course

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

Week No.	Content	No. of Hours Theoretical	No. of Hours Practical
1.	**Security and Networking:** What is a network? Types of networks. Basic network components.	1	2
2.	**Security and Networking (Cont.):** Network Security Basics. Understanding network threats.	1	2
3.	**E-Commerce:** Concepts of Electronic banking services this include online banking: ATM and debit card services, Phone banking, SMS banking, electronic alert, Mobile banking	1	2
4.	**Computer Troubleshooting:** Identifying and solving common hardware and software problems that computer users encounter.	1	2
5.	**Computer Troubleshooting (Cont.):** Basic troubleshooting techniques and tools for diagnosing and resolving issues.	1	2
6.	**Introduction to AI:** Definition of AI, History of AI, AI Techniques and Approaches.	1	2
7.	**Introduction to AI(Cont.):** Key Characteristics of AI, Benefits of AI, Challenges and Ethical considerations.	1	2
8.	**The Role of AI in Modern Smartphones:** AI-Driven Mobile Technologies, Virtual Assistants (Siri, Google Assistant, Alexa).	1	2
9.	**The Role of AI in Modern Smartphones (Cont.):** Adaptive Learning, Real-Time Translation Services.	1	2
10.	**Applications and Tools of AI:** Overview of AI Applications in Various Industries, Education and Healthcare.	1	2
11.	**Applications and Tools of AI (Cont.):** Transportation, Marketing and Advertising.	1	2
12.	**Applications and Tools of AI(Cont.):** Finance, Robotics and Automation Technologies.	1	2
13.	**AI and Society:** How AI affects social, AI and international relations, AI and the future of humanity.	1	2
14.	**Ethical Challenges in AI** : AI ethics, privacy and surveillance, the impact of AI on the job market.	1	2
15.	**The Future of AI:** Future trends in AI, recent research and emerging technologies.	1	2

10. 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

11. Learning and Teaching Resources

Required textbooks (curricular books	Computer Applications Book issued by the Iraqi Ministry of

any)	Higher Education
Main references (sources)	Computer Applications Book issued by the Iraqi Ministry of Higher Education
Recommended books and references (scientific journals, reports...)	Everything related to Iraqi and Arabic computer applications.
Electronic References, Websites	Websites of the universities of the Iraqi Ministry of Higher Educat and Scientific Research

Suggested Books

1. 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 (AI)", 1st Edition (2024).
4. Microsoft Office 2019 Step by Step 1st Edition by Curtis Frye & Joan Lambert
5. 2016 "أساسيات الحاسوب" , الخضر علي الخضر بحاث
6. 2005 "مدخل إلى عالم الذكاء الاصطناعي" , الدكتور عادل عبدالنور