Ministry of Higher Education and Scientific Research

Academic program and course

2024

Introduction

The educational program is considered a coordinated and organized package of academic courses that includes procedures and experiences organized in the form of academic vocabulary, the main purpose of which is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that students are working to acquire based on the objectives of the academic program. The importance of this description is evident because it represents the cornerstone of obtaining program accreditation, and the teaching staff participates in writing it under the supervision of the scientific committees in the scientific departments.

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

In this area, we can only emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth conduct of the educational process.

Concepts and terminology:

Description of the academic program: 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: It provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has 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 an advanced, inspiring, motivating, realistic and applicable program.

Program message: It briefly explains the objectives and activities necessary to achieve them, and also identifies the program's development paths and directions.

Program Goals: 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/study subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), along with the number of study units.

Learning Outcomes:A compatible set of knowledge, skills, and values that the student has acquired after successfully completing the academic program. The learning outcomes for each course must be determined in a way that achieves the program objectives.

Teaching and learning strategies: They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, it describes all curricular and extracurricular activities to achieve the learning outcomes of the program.

Academic program description form

University: Al-Furat Al-Awsat Technical University.
Institute: Kufa Institute
Department: Medical Laboratory Techniques
The academic program: Diploma
Final certificate: Technical Diploma
Program: Semester
The description was prepared on 30/4/2024
File filling date: 30/4/2024

Signature:
Dr. Ahmed Fadhel AlShawi
Head of Department:
Date: 30.04.2024

Signature:
Assist. Prof. Nadia Abdul Hadi
Assistant Dean 4/5/2024
Date:

File has been checked by
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance
Division:
Date 4/5/2024
Signature

Signature of the Dean

See the program.1

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 message.2

Achieving excellence in teaching and learning, 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.

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Program Goals.3

The department aims to

1- Graduated highly skilled technical person capable to work in medical laboratories, conducting routine laboratory analysis, general chemical examinations,

and examining various body fluids such as serum, cerebrospinal fluid, sputum, and semen.
2- Graduate students conduct various researches and contribute to raise the level of health education and cooperation with various organizations.
.

Program accreditation.4
Does the program have program accreditation? From which side? **No**

Other external influences.5
Is there a sponsor for the program? **No**

Program structure.6				
comments *	**percentage**	**Study unit**	**Number of courses**	**Program structure**
	%8.1	**11**	**6**	**Enterprise requirements**
	5.9%	**8**	**3**	**College requirements**
	85.9%	**116**	**22**	**Department requirements**
	–	–	**2 months**	**summer training**
				Other

* Notes may include whether the course is core or elective.

Program description .7				
Credit hours		Name of the course or course	Course or course code	Year/level
practical	theoretical			
4	2	Laboratory techniques		The first stage/first semester
3	2	Slides preparations		
2	2	Laboratory Instruments		
3	2	Histology		
4	2	Analytical chemistry		
2	1	Fundamental of Nursing		
2	1	Computer applications		
0	2	Human Right and Democracy		
4	2	Quality control		First stage/second semester
3	2	Histological techniques		
2	2	Molecular biology		
2	1	Laboratory safety		
2	1	Blood Transfusion		
4	2	Biochemistry		
–	2	English		
4	2	Microbiology		The second stage/first semester
4	2	Hematology 1		
4	2	Clinical Chemistry1		
4	2	Immunology		
4	2	Protozoa		
2	1	Virology		
–	2	Medical Ethics behavior		
–	2	Baath crimes		

4	2	Bacterial Pathogenicity		The second stage/second semester
4	2	Hematology 2		
4	2	Clinical Chemistry 2		
4	2	Clinical immunology		
4	2	Helminthes		
2	1	Medical Mycology		
–	2	Graduation Project		

8 – Expected learning outcomes of the program	
Knowledge	
Statement of learning outcomes1	Learning Outcomes1 Knowledge and understanding 1- Clarification Concepts the basic for work in Laboratories Medical a2-Acquisition The skill in to treat Problems And obstacles that Facing a job Laboratories a3- Acquisition Skills the basic for work in Analytics Pathogenesis a4- How writing Reports Medical
Skills	
Statement of learning outcomes2	Learning Outcomes2 B 1-Preparing culture media to diagnose microorganisms B 2-Writing results Report B 3 - Capacity on Diagnosis causes of the disease
Statement of learning outcomes3	Learning Outcomes3
Value	

- Quizzes
- Mid-term and final exams
- Group discussion during lectures
- Reports
- Graduation project
- Summer training

9-Teaching and learning strategies

Teaching and learning strategies and methods adopted in implementing the program in general.

Theoretical and practical lectures and conducting scientific experiments to teach these skills over two years.

Summer training at Teaching Hospitals

10-Evaluation methods

Implementing it in all stages of the program in general.

Evaluating the student inside the classroom through daily attendance, the student's interaction with the lecture and class discussions, the student's self-behavior, quiz, semester and final exams.
- Homework assignments.

11-The teaching staff

Faculty members

Preparing the teaching staff		Special requirements/skills (if any)		Specialization		Scientific rank
lecturer	Staff			Specialty	general	
	✓			Mycology	Biology	Prof. Fadhil Sami-Zhgair
	✓			Microbiology	Biology	Assit. Prof. Dr. Noor Ismail Nasser
	✓			Organic chemistry	Chemistry	Assit. Prof. Dr. Mahmoud Mohy Fahd
	✓				Biology	Assit. Prof. Maysoon Khudair Abdel Abbas
	✓			Clinical and biochemistry	Pathological analyses	Dr. Ahmed Fadhil Alshawi
	✓			Molecular biology	Biology	Lect. Taif Razzaq Majeed
	✓			Parasites	Biology	Lect. Abbas Nasser Hussein
	✓			Physiology	Biology	Assit. Prof. Dr. Rusal Arif Abdel Ali
				Parasites	Biology	Dr. Mona Adel Ismail
				Microbiology	Biology	Lect. Fatima Hamza Sahib
				Histology	Biology	Lect. Noor Ibrahim Abdel Zahra

				Immunity	Biology	Lect. Sarah Hassan Kazem
				Immunology	Pathological analysis	Assit. Lect. Karar Qais Abdel Jalil
					Pathological analysis	Inaam Radi Ahmed
					Pathological analysis	Salma Amer Salem
				Physical chemistry	Chemistry	Lect. Etemad Abdul Ali Abdul Rahman
					Pathological analyses	Ali Abdel Amir Githum
					Biology	Inaam Hashem Gafla
					Biology	Iqbal Yusuf Abdul
					Pathological analysis	Ali Kazem is tired

Professional development

Orienting new faculty members

Briefly describes the process used to orient new, visiting, full–time, and part–time faculty at the institution and department levels.

