Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.

Academic Program Specification

Form for The Academic

University: Thi-Qar
College: science
Number of Departments In the college: 5 Departments
Pathological analyses
Date of form Completion :14\4\2024

Assitant prof. Dr. Haethim A. Minas	**Prof. Dr. Sabah H. Anaya**	**Assist.Lec. Nibras .M . Ali**
Dean 's Name	*Dean 's Assistant for ScientificAffairs*	*The College Quality Assurance and University Performance Manager*
Date: / /	*Date: / /*	*Date: / /*
Signature	*Signature*	*Signature*

Assitant .prof.Dr. Ali Badr Romi
Quality Assurance and University PerformanceManager
Date: / /
Signature

TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Program Specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each coursethat contributes to theprogram.

1. Teaching Institution	University of ThiQar
2. University Department/Centre	College of science \University of ThiQar
3. Program Title	Pathological Analyses program
4. Title of Final Award	Bachelor's degree Pathological Analytics
5. Modes of Attendance offered	Attendance + online classrome
6. Accreditation	Ac Accreditation Board For Engineering And Technology (ABET)
7. Other external influences	The department's outputs are consistent with the actual need of health institutions and the extent to which the latter understands the need of society
8. Date of production/revision	**14\4 \2024**
9. Aims of the Program	
1. Provide solid scientific outputs capable of meeting the need of the labor market. . Improving the academic performance of the department, as well as changing the program's trends towards the use of modern electronic technologies in education	

2. Preparing a staff specialized in pathological analysis with the ability to keep up with the development in this field.

3. Seeking to open a doctoral study in the department in order to provide advanced staff in the specialty of pathological analysis.

4. Participating with scientific and health institutions in solving the health problems facing society.

10. Learning Outcomes, Teaching, Learning and Assessment Methods

A. Cognitivegoals

A- Knowledge and understanding

A1- Providing a mentality familiar with various disciplines of pathological analysis that helps graduates integrate into the labour market.

A2- Understanding information and topics in a way that allows the graduate to use his or her specialty in a thorough manner.

A3- Building a distinct level of knowledge with which the graduate can expand his or her understanding in his field of specialization.

A4- Pure science helps graduates research and develop themselves through reading and conclusion.

A5- Organize information and keep important ones in his memory for functional use in the labour market.

A6- The practical part gives experience to the graduate to help him compete positively with his peers when entering the labor market.

B. The skills goals special to the program. B1-Conduct practical scientific experiments in the laboratory. B2- Logical thinking about scientific problems in his field of specialization and trying to find solutions to them. B3- Integrating into the academic research process by providing scientific conclusions and recommendations when discussing scientific research.
Teaching and Learning Methods
1. Education in this program includes theoretical education, which focuses on the study of scientific problems in a purely scientific manner aimed at understanding the basis of the problem and seeking solutions to it, and practical education that gives practical experience in conducting experiments and research through the use of methods adopted in conducting scientific research. 2. Learning in both theoretical and practical aspects depends on the cooperation between the student and the professor to understand the lesson as much as possible and overcome the obstacles facing the student's understanding or hindering the conduct of his experiments in the laboratory. 3. Urge students to use books and scientific articles, whether office or electronic, because they help a lot electronic, because they help a lot to retain information and allow for discussion and conclusions. 4. Make electronic examinations for students through the department's website.
Assessment methods
1. Prepare the self-assessment report. 2. Daily examinations, monthly and final theoretical and practical examinations, intra-classroom discussion, graduation research 3. Preparing a questionnaire to evaluate teachers from the perspective of students.

C.Thinking skills

C1-Logical scientific thinking based on the information and topics he has learned in his field of specialization.

C2. Move towards an understanding approach and move away from the preservation of useless information in the future.

C3- Creating a state of affection and assistance among students through their participation in the discussion of the lesson

D- General and transferred skills (other skills related to employability and personal development).

D1-The skill of logical and scientific discussion within the classroom.

D2- The skill of researching and fortifying the idea of self-confidence in scientific forums and conferences.