By holding introductory and skills courses for new staff

Professional development for faculty members

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

Enroll **the staff in advance courses such as courses on teaching, learning, and skills development**

Acceptance standard.1
(Developing regulations related to admission to the college or institute, whether central admission or others mentioned) **The instructions of Ministry of Higher Education and Scientific Research.**

The most important sources of information about the program.2
B**ooks, Lectures, Researches, Internet, The central library, Experiences Universities Arabic And global**.

Program development plan .3
Adding global scientific developments and keeping pace with modern developments in the field of medical laboratories by involving teaching staff in advanced specialized courses.

Program skills chart

Outputs Learning required from the program															
Value				**Skills**				**Knowledge**				**Essential or optional?**	**name The decision**	**Code The decision**	**the year / the level**
C4	**C3**	**C2**	**C1**	**B 4**	**B 3**	**B 2**	**B 1**	**a 4**	**a 3**	**a2**	**a 1**				

Please situation Signal in Squares the interview For outputs Learning Individuality from the program Submissive For evaluation

Curriculum skills chart

Please check the boxes corresponding to the individual learning outcomes from the programs being evaluated

Learning outcomes required from the program

Transferable general and qualifying skills (other skills related to employability and personal development)				Emotional goals And value				Skills objectives of the program				Cognitive goals				Semester /basic	Course Name	Course Code	Year/level
Dr4	Dr3	Dr2	Dr1	C4	C3	C2	C1	B4	B3	B2	B1	a4	a3	a2	a1				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Laboratory techniques	1	first year/first course
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Slides preparation	2	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Laboratory instruments	3	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Histology	4	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Analytical Chemistry	5	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Assist	Fundamentals of nursing	6	
						*	*							*		Assist	Democracy and human rights	7	
						*	*							*		Assist	Computer Applications	8	

Curriculum skills chart

Please check the boxes corresponding to the individual learning outcomes from the programs being evaluated

Learning outcomes required from the program

Transferable general and qualifying skills (other skills related to employability and personal development)				Emotional goals And value				Skills objectives of the program				Cognitive goals				Semester /basic	Course Name	Course Code	
Dr4	Dr3	Dr2	Dr1	C4	C3	C2	C1	B4	B3	B2	B1	a4	a3	a2	a1				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Quality Control	1	first year/Second course
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Histological techniques	2	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Molecular biology	3	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Laboratory safety	4	
*	*			*	*	*	*									Fundamental	Blood transfusion	5	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Biochemistry	6	
					*	*							*			Assist	English Language	7	

Curriculum skills chart

Please check the boxes corresponding to the individual learning outcomes from the programs being evaluated

Learning outcomes required from the programme

Transferable general and qualifying skills (other skills related to employability and personal development)				Emotional goals And value				Skills objectives of the program				Cognitive goals				Semester /basic	Course Name	Course Code	Year/level
Dr4	Dr3	Dr2	Dr1	C4	C3	C2	C1	B4	B3	B2	B1	a4	a3	a2	a1				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Microbiology	1	Second year/ First Course
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Heamatology 1	2	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Clinical Chemistry 1	3	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Immunology	4	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Protozoa	5	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Virology	6	
						*	*									Assist	Medical Ethics	7	

Curriculum skills chart

Please check the boxes corresponding to the individual learning outcomes from the programs being evaluated

Learning outcomes required from the programme

Transferable general and qualifying skills (other skills related to employability and personal development)				Emotional goals And value				Skills objectives of the program				Cognitive goals				Semester /basic	Course Name	Course Code	Year/ level
Dr4	Dr3	Dr2	Dr1	C4	C3	C2	C1	B4	B3	B2	B1	a4	a3	a2	a1				
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Bacterial pathogenicity	1	Second Year/ Second Course
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Heamatology 2	2	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Clinical Chemistry 2	3	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Clinical Immunology	4	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Helminthes	5	
*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	Fundamental	Mycology	6	

Course description form

1- Clinical Chemistry 1 and 2
2- Code
Course/ Year 2nd
date Preparation this the description 2/18/2024
Attendance
In-person
Total hours/week = 6, Credit = 6/course
15 weeks each Course 1st course contains L1-15 (90 hr/ 6 credits) 2nd course contains L16-30 (90h/ 6credits)
Principal Investigator
Dr. Ahmed Alshawi Email : ah_alshawi@atu.edu.iq
Course objectives

At the end of this course students will be familiar with the most metabolic diseases and methods of laboratory diagnosis	**Objectives of the study subject**

Teaching and learning strategies	
- Lectures (theory and practical), and group discussion - PowerPoints - Self-education	**strategy**

Course evaluation .1
Students are assessed according their activity, experiments attendance, quiz, mid-term exam and final exam.
Learning and teaching resources .2

	Required textbooks (methodology, if any)

Clinical Chemistry and metabolism	Main references (sources)
	Recommended supporting books and references (scientific journals, reports….)
AK Lecture	ctronic references, Internet sites

Evaluation Methods	Education Methods	name Unit /or the topic	Outputs Learning required	hours	the week
Quiz, mid and final exam	Theory and Practical Lecture	Introduction, collection and handing of blood samples, anti-coagulant protein receipt ant kinds, urine compassion, urine collection methods urine preservative		2 Theoretical	1
Quiz, mid and final exam	Theory and Practical Lecture	Electrolyte (NA+ , K+ , ph-3 , Fe+3,4)		2 Theoretical	2
Quiz, mid and final exam	Theory and Practical Lecture	Trace element [cu, co, zn, mg] ,disease appeared in abnormal metabolism of these metals		2 Theoretical	3
Quiz, mid and final exam	Theory and Practical Lecture	Acid base balance in disease appeared in disturbance of acidity and alkaline of blood, types of buffer system.		2 Theoretical	4
Quiz, mid and final exam	Theory and Practical Lecture	Carbohydrate.		2 Theoretical	5

Quiz, mid and final exam	Theory and Practical Lecture	Digestion, absorption in normal condition and abnormal condition		2 Theoretical	6
Quiz, mid and final exam	Theory and Practical Lecture	Glucose Tolerance test in normal condition and in DM		2 Theoretical	7
Quiz, mid and final exam	Theory and Practical Lecture	Glucose metabolism, No. of hormones reside glucose level, hormone decrease blood glucose level		2 Theoretical	8
Quiz, mid and final exam	Theory and Practical Lecture	Types of DM, ketosis, glycosuria.		2 Theoretical	9
Quiz, mid and final exam	Theory and Practical Lecture	Proteins		2 Theoretical	10
Quiz, mid and final exam	Theory and Practical Lecture	Digestion and absorption of proteins in normal and abnormal conditions.		2 Theoretical	11
Quiz, mid and final exam	Theory and Practical Lecture	Abnormal protein types and the disease appeared with these proteins		2 Theoretical	12

Quiz, mid and final exam	Theory and Practical Lecture	Protein metabolism, types of metabolism, protein function		2 Theoretical	13
Quiz, mid and final exam	Theory and Practical Lecture	Electrophoresis of plasma protein, types of blood protein, disease accompanied by these proteins		2 Theoretical	14
Quiz, mid and final exam	Theory and Practical Lecture	Proteinuria, causes, disease accompanied by it.		2 Theoretical	15
Quiz, mid and final exam	Theory and Practical Lecture	Protein determination methods		2 Theoretical	16
Quiz, mid and final exam	Theory and Practical Lecture	Lipid, type of lipids, function classification.		2 Theoretical	17
Quiz, mid and final exam	Theory and Practical Lecture	Digestion, absorption of lipids.		2 Theoretical	18
Quiz, mid and final exam	Theory and Practical Lecture	Metabolism of lipid, disease appeared with abnormal condition		2 Theoretical	19

Quiz, mid and final exam	Theory and Practical Lecture	Cholesterol, triglyceride, free fatty acid.		2 Theoretical	20
Quiz, mid and final exam	Theory and Practical Lecture	Lipoproteins, types, disease accompanied by abnormal condition		2 Theoretical	21
Quiz, mid and final exam	Theory and Practical Lecture	Hyperlipidemia		2 Theoretical	22
Quiz, mid and final exam	Theory and Practical Lecture	Enzyme, important in the body.		2 Theoretical	23
Quiz, mid and final exam	Theory and Practical Lecture	Classification and function of enzymes		2 Theoretical	24
Quiz, mid and final exam	Theory and Practical Lecture	Factors effect on enzyme activity.		2 Theoretical	25
Quiz, mid and final exam	Theory and Practical Lecture	Changes in enzyme activity and the disease accompanied by that change		2 Theoretical	26

Quiz, mid and final exam	Theory and Practical Lecture	liver function test.		2 Theoretical	27
Quiz, mid and final exam	Theory and Practical Lecture	Hormones, types, properties, functions.		2 Theoretical	28
Quiz, mid and final exam	Theory and Practical Lecture	Hormones mechanism, disease accompanied by abnormal secretion		2 Theoretical	29
Quiz, mid and final exam	Theory and Practical Lecture	Tests and comprehensive		2 Theoretical	30

Subject
Microbiology / bacterial pathogenicity
Code
Year
2023/2024
date Preparation this the description
2/18/2024
Attendance
In-person
Total hours/week = 6, Credit = 6/course
15 weeks each Course 1st course contains L1-15 (90 hr/ 6 credits) 2nd course contains L16-30 (90h/ 6credits) 18
Principal investigator
Assi. Prof. Dr. Noor Ismael Naser Email : noomasser1984@gmail.com

Course objectives	
Students will be familiar with the most fundamental issues of bacteriology	**Objectives of the study subject**

Teaching and learning strategies .1	
- Lectures (theory and practical), and group discussion - PowerPoints - Self-education	**strategy**

Course evaluation .2
Students are assessed according their activity, experiments attendance, quiz, mid-term exam, and final exam.

Learning and teaching resources .3	
	quired textbooks (methodology, if any)
Medical bacteriology Medical microbiology 3rd edition	in references (sources)
https://www.ncbi.nlm.nih.gov/pubmed/	ctronic references, Internet sites

Evaluation methods	Education methods	name Unit \or the topic	Outputs Learning required	hours	the week
Exams Oral And practical	Lectures And Practical	Behavior inside lab	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	1
Exams Oral And practical	Lectures And Practical	Bacterial cell shape aggregation make a smear simple stain.	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	2
Exams Oral And practical	Lectures And Practical	Differential stain, gram stain, acid fast stain, special stain, capsule stain, spore stain, spirochetes stain.	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	3
Exams Oral And practical	Lectures And Practical	Weight composition of media agar classification of media, solidity, function	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	4
Exams Oral And practical	Lectures And Practical	Sterilization and disinfection type of sterilization and disinfection	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	5
Exams Oral And practical	Lectures And Practical	Growth requirement, preparation of media	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	6
Exams Oral And practical	Lectures And Practical	Techniques on media, streaking, stabbing, inoculation, purring.	to understand Subjectivity And portability on application Experiments In a way	6	7

			correct And blogging Results		
Exams Oral And practical	Lectures And Practical	Staphylococcus, character characteristics, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	8
Exams Oral And practical	Lectures And Practical	Streptococcus, character characteristics, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	9
Exams Oral And practical	Lectures And Practical	Pneumococcus character characteristics, lab diagnosis,	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	10
Exams Oral And practical	Lectures And Practical	Corynebacterium character characteristics, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	11
Exams Oral And practical	Lectures And Practical	Mycobacterium character characteristics, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	12
Exams Oral And practical	Lectures And Practical	Bacillus general characters, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	13
Exams Oral And practical	Lectures And Practical	Clostridium, general characters, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	14

Exams Oral And practical	Lectures And Practical	Neisseriae general characters, lab diagnosis	to understand Subjectivity And portability on application Experiments In a way correct And blogging Results	6	15

Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	the week
Oral and practical exams	Lectures and practical	Haemophilus, general characteristic, laboratory diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	16
Oral and practical exams	Lectures and practical	Enterobacteriaceae, general characteristic, lab diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	17
Oral and practical exams	Lectures and practical	E.coli, general characteristic, laboratory diagnosis.	Understand the subject and be able to apply experiments correctly and write down the results	6	18
Oral and practical exams	Lectures and practical	klebsiella general characteristic, lab diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	19
Oral and practical exams	Lectures and practical	proteus general characteristic, lab diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	20
Oral and practical exams	Lectures and practical	Salmonella and shigella general characteristic, lab diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	21
Oral and practical exams	Lectures and practical	pseudomonas general characteristic, lab diagnosis	Understand the subject and be able to apply experiments correctly and write down the results	6	22
Oral and practical exams	Lectures and practical	vibirio general characteristic, lab diagnosis	Understand the subject and be able to apply	6	23

			experiments correctly and write down the results		
Oral and practical exams	Lectures and practical	Sensitivity test and introduction to antibiotic	Understand the subject and be able to apply experiments correctly and write down the results	6	24
Oral and practical exams	Lectures and practical	Collection of clinical urine samples	Understand the subject and be able to apply experiments correctly and write down the results	6	25
Oral and practical exams	Lectures and practical	Collection of clinical samples stool. stool	Understand the subject and be able to apply experiments correctly and write down the results	6	26
Oral and practical exams	Lectures and practical	Collection of clinical samples sputum	Understand the subject and be able to apply experiments correctly and write down the results	6	27
Oral and practical exams	Lectures and practical	Collection of clinical samples Body fluid	Understand the subject and be able to apply experiments correctly and write down the results	6	28
Oral and practical exams	Lectures and practical	Collection of clinical samples blood. blood	Understand the subject and be able to apply experiments correctly and write down the results	6	29
Oral and practical exams	Lectures and practical	review	Understand the subject and be able to apply experiments correctly and write down the results	6	30

Subject
Protozoa / Helminthes
Code
year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-person
Number of study hours (total)/number of units (total)
(180) hours
Name of the course administrator (if more than one name is mentioned)
Name: M.D. Mona Adil Ismael Email :
Course objectives
Definition and introduction to the most important medical parasitology Identifying the most important diseases and the most common diseases in laboratories, understanding the mechanism of parasite development, understanding the factors that lead to infection with parasitic diseases, classifying parasites, analyzing the results that students reach and comparing them with standard samples.
Teaching and learning strategies .1
- Lectures (theory and practical), and group discussion - PowerPoints - Self-education
Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3	
Text book of Medical Parasitology/Educational bag	quired textbooks (methodology, if any)
Sources for each subject	in references (sources)
Scientific journals in the field List of publications in parasitology	Recommended supporting books and references (scientific journals, reports….)
Internet	ctronic references, Internet sites

Syllabus					
Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
Quiz +Presence	theoretical	Defines the parasites, parasitology types of parasites, Types of host Classification of parasites Protozoa + metazoan Metazoa [helminthes and arthropoda]	He recognizes requesteron	2 Theoretical	the first
Quiz +Presence	theoretical	Introduction generally in characteristic feature of protozoa and classification:- Rhizopoda, Mastigophora, Cilophora (ciliate), Telospora	Understands requester the topic	2 Theoretical	the second
Quiz +Presence	theoretical	Class Rhizopoda Pathogenic amoeba Entamoebahistolytica Morphology, life cycle, pathogenicity, Lab.diagnosis	Understands requester the topic	2 Theoretical	the third
Quiz +Presence	theoretical	Few of morphology, pathogenicity, diagnosis of:- Entamoeba gingivalis, A canthomoeba, Naegleria	Understands requester the topic	2 Theoretical	the fourth
Quiz +Presence	theoretical	Different between Entamoeba coli and E. histolytica. and morphology, Lab, diagnosis of Iodamoeba butschlii, Endolimax nana, E. Dispar, Dientamoeba fragilis	Understands requester the topic	2 Theoretical	Fifth
Quiz +Presence	theoretical	Class Mastigophor or Flagellates generally introduction in characteristic feature and classification in (intestinal flagellates, blood and tissue flagellates, genital flagellates). Intestinal Flagellate:-	Understands requester the topic	2 Theoretical	VI

		Giardialamblia, Chilomastix mesnili, Trichomonas hominis, Morphology, life cycle, pathogenicity, and lab. Diagnosis			
Quiz +Presence	theoretical	Genital flagellate Trichomonasvaginales Oral flagellates Trichomonastenax Morphology, pathogenicity and lab. diagnosis	Understander the topic	2 Theoretical	Seventh
Quiz +Presence	theoretical	Tissue and blood flagellate Haemoflagellate forms. Lishmaniadonovani Lishmaniatropica Lishmaniabrazeliencis Morphology, life cycle, pathogenicity, Lab. diagnosis	Understands requester the topic	2 Theoretical	VIII
Quiz +Presence	theoretical	Trypanosomacruzi Trypanosomabrucei Morphology, life cycle, pathogenicity, Lab. Diagnosis Sample of Tse-tse fly and Reduviid bug.	Understands requester the topic	2 Theoretical	Ninth
Quiz +Presence	theoretical	Class Ciliophra (cilata) Plantidiumcoli Morphology, life cycle, pathogenicity, Lab. diagnosis	Understander the topic	2 Theoretical	The tenth
		Review	review For the material Previous	2 Theoretical	atheistic ten
Quiz +Presence	theoretical	Class Sporozoa General introduction of characteristic features of sporozoa. Life cycle in general of Plasmodium spp. In man and insects.	Understander the topic	2 Theoretical	the second ten
Quiz +Presence	theoretical	Plasmodiumvivax Plasmodiumovale pathogenicity, Lab. diagnosis	Understander the topic	2 Theoretical	the third ten
Quiz +Presence	theoretical	Plasmodiummalariae Plasmodiumfalciparum pathogenicity, Lab. Diagnosis and short notes of parasites Babesia spp. The differences in lab. diagnosis with Plasmodium spp.	Understander the topic	2 Theoretical	the fourth ten

Quiz +Presence	theore tical	Isosporiabelli, Toxoplasma gondii Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	Fifth ten
Quiz +Presence	theore tical	Cryptosporidiumspp. Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	VI ten
Quiz +Presence	theore tical	Review and examination (First one)	Unders tands request er the topic	2 Theore tical	Seventh ten
Quiz +Presence	theore tical	In general introduction of characteristic features of metazoa Helminthes (cestoda, trematoda and nematoda)	Unders tands request er the topic	2 Theore tical	VIII ten
Quiz +Presence	theore tical	Class Cestoda Taeniasaginata Taeniasolium Morphology, life cycle, pathogenicity, Lab. diagnosis	Underst ands requeste r the topic	2 Theoret ical	Ninth ten
Quiz +Presence	theore tical	Hymenolepisnana Hymenolepisdiminuta Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	The twentiet h
Quiz +Presence	theore tical	Echinococcusgranulosis Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	atheistic And the twenty
Quiz +Presence	theore tical	Class Trematoda In general life cycle of Schistosomaspp. Schistosomahaematobium Schistosomamansoni Schistosomajaponicum Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	the second And the twenty
Quiz +Presence	theore tical	Short notes of (liver flukes) Fasciola hepatica (Lung flukes) Fasciola buski	Unders tands request	2 Theore tical	the third