D3- The skill of performing practical experiments in the laboratory and trying to make some adjustments in the experiment according to correct scientific contexts and try to learn from the mistakes that occur during this.

11. Program Structure

Level/Year	Course or Module Code	Course or Module Title	Credit rating
Second	**201**	**Parasitology**	**2 h theoretical** **2 h practical**
Third	**301**	**Immunology**	**1 h theoretical** **2 h practical**
Fourth	**401**	**Antibiotic**	**2 h theoretical** **2 h practical**

12. Awards and Credits

3 units with 30 theoretical hours(some of subject units 30n h) and 30 hours of quarterly process to obtain a bachelor's degree for the first, second and third

13. Personal Development Planning

1. Holding regular meetings of the department to discuss matters related to the teaching process and others

2. The department works on the periodic scientific intellectual review of the department, and works to fill the vacancies in it.

3. Encouraging teachers to participate in conferences outside and within the country.

4. Urge and encourage the members of the department to participate in the training courses.

5. Graduate and primary student questionnaire to show them the teachers

14. Admission criteria .

1. Adoption of the central admission system based by the Ministry of Higher Education and Scientific Research.
2. Adoption the score average of high school \ scientific branchin addition to physical and mental safety.
3. The student's desire

15. Key sources of information about the program

1. Methodological books available in the department library and scientific college in addition to the central library at the university.

2. Scientific articles in periodicals or electronic journals.

3. Various websites dealing with the field of pathological analysis.

Curriculum Skills Map

please tick in the relevant boxes where individual Programme Learning Outcomes are being assessed

Programme Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A1	**A2**	**A 3**	**A4**	**B1**	**B 2**	**B3**	**B4**	**C1**	**C 2**	**C 3**	**C 4**	**D 1**	**D 2**	**D 3**	**D 4**
First Second	No number	Parasitology	Essential			⧗				⧗				⧗				⧗	
	No number	Human physiology	Essential			⧗				⧗				⧗				⧗	
	No number	Histology and histo-techniqu	Essential			⧗				⧗				⧗				⧗	
	No number	Pathological analysis	Essential			⧗				⧗				⧗				⧗	
Third	No number	Immunity	Essential			⧗				⧗				⧗				⧗	
	No number	Virology	Essential			⧗				⧗				⧗				⧗	
	No number	Pathogenic bacteria	Essential			⧗				⧗				⧗				⧗	
	No number	Ecology &Pollution	Non-Essential			⧗				⧗				⧗				⧗	
Fourth	No number	Biotechnology	Essential			⧗				⧗				⧗				⧗	
	No number	Microbial diagnosis	Essential			⧗				⧗				⧗				⧗	
	No number	Blood	Essential			⧗				⧗				⧗				⧗	
	No number	Antibiotic	Essential			⧗				⧗				⧗				⧗	

TEMPLATE FOR COURSE SPECIFICATION

Course Description Form

1. Course Name: Parasitology (Protozoa Helminthology)

2. Course Code:

3. Semester / Year: second, 2023 / 2024

4. Description Preparation Date: 30/3/2024

5. Available Attendance Forms: classroom and laboratory

6. Number of Credit Hours (Total) / Number of Units (Total)
   4 hours / 3 units

7. Course administrator's name (mention all, if more than one name)
   Name: ALYA ABED ALHUSSEIN HAFEDH , .Fatimah H.Al-Ataby
   Email: alyaa_pa@sci.utq.edu.iq

8. Course Objectives

Course Objectives	**Knowledge of types parasitic diseases and Coarse of disease ..... Methods of Diagnosis of disease**

9. Teaching and Learning Strategies

Strategy	1- Theoretical education: Theoretical education is important to know the types of parasites that infect humans, and to know the methods of entry or methods of spread of these parasites, the pathogenicity of the parasite, and the risks caused by the disease if it is not diagnosed correctly. 2- Practical education: Teaching students the basic and available methods for diagnosing parasites and how to write a report on diagnosed disease cases. 3- Theoretical and scientific learning depends on cooperation between the professor and the student to assimilate the lessons to the greatest extent a to overcome obstacles or hinder conducting experiments in the laboratory 4- Urging the student to use scientific books and articles, whether desktop virtual. 5- Daily, monthly, and end-of-semester exams for the theoretical and practi aspects.

10. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2	Introduction of helminthology	Introduction of helmintholog	Giving lecture. discussion	Daily tests Direct question
Week 2	2	Classification and intriductio	Introduction of trematoda	Giving lecture. discussion	Daily tests Direct question
Week 3	2	Knowledge the site fo this genus and mod o transmition	F.hepatica . F.buski	Giving lecture. discussion	Daily tests Direct question
Week 4	2	Knowledge importan symptoms of this gen	P.westermani	Giving lecture. discussion	Daily tests Direct question
Week 5	2	Classification this ge depended of site of infection	SHISTOSOMA SPP	Giving lecture. discussion	Daily tests Direct question
Week 6	2	General charactraise this class	INTRODUCTON OF CESTODA	Giving lecture. discussion	Daily tests Direct question
Week 7	2	Diagnosis . site of infection and how ca collection this sample	TAENIA SPP	Giving lecture. discussion	Daily tests Direct question
Week 8	2		EXAM	Giving lecture. discussion	Daily tests Direct question
Week 9	2	Knowledge the intermidate host of th worm	P.westermani	Giving lecture. discussion	Daily tests Direct question
Week 10	2	Knowledge the intermidate host of th worm	DIPHYLOBOTHRIUM LATUM. H.NANA	Giving lecture. discussion	Daily tests Direct question
Week 11	2	Diagnosis . site of infection and how ca collection this sample	ECHINOCOCCUS SPP	Giving lecture. discussion	Daily tests Direct question
Week 12	2	General charactraise this class	INTRODUCTION OF NEMATODA	Giving lecture. discussion	Daily tests Direct question
Week 13	2	Knowledge importan symptoms of this gen	ENTEROBIUS VERMICULARIS	Giving lecture. discussion	Daily tests Direct question Daily tests Direct question
Week 14	2	Knowledge the site fo this genus and mod o transmition	ASCARIS LUMBRICOIDE	Giving lecture. discussion	Daily tests Direct question
Week 15			Exam		

Week 1	2	Introduction of protozoa	Introduction of protozoa	Giving lecture. discussion	Daily tests Direct question
Week 2	2	Classification and intriductio	Introduction of protozoa	Giving lecture. discussion	Daily tests Direct question
Week 3	2	Knowledge the site for this genus and mod of	Amoebae	Giving lecture. discussion	Daily tests Direct question

		transmition			
Week 4	2	Knowledge important symptoms of this genu	E.gingivalis	Giving lecture. discussion	Daily tests Direct question
Week 5	2	Classification this genu depended of site of infection	Artial amoebae	Giving lecture. discussion	Daily tests Direct question
Week 6	2	General charactraise o this class	*E.histolotica*	Giving lecture. discussion	Daily tests Direct question
Week 7	2	Diagnosis . site of infection and how cane collection this sample	*E.coli*	Giving lecture. discussion	Daily tests Direct question
Week 8	2		EXAM	Giving lecture. discussion	Daily tests Direct question
Week 9	2	Knowledge the intermidate host of thi worm	*E. nana*	Giving lecture. discussion	Daily tests Direct question
Week 10	2	Knowledge the intermidate host of thi worm	*Tricomonas hominis*	Giving lecture. discussion	Daily tests Direct question
Week 11	2	Diagnosis . site of infection and how cane collection this sample	*Giardia lamblia*	Giving lecture. discussion	Daily tests Direct question
Week 12	*2*	*General charactraise o this class*	*Leishmania spp*	Giving lecture. discussion	Daily tests Direct question
Week 13	2	Knowledge important symptoms of this genu	*T.Cruzi*	Giving lecture. discussion	Daily tests Direct question Da tests Direct question
Week 14	2	Knowledge the site for this genus and mod of transmition	*Toxoplasma gondii*	Giving lecture. discussion	Daily tests Direct question
Week 15			Exam		