		(intestinal flukes) Heterophyes heterophes Lab. diagnosis	er the topic		And the twenty
Quiz +Presence	theore tical	Class Nematode Ascarislumbricoides Trichuristrichura Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	the fourth And the twenty
Quiz +Presence	theore tical	Enterobiusvermicularis Ancylostomadudenale Necatoramericanus Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	Fifth And the twenty
Quiz +Presence	theore tical	Larvae migrans in humans 1-cutenous larvae migrans Ancylostomacaninum Schistosomasp. 2-subcutenous larva migrans (scrow worm)(Myiasis) 3-visceral larva migrans Toxocaraspp. pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	VI And the twenty
Quiz +Presence	theore tical	Filaria Wuchereriabancrofti Loa loa Morphology, life cycle, pathogenicity, Lab. diagnosis	Unders tands request er the topic	2 Theore tical	Seventh And the twenty
Quiz +Presence	theore tical	Short notes of class Annelida Hirudo medicinalis in human morphology and laboratory. Diagnosis. And from metazoan Class Arthropoda 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	Unders tands request er the topic	2 Theore tical	VIII And the twenty
		Review	review For the materi al Previo us		Ninth And the twenty
		Examination (one second) And final examination			thirty

Subject
Mycology and Virology
Code
year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-person
Number of study hours (total)/number of units (total)
Name of the course administrator (if more than one name is mentioned)
Name: Lect. Fatima Hamza Sahib Email :
Course objectives

Providing the student with the necessary information to know the types of fungi that cause the infection and ways to prevent it, as well as knowing the types of fungi	

Teaching and learning strategies .1	
- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	**strategy**

Course evaluation .2
distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc
Learning and teaching resources .3

Educational bags	quired textbooks (methodology, if any)
Jawetz medical microbiology	in references (sources)
Practical microbiology	Recommended supporting books and references (scientific journals, reports….)
	ctronic references, Internet sites

Medical Mycology					
Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
Exams Oral And practical	Lectures And Practical	Introduction of medical fungi	to understand the introduction the basic on Fungi	3	1
Exams Oral And practical	Lectures And Practical	Structure, reproduction and classification	Did you get me? Fungi And its installation And knock Its reproduction	3	2
Exams Oral And practical	Lectures And Practical	Cultural characteristics, type of mycosis	to understand Properties And types Mycosis	3	3&4
Exams Oral And practical	Lectures And Practical	General principles in treatments	Identify on basics Methods treatment	3	5
Exams Oral And practical	Lectures And Practical	Actinomyces, Novartis, Myeloma	Identify on Species Fungal	3	6&7
Exams Oral And practical	Lectures And Practical	Dermatophytes	Identify on Its types Her recipes the basic	3	8
Exams Oral And practical	Lectures And Practical	Candidiasis	knowledge Candida Her recipes	3	9
Exams Oral And practical	Lectures And Practical	Cytococcosis	to understand the topic	3	10
Exams Oral And practical	Lectures And Practical	Cryptococcosis	to understand the topic	3	11
Exams Oral And practical	Lectures And Practical	Histoplasmosis, sporotrichosis	to understand the topic	3	12

Exams Oral And practical	Lectures And Practical	Miscellaneous fungi, Aspergillosis, mucor	study What is related? By types mentioned	3	13
Exams Oral And practical	Lectures And Practical	Rhizomes, penicillium	to understand the topic	3	14
Exams Oral And practical	Lectures And Practical	Antifungal agent, antibiotic produced by Fungi	to understand the topic And knowledge pharmaceutical Extracted from Fungi	3	15

Subject
Laboratory Techniques / Quality Control
Code
year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-person
Number of study hours (total)/number of units (total)
180 hours (60 theoretical hours + 120 practical hours)
Principal Investigator
Name: Haider Ali Mohammed Alnaji Email :
Course objectives

1- **At the end of the study stage, the student will have mastered the foundations of laboratory techniques, serums, tests, methods of performing them, and high technology in order to reach the most accurate results. At the end of the study**	

stage, the student will also learn about the parts of the immune system, its function, and how diseases are resisted in the body. The student will be familiar with the operation of laboratory tools and how to deal with laboratory models that come to the serology or serum science laboratory. **2- The student's knowledge of sterilization methods and their importance in staying away from pollutants and diseases** **3-Learning about microbiology and methods for preparing agricultural media, cultivating microorganisms, and destroying them through sterilization.** **3-Knowing the URN test and its importance in diagnosing kidney and body diseases** **4-Learn about the exit test and its importance in detecting digestive system diseases and parasites**	

Teaching and learning strategies .1

- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	**strategy**

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

Immunity and serum book	quired textbooks (methodology, if any)
Basic Immunology: Functions And Disorders Of The Immune System byAbul K. Abbas	in references (sources)

1- Beat auto immune **2- Janeway's** **3-Kuby** **4- Fundamental** **-Pubmed5** **6-Lippincott**	Recommended supporting books and references (scientific journals, reports….)
Pubmed(NCBI data base) **Science direct** **Google schoolar**	ctronic references, Internet sites

Course structureLaboratory techniques and quality control					
Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	the week
Questioning or testing students as needed	a lecture		Introduction to quality control	Two hours theoretical and four hours practical	The first week
Questioning or testing students as needed	a lecture		Medical relief of QA, Standarded units of the international system	Two hours theoretical and four hours practical	the second
Questioning or testing students as needed	a lecture	Exit test	Balancing error detection and false rejection	Two hours theoretical and four hours practical	3-4-5
Questioning or testing students as needed	a lecture	n	Quality control materials	Two hours theoretical and four hours practical	Sixth and seventh

Questioning or testing students as needed	a lecture		QA techniques for quantitative results	Two hours theoretical and four hours practical	VIII
	a lecture		QA techniques for qualitative results	Two hours theoretical and four hours practical	Ninth
.	a lecture		QA techniques for semi-quantitative results	Two hours theoretical and four hours practical	The tenth
Questioning or testing students as needed	a lecture		Troubleshoot based on QA results	Two hours theoretical and four hours practical	eleven
Questioning or testing students as needed	a lecture		review. .	Two hours theoretical and four hours practical	12-13-14-15

name The decision
Slides Preparation
Code
Year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-Person
Number of study hours (total)/number of units (total)
2 theoretical + 3 practical **Total60 theoretical hours and 90 practical hours annually**
Name of the course administrator (if more than one name is mentioned)
Assi. Prof. Dr. Sahira **Aid Abdul Sahib** Email :
Course objectives
Qualifying Students And their numbers for work in area search Scientific and more Their ambition And encourage them To complete Studies Primary And Supreme in area Preparations Microscopic Being from Domains that to attest development scientific marked . to encourage search Scientific and gain Students Skills the basic that Qualifies them for work in Laboratories Preparations Histological.
Teaching and learning strategies .1
- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis

- Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

	quired textbooks (methodology, if any)
book Optical microscopic preparations - theory and application	in references (sources)
Bancroft, J. and Stevens, A. Theory and Practice of Histological Techniques. Churchill Livingstone, London. 2002.	Recommended supporting books and references (scientific journals, reports….)
Multi	ctronic references, Internet sites

structure The decision.10					
Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	identification Terminology Histological	Definition of some terminology that deals with histology, cytology,...etc.	Two hours theoretical +3 hours practical	the first
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	plural Models The snake And samples Post death	Sample collection, biopsy, and autopsy.	Two hours theoretical +3 hours practical	the second
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	steps to prepare Weaving, installation And stabilizers	Steps of preparing tissue for study, fixation, fixatives.	Two hours theoretical +3 hours practical	the third And the fourth
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	Installation Routine And installation private	Routine fixatives and special fixatives.	Two hours theoretical +3 hours practical	Fifth And the sixth
Exams And	a lecture theory	Solutions And time Washing	Washing, solution, time.	Two hours	Seventh

short, And Quarterly, And the final	using program powerpoint			theoretical +3 hours practical	
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	Drying And stabilizers	Dehydration, dehydrants.	Two hours theoretical +3 hours practical	VIII
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	Entertainment And types Al-Murrawaqat	Clearing, clearing agents	Two hours theoretical +3 hours practical	Ninth
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	Saturation, types Wax	Infiltration, types of waxes.	Two hours theoretical +3 hours practical	The tenth
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	Casting And pruning	blocking and trimming.	Two hours theoretical +3 hours practical	atheistic ten
Exams And short, And Quarterly, And the final	a lecture theory using program powerpoint	device Cutting, cutting	Microtomes, Sectioning.	Two hours theoretical +3 hours practical	the second ten
Exams And short,	a lecture theory using		Review	Two hours theoreti	the third ten

And Quarterly, And the final	program powerpoint			cal +3 hours practical	And the fourth ten
			Final exam		Fifth ten

Subject	
Laboratory Instrument	
Code	
Year	
2023/2024	
date Preparation this the description	
2/18/2024	
Available attendance forms	
In-Person	
Number of study hours (total)/number of units (total)	
60 hours (30 theoretical hours + 30 practical hours)	
Name of the course administrator (if more than one name is mentioned)	
the name : Email :	
Course objectives	
1-Empowerment the students from to understand Tools Medical Main.	

2-Empowerment the students from to set any Importance For this Tools using Experiments Analytical Laboratory	

Teaching and learning strategies .1

- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	**strategy**

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

Pathological analysis book	quired textbooks (methodology, if any)
Book Introduction to Medical Laboratory Technology By FJ Baker and RE Silverton Butter worths. 2. Binding practical Practical Medical Technology By MDA 1986	in references (sources)
Ashour Al Nuaimi Pathological analyses Al-Wajeez in Pathological Analysis.	Recommended supporting books and references (scientific journals, reports….)
Pubmed(NCBI data base) Science direct Google schoolar	ctronic references, Internet sites

Course structure					
Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	the week
Questioning or testing students as needed	a lecture	Definition of the microscope, its types, parts, and operating principle	**MICROSCOPES** Uses, main parts, principles of work, types, types of condensers, operation, cleaning, service and maintenance.	Two hours of theory and two hours of practical	the first
Questioning or testing students as needed	a lecture	Definition of the scale, its types, parts, and its working principle	**BALANCES** Uses, types of balances, main part, principle of operation, operation, service and maintenance.	Two hours of theory and two hours of practical	the second
Questioning or testing students as needed	a lecture	Definition of the spectrophotometer, its types, parts, and operating principle	**PHOTOMETRY** Introduction, Light and wave length, Beer lamberts Law, types of photometers, main parts, filters, prisms and diffraction gratings, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	the third
Questioning or testing students as needed	a lecture	Definition of the flame spectrometer, its types, parts, and operating principle	**FLAME PHOTOMETRY** Introduction, Uses, main parts, types, atomizers, principles of operation, operation and maintenance.	Two hours of theory and two hours of practical	the fourth

Questioning or testing students as needed	a lecture	Definition of the atomic spectrometer, its types, parts, and operating principle	**ATOMIC ABSORPTION SPECTROPHOTOMETERY** Introduction, uses, types, main parts, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	Fifth
Questioning or testing students as needed	a lecture	Definition of the centrifuge, its types, parts, and operating principle	**CENTRIFUGES** Uses, types, main parts, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	VI
Questioning or testing students as needed	a lecture	Definition of the sterilization device, its types, parts, and working principle	**AUTOCLAVES** Introduction, uses, types, main parts, principle of operation, sterilization, operation and maintenance	Two hours of theory and two hours of practical	Seventh
Questioning or testing students as needed	a lecture	Definition of the acidity measuring device, its types, parts, and operating principle	**PH METERS** Uses, types, main parts, electrodes, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	VIII
Questioning or testing students as needed	a lecture	Definition of the slide cutter, its types, parts, and its working principle	**MICROTOMS** Uses, types, main parts, sharpeners, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	Ninth