Course Structure (Laboratory)

Week 1	2	Diagnosis method b blood film	Thick and Thin smear	Practical test with staining	Daily tests Direct question
Week 2	2	Diagnosis parasite	Helminthology: trematod	Examination of slides und microscope with draw	Daily tests Direct question
Week 3	2	Diagnosis shape of liver and intestinal fluke	*F.hepatica* *F.buski*	Examination of slides und microscope with draw	Daily tests Direct question

Week 4	2	Diagnosis shape of lung al fluke	*P.westermani*	Examination of slides und microscope with draw	Daily tests Direct question
Week 5	2	Diagnosis of Shistosoma Spp and show the shape of e and adult	Shistosoma Spp	Examination of slides und microscope with draw	Daily tests Direct question
Week 6	2	Diagnosis and ment type of sample	Cestoda: Taenia Spp	Examination of slides und microscope with draw	Daily tests Direct question
Week 7	2		EXAM		
Week 8	2	Diagnosis and ment type of sample and show the egg and ac	*Diphylobothrium Latum H.Nana*	Examination of slides und microscope with draw	Daily tests Direct question
Week 9	2	Diagnosis and ment type of sample and show the egg and ac	*Echinococcus Spp*	Examination of slides und microscope with draw	Daily tests Direct question
Week 10	2	Diagnosis and ment type of sample and show the egg and ac	Nematoda	Examination of slides und microscope with draw	Daily tests Direct question
Week 11	2	Diagnosis and ment type of sample and show the egg and ac	*Enterobius Vermicularis*	Examination of slides und microscope with draw	Daily tests Direct question
Week 12	2	Diagnosis and ment type of sample and show the egg and ac	*Ascaris Lumbricoides*	Examination of slides und microscope with draw	Daily tests Direct question
Week 13	2		EXAM		
Week 14	2	Practical analysis ar mention type of parasites	Urine examination	Practical test	Daily tests Direct question
Week 15	2	Diagnosis and ment type of sample and show the egg and ac under microscope	Ancylostoma	Examination of slides und microscope with draw	Daily tests Direct question

11. Course Evaluation

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	-PANIKERS TEXTBOOK OF MEDIC PARASITOLOGY
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Histological technique and tissue culture

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 2/4/2024

5. Available Attendance Forms: Class room & Lab.

6. Number of Credit Hours (Total) / Number of Units (Total) 30 / 4

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

Name: Prof. Dr. Hayfaa A. Al shamar
Email: hayfaa_pa@sci.utq.edu.iq
Assist. Lec. Hanan Burhan

8. Course Objectives

Course Objectives	• **Histology technique prepatation** • **Overview on tissue culture**

9. Teaching and Learning Strategies

Strategy	Theoretical and practical experiencing focusing in the importance of of tiss technique in investigation the histopathology of tissue and hmake studer involving in this field and have experience how in the theory aspect also practi side .

10. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
We 1	2	Introduction To histotechnique	Introduction on histology technique history	Power point show	Quiz
We 2	2	Pathology laboratory management	Overview on the dealing with histopathology laboratory and the role of management it	Power point show	Quiz
We 3	2	Fixation of tissues	Overview on the fixation , purpose and the type of fixati agents	Power point show	Quiz
We 4	2	Dehydration of tissue an the chemical agent uses	Overview on the dehydration purpose and the type of	Power point show	Quiz