Questioning or testing students as needed	a lecture	Definition of the electrical relay device, its types, parts, and operating principle	**ELECTROPHORESIS** Uses, types, main parts, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	The tenth
Questioning or testing students as needed	a lecture	Definition of the water bath and oven, the types of each of them, their parts, and their working principle	**HEATING INSTRUMENTS (WATER BATHS, OVEN & INCUBATION)** Uses, types, main parts thermostats, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	eleventh
Questioning or testing students as needed	a lecture	Distillation device, its types, parts, and method of operation	**WATER PURIFICATION (DISTILLATORS & DEAIONIZERS)** Distillator, deionizers, uses, main parts, operation and maintenance.	Two hours of theory and two hours of practical	twelveth
Questioning or testing students as needed	a lecture	The self-analysis device, its types, uses, and working principle	**AUTOANALYZERS** Introduction, uses, types, main parts, principle of operation, operation and maintenance.	Two hours of theory and two hours of practical	Thirteenth
Questioning or testing students as needed	a lecture	A review of all the past	**Review**	Two hours of theory and two hours of practical	fourteenth
Written exam	final exam	An examinat	**Final exam**	Two hours of theory and two	Fifteenth

		ion of all previous lectures		hours of practical	

Subject
Histology
Code The decision
the chapter / the year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
My presence
Number of study hours (total)/number of units (total)
60 hours (30 theoretical hours + 30 practical hours)
Name of the course administrator (if more than one name is mentioned)
Noor Ibrahim Email :

Course objectives	
Qualifying Students To find out science Tissue And examinations Histological All'- solution the problems Medical And scientific that Belonging to area Tissue Pathogenicity' Aim to to Graduating Angels Technique able on the job in Laboratories Medical Governmental And eligibility	

Teaching and learning strategies .1	
- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	**e strategy**

Course evaluation .2	
distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc	
Learning and teaching resources .3	
Basic histology **Atlas and text of histology**	quired textbooks (methodology, if any)
TEXT book of HISTOLOGY **Atlas of histology**	in references (sources)
Practical histology **Junqueiras basic histology**	Recommended supporting books and references (scientific journals, reports….)
locationHISTOLOGY GUIDE **HISTOLOGY WORLD**	ctronic references, Internet sites

structure The decision.10					
road Evaluation	road education	name Unit /or the topic	Outputs Learning required	hours	the week
Quiz +Presence	theoretical	Shape of cell		2 Theoretical	the first
Quiz +Presence	theoretical	Epithelial tissue – simple epithelium. T.		2 Theoretical	the second
Quiz +Presence	theoretical	Epithelial tissue- Stratified epithelium. T.		2 Theoretical	the third
Quiz +Presence	theoretical	Connective tissue – Loose co. t.		2 Theoretical	the fourth
Quiz +Presence	theoretical	Connective tissue-dense co. t.		2 Theoretical	Fifth
Quiz +Presence	theoretical	Connective tissue -the blood		2 Theoretical	VI
Quiz +Presence	theoretical	Connective tissue -compact bone		2 Theoretical	Seventh
Quiz +Presence	theoretical	External feature of digestive system		2 Theoretical	VIII
Quiz +Presence	theoretical	Urogenital system of male &female		2 Theoretical	Ninth
Quiz +Presence	theoretical	Live		2 Theoretical	The tenth
		Spleen		2 Theoretical	atheistic ten
Quiz +Presence	theoretical	Lymph node		2 Theoretical	the second ten

Quiz +Presence	theoretical	Circulatory system (Artery)		2 Theoretical	the third ten
	theoretical	Circulatory system (vein)		2 Theoretical	the fourth ten
	theoretical	Final exam		2 Theoretical	Fifth ten

Subject
Molecular biology
Code
Year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-Person
Number of study hours (total)/number of units (total)
(60) hours
Name of the course administrator (if more than one name is mentioned)
Taif Razaq Majed Email :
Course objectives

Training the student in the necessary skills to deal with biological models used in analysis. Providing the student with theoretical information and practical lessons in various specializations related to his profession. Training the student to use the techniques used in medical laboratories.	

Teaching and learning strategies .1	
- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems	**strategy**

-Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

Text book of Molecular Biology	quired textbooks (methodology, if any)
Sources for each subject **Study Book and assist book**	in references (sources)
Scientific journals in the field **Lippincott Illustrated Reviews: Cell and Molecular Biology**	Recommended supporting books and references (scientific journals, reports….)
Internet	ctronic references, Internet sites

Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
Quiz +Presence	theoretical	Introduction to molecular biology		2 Theoretical	the first
Quiz +Presence	theoretical	Cell cycle		2 Theoretical	the second
Quiz +Presence	theoretical	DNA and RNA structure		2 Theoretical	the third
Quiz +Presence	theoretical	DNA replication		2 Theoretical	the fourth
Quiz +Presence	theoretical	DNA transcription		2 Theoretical	Fifth
Quiz +Presence	theoretical	Translation and protein synthesis		2 Theoretical	VI And Seventh
Quiz +Presence	theoretical	Gene expression and regulation		2 Theoretical	VIII
Quiz +Presence	theoretical	Inhibitors of translation and transcription		2 Theoretical	Ninth And The tenth
Quiz +Presence	theoretical	DNA repair system		2 Theoretical	atheistic ten
Quiz +Presence	theoretical	Mutation and chromosomal aberrations		2 Theoretical	the second ten
Quiz +Presence	theoretical	Chemical and physical agents that cause mutation		2 Theoretical	the third ten
Quiz +Presence	theoretical	Recombinant DNA technology (cDNA technique)		2 Theoretical	the fourth ten

Quiz +Presence	theoretical	Cloning and application (briefly)		2 Theoretical	Fifth ter

Subject
Biochemistry
Code
year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-Person
Number of study hours (total)/number of units (total)
30 hours theoretical +60 hours =90 hours
Name of the course administrator (if more than one name is mentioned)
Assi. Prof. Dr. Mahmoud Muhya Fahad Email :
Course objectives

At the end of the second semester, the student will have benefited from the biochemistry subject in knowing the structure of the cell and the basic biochemical components, knowing their types, distinguishing between compounds, and calculating energy. The student benefited from qualitative and quantitative diagnosis methods for carbohydrates, amino acids, enzymes, and the mechanism of detecting them using reagents. He benefited from biochemistry in knowing the tools, chemical	

devices, and reagents available in the laboratory.	

Teaching and learning strategies .1

- the explanation And clarification on road Lectures - road an offer Materials Scientific With devices the offer Data what And a screen the offer . - education Self on road Preparation Reports in Laboratories Cases Pathogenesis - Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems -Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals -Visit of practical laboratories by academic staff	**strategy**

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

Lippincotts biochemistry	quired textbooks (methodology, if any)
*-Jacob Anthikad, Nutrition and Biochemistry for Nurses, 1st Ed., 2009. Reference Books 1- Jaroslav Racek and Daniel Rajdl, Clinical Biochemistry, first ed, 2016 2- Herbert Fromm and Mark Hargrove, Essentials of Biochemistry, 2012 3- Vijay Kumar Kiran Dip Gill, Basic Concepts in Clinical Biochemistry: A Practical Guide, 2018 4- Uma Bhardwaj & Ravindra Bhardwa, Biochemistry for Nurses, 2012 5-DM Vasudevan, Sreekumari S & Kannan Vaidyanathan,Textbook of Biochemistry for Medical Students,2013	in references (sources)

Scientific journals, periodicals and research in the field	Recommended supporting books and references (scientific journals, reports….)
Science direct Google scholar	ctronic references, Internet sites

Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
a test after lecture	a lecture	introduction on Chemistry life And components cell	Biochemistry Biochemistry compounds, cell.		the first
Questions quiz. quiz	a lecture	Species Carbohydrates And its classification	Carbohydrates, classification, its presence, its importance, General properties of monosaccharide's.		the second
	a lecture	Importance Sugars Unilateralism And dualism And multiple And mechanisms To reduce it in inside Human	Important monosaccharide's. Derivatives of monosaccharide's, reducing sugars. Its presence in human body, its reactions Disaccharides and polysaccharides properties, reactions occurrence		the third

	a lecture	Fats And its classificatio n And its characterist ics	Lipids, classification, properties. Fatty acids, properties, reactions		the fourt h
Questions quiz. quiz	a lecture	Acids The fat the basic	Essential fatty acids and essential fatty acids. properties, reactions. Unsaturated fatty acids, properties its importance,		Fifth
	a lecture	Fats Derived And cholesterol	Compound lipids, derived lipids cholesterol, its existence		VI
	a lecture	Proteins And acids The honest one	Proteins, general properties, peptide bond. Amino acids, properties, occurrence.		Sever th
Questions quiz. quiz	a lecture	classificatio n Acids The honest one And proteins	Amino acid, classification, reactions. Classification of proteins, chemical properties of proteins		VIII
	a lecture	Methods Season Vehicles by Chromatogr aphy	Separation of organic compounds by chromatography.		Ninth
	a lecture	Season Acids The honest one	Separation of amino acids. Examination		The tenth
Questions quiz. quiz	a lecture	Sour Al-Nawawi	Nucleic acids, nucleoprotein, analysis of nucleoprotein.		athei stic ten
	a lecture	Enzymes	Enzymes, nomenclature, classification. Enzymes, properties, factors in fleeing the rate of enzymatic reactions. Enzyme,inhibitions.		the secon d ten
Questions quiz. quiz	a lecture	Hormones And its classificatio	Hormones, properties. Classification of hormones. Protein hormones, non protein hormones		the third ten

		n And the difference on Enzymes			
		Vitamins	Vitamins, water soluble vitamins, classification, occurrence, deficiency.		the fourth ten
		Vitamina Lupus in water And melted in Fats	Fat soluble vitamins, classification, occurrence, complete deficiency of vitamins.		Fifth ten

Subject
Chemistry Analytical

Code
the chapter / the year
2023/2024
date Preparation this the description
2/18/2024
Available attendance forms
In-Person
Number of study hours (total)/number of units (total)
30 hours theoretical +60 hours =90 hours
Name of the course administrator (if more than one name is mentioned)
the name : Email :
Course objectives

At the end of the first semester, the student will have benefited from the analytical chemistry course in knowing the atom and its components, knowing matter and its types, and the law of conservation of matter and energy. The student benefited from qualitative diagnostic methods, delamination methods, measuring weight, pH level, types of sediments, and preparing solutions. He benefited from analytical chemistry in knowing the chemical tools and equipment available in the laboratory.	

Teaching and learning strategies .1	
- the explanation And clarification on road Lectures **- road an offer Materials Scientific With devices the offer Data what And a screen the offer .** **- education Self on road Preparation Reports in Laboratories Cases Pathogenesis**	**strategy**

- Providing students with the basics and additional topics related to the previous learning outcomes of skills, to solve practical problems **-Applying the topics studied theoretically at the practical level in various laboratories affiliated with teaching hospitals** **- Visiting practical laboratories by academic staff**	

Course evaluation .2

distribution Class from 100 on according to mission Assigned With it requester like Preparation Daily And exams Daily And oral And monthly And editorial And reports ....etc

Learning and teaching resources .3

Analytical chemistry book	quired textbooks (methodology, if any)
Skoog analytical chemistry **Gary analytical chemistry**	in references (sources)
Analytical chemistry journal **Analytical Methods**	Recommended supporting books and references (scientific journals, reports….)
Science direct **Google scholar**	ctronic references, Internet sites

Evaluation	education	name Unit /or the topic	Outputs Learning required	hours	the week
a test after lecture	a lecture	introduction on Chemistry Analytical	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.		the first
Questions quiz. quiz	a lecture	Species The bonds – Methods Analysis Qualitative And quantitative	Chemical bonds, covalent, ionic, coordination, hydrogen. Methods of analysis. qualitative and quantitative, statistical Methods of quantitative analysis, errors in quantitative analysis		the second
	a lecture	Methods Expression on the focus – Solutions	Methods of expressing concentration of solution, Molar solution ,normal solution Preparation of molar solution, dilution, questions		the third
	a lecture	Balance Chemist	Percentage composition, part per million. Chemical equilibrium, ionization, constant of water (PH and POH).		the fourth

Questions quiz. quiz	a lecture	ionize Electrolyte The weak	Ionization of weak electrolyte. Calculation of PH of weak acids and weak bases. Buffer solutions, classification		Fifth
	a lecture	Solutions Pvr	Calculation of buffer solutions Uses of buffer solutions.		VI
	a lecture	classification Analysis Volumetric	Volumetric analysis, classification, standard solution, examples Neutralization reactions.		Seventh
Questions quiz. quiz	a lecture	Interactions Oxidative stress And shorthand	Oxidation and reduction reactions. examples Precipitation reactions.		VIII
	a lecture	Guide – His theory – Properties - Interactions	Theory of indicators, reaction, properties, examples , reaction , properties , examples. Types of indicators		Ninth
	a lecture	principle Chromaticity	Principles of colorimetry.		The tenth
Questions quiz. quiz	a lecture	Law Bert Lambert	Beer-lambert law.		atheistic ten
	a lecture	Solutions standard	Standard solution/calibration curve.		the second ten
Questions quiz. quiz	a lecture	Devices Measurements Chromaticity	Instruments of colorimetry.		the third ten
	Exam		Examination		the fourth ten
	Exam		Examination		Fifth ten