			dehydration agents		
We 5	2	Clearing of tissue and tl chemical agents	Overview on the clearing , purpose and the type of cleari agents	Power point show	Quiz
We 6	2	Microtomy for paraffin and frozen sections	Introduction on the mecrotom of paraffin and frozen section , purpose , differentiation between them	Power point show	Quiz
We 7	2	Exam		Power point show	
We 8	2	Theory of histological staining	Why we do staining the tissue What is the theories of stainir types of histological stains , special stains	Power point show	Quiz
We 9	2	Connective and other mesenchymal tissues with their stains	Focus on the connective stain and what are the purpose of it	Power point show	Quiz
We 10	2	Traditional stains and modern techniques for demonstrating microorganisms in histology	introduction on stains use for detection the microorganism	Power point show	Quiz
We 11	2	Tissue culture , historica background , applicatior advantage of tissue cultu and limtitation	Focus on the tissue culture fie	Power point show	Quiz
We 12	2	Type of tissue culture	What are the tissue culture ty	Power point show	Quiz
We 13	2	The culture environmen	An introduction	Power point show	Quiz
We 14	2	Subculture and cell lines	An introduction	Power point show	Quiz
We 15	2	Final exam		Power point show	

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First	1theorical 2 practical	Identifying the cell and its components	The cell	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Second	1theorical 2 practical	Identify, classify and characteristics of epithelial tissues	The Epithial tissue	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Third	1theorical 2 practical	Identifying and classifying glands and their	The glans	Explain all the lecture and give its relation with other science ,	Face to face discussion

		types		addition to the brain storming	
Fourth	1theorical 2 practical	dentify and classify connective tissues	The connective tissues	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Fifth	1theorical 2 practical	Identification of the skeletal system, Bone	The bone	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Sixth	1theorical 2 practical	Identification of the structural system, 2. CartligeIdentify the types of cartilage and its tissue composition and types	The Cartilage	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Seventh					Exam
Eighth	1theorical 2 practical	Identify the types of the muscular system and the types of muscles , specially the skeletal system	The muscular system skeletal muscles and sarcomere	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Nineth	1theorical 2 practical	Identify the types of smooth musles and cardiac muscles and the diffences between all muscles types	The smooth muscles and cardiac muscles	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Tenth	1theorical 2 practical	Identify the composition of blood and the types of blood cells ant it functions	The blood	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Eleventh	1theorical 2 practical	Explain what is the lymph fluid and what are its component .	The lymph and lymph fluid	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Twelfth	1theorical 2 practical	Explain the histology structure of the parts of digestive system and accessory glands	The digestive system	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion
Thirteenth	1theorical 2 practical	Identify the histology structure	Liver and pancreas	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion in the lab.
Fourteenth	1theorical 2 practical	Explain with practice all the methods of	Fixation , dehydration and clearing	Explain all the lecture and give its relation with other science ,	Face to face discussion in the lab .

		fixation and dehydration , all chemical agents involve in it also how we can achieve it		addition to the brain storming		
Fifthenth	1theorical 2 practical	Explain with practice how can we achieve this steps and what are them chemical agents	Impregnation, embedding , sectioning and staining .	Explain all the lecture and give its relation with other science , addition to the brain storming	Face to face discussion in the lab .	

Practical part

Week	Fixation of tissue	Preparing the tissue for fixation , focusing on the orientation tissue	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Dehydratio step	Preparing the dehydration solutions and how we make tissue dehydration		Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Clearing st	Prepare tissue for clearing , focus on the differnation between the different clearing agents	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Infiltration step	Prepar the tissue for infiltration in the the paraffin wax	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Blocking tissues	Focus on the different between tissues block , how can make the tissues block	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Tissue sectioning	Practical tissue sectioning	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Exam			
Week	Tissue sectioning	Practical tissue sectioning	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Staining 1	Practical tissue staining	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Staining 2	Practical tissues staining	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture

Week	An overview of frozen tissue sectioning	Explaining	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	An overview tissue culture tools	Explaining	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Types of tissue cultu	Explaning	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week	Tissue cult environmer	Explaining	Practical part	Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture
Week		Practical Exam		Suddenly question and make the student , Get the students to engage in dialogue and discuss the topic of the lecture

Course Evaluation

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

Learning and Teaching Resources

Required textbooks (curricular books any)	Bancroft' THEORY AND PRACTICE OF HISTOLOGICAL TECHNIQUESEIGH 8ed, S. Kim Suvarna, Christopher Layton John Bancroft - 2019
Main references (sources)	Bancroft' THEORY AND PRACTICE OF HISTOLOGICAL TECHNIQUESEIGH 8ed, S. Kim Suvarna, Christopher Layton John Bancroft - 2019
Recommended books and references (scientific journals, reports...)	Carleton's histological technique. 5th ed. / by R.A.B. Drury, E.A. Wallington.
Electronic References, Websites	Online tutorial

Course Description Form

1. Course Name: Ecology & pollution

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 28 /3/2024

5. Available Attendance Forms: Lecturer & Lab

6. Number of Credit Hours (Total) / Number of Units (Total) : 4 h / 3 unit

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

Name: Afaq Talib Farhood
Email: :afaq.path78@sci.utq.edu.iq

8.Course Objectives

Course Objectives	General surround on the concepts of ecology and what their relationship to other scien and the definition of the types of environmental pollution and types of pollutants seriousness the pollutants on of the food chain and the most important of its effects humans .

9.Teaching and Learning Strategies

Strategy	1- Education in this program includes theoretical education, which focuses on th study of scientific problems in a purely scientific manner aimed at understanding the basis of the problem and seeking solutions to it, and practical education that gives practical experience in conducting experiments and research through the use of methods adopted in conducting scientific research. 2. Learning in both theoretical and practical aspects depends on the cooperat between the student and the professor to understand the lesson as much possible and overcome the obstacles facing the student's understanding hindering the conduct of his experiments in the laboratory. 3. Urge students to use books and scientific articles, whether office or electronic, because they help a lot to retain information.

10.Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2h	Define the Ecology	Introduction of Ecolo	Lecture, dialog	discussion, daily tests, direct questions
Week 2	2h	Branches of Ecology	Branches of Ecology	Lecture, dialog	discussion, daily

					tests, direct questions
Week 3	2h	Biotic & Abiotic component	Ecosystem	Lecture, dialog	discussion, daily tests, direct questions
Week 4	2h	Principle Processes of Ecosystem	Principle Processes of Ecosystem	Lecture, dialog	discussion, daily tests, direct questions
Week 5	2h	Type of Ecosystem	Type of Ecosystem	Lecture, dialog	discussion, daily tests, direct questions
Week 6	2h	Water , O2, CO2 , N,S,P	Biogeochemical cycle	Lecture, dialog	discussion, daily tests, direct questions
Week 7	2h	Renewable & nonrenewable sources With Example.	Renewable & nonrenewable sources energy , Energy flow in Ecosystem	Lecture, dialog	discussion, daily tests, direct questions
Week 8	2h	Monthly Exam	Monthly Exam	Lecture, dialog	discussion, daily tests, direct questions
Week 9	2h	Type Food chains & Foo web	Food chains & Foo web:	Lecture, dialog	discussion, daily tests, direct questions
Week 10	2h	Type of Food chains & Food web	Ecological pyramid:	Lecture, dialog	discussion, daily tests, direct questions
Week 11	2h	Positive & negative Ecological Relationshi	Ecological Relationships	Lecture, dialog	discussion, daily tests, direct questions
Week 12	2h	The concept of pollutio	Environmental pollution	Lecture, dialog	discussion, daily tests, direct questions
Week 13	2h	Types of pollutants and their dangers	Types of environme pollution	Lecture, dialog	discussion, daily tests, direct questions
Week 14	2h	Degrees of pollution	Degrees of environm pollution& Type o pollutants	Lecture, dialog	discussion, daily tests, direct questions
Week 15	2h	Radiation effect on cells Embryos and germ cells	Radiation pollution a effect on human hea	Lecture, dialog	discussion, daily tests, direct questions

11. Course Structure (Laboratory)

Week 1	2h	Definition of ecology	Definition of Ecology	Lecture, dialog	discussion, daily tests, direct questions
Week 2	2h	Aquatic and terrestria environment	Type of Ecosystem	Lecture, dialog	discussion, daily tests, direct questions
Week 3	2h	Temperatures, Max & Min	Temperature measurem and terminology associated	Lecture, dialog	discussion, daily tests, direct questions
Week 4	2h	Devices and how to measure	Humidity , Pressure Atmospheric , Sunlight	Lecture, dialog	discussion, daily tests, direct questions
Week 5	2h	Devices and methods collecting samples	Methods of sample collection in the aquatic environment	Lecture, dialog	discussion, daily tests, direct questions
Week 6	2h	Measurement of biological factors in th aquatic environment	Measurement some physical chemical properties in the aquatic environment	Lecture, dialog	discussion, daily tests, direct questions
Week 7	2h	Methods of measureme and importance	Measurement method d dissolved oxygen	Lecture, dialog	discussion, daily tests, direct questions
Week 8	2h	Methods of measureme and importance	Biological Oxygen Demand (BOD_5)	Lecture, dialog	discussion, daily tests, direct questions
Week 9	2h	Monthly Exam	Monthly Exam	Lecture, dialog	discussion, daily tests, direct questions
Week 10	2h	Define the LC50 , , LC100, LT50, LT10(	Effect of heavy metals c aquatic living (Fishes)	Lecture, dialog	discussion, daily tests, direct questions
Week 11	2h	Methods	Treatment domestic sewage effluent	Lecture, dialog	discussion, daily tests, direct questions
Week 12	2h	What the Bioindecato	Use microorganism (Bioindecator) in organ pollution	Lecture, dialog	discussion, daily tests, direct questions
Week 13	2h	Soil layers	Soil profile	Lecture, dialog	discussion, daily tests, direct questions
Week 14	2h	The importance of O.M and measurement	Organic matter in soil	Lecture, dialog	discussion, daily tests, direct questions
Week 15	2h	The importance and measurement	Moisture and porosity the soil	Lecture, dialog	discussion, daily tests, direct questions

12. 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

13. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1-Ecology and pollution . Authored prof. Dr. Hussein A.l-Saadi 2002 2-Principle of Ecology . Authored prof. Dr. Bassem Y. al-Khafaji, 2015
Main references (sources)	1-Ecology concept & Application . Authored Maunal .C. Molles , 2015 2- Fundamentals of Ecology . Authored . Eugene Odum, Gary W. Barrett.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1.Course Name: Pathogenic bacteria
1.Course Code:
1.Semester/ Year: 2023- 2024
1.DescriptionPreparationDate: 31/3/2024
1.AvailableAttendanceForms:
1.NumberofCreditHours(Total)/ Number of Units(Total) 4 hours / 3 unit
1.Course administrator's name(mentionall ,if more than one name)
Name: Dr.Amany shakier jaber lecturer sara ghalip Email: Amany_pa@sci.utq.edu.iq
1.CourseObjectives

Course Objectives	Knowing the complete diagnosis of all bacteria through conducting initial, conventional, and confirmatory tests ,the most important of which are bacteria in

	order to know the organism that causes pathologies.

1.Teaching and Learning Strategies

Strategy	Theoretical education: everything that concerns germs that cause diseases, detecting them using all diagnostic methods, studying their diseases, their effect on humans, their complications, and how to get rid of them with treatment. 2. Practical education: Conducting all tests in the laboratory, everything related to bacterial causes and detecting them using diagnostic methods. 3. Theoretical and practical education depends on cooperation between the professor and the student to understand the lecture and reduce the obstacles that hinder conducting tests in the laboratory. 4. Urging the student to use books and articles, whether desktop or virtual. 5. Daily, monthly and end-of-semester exams for the theoretical and practical aspects

1.Course Structure(Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Mycobacterium	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 2	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Clostridium Species	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 3	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Lab Finding	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 4	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Pathogenesis	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 5	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Neisseriaspp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 6	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Laboratory features	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 7	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Gastrointestinal gram negative	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 8	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Salmonella	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 9	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Campylobacter	Giving the lecture Dialogue + discussion	Daily tests direct questions

Week10	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	*Shigella*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week11	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Vibrio	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week12	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	*Helicobacter pylori*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week13	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Lab Diagnosis	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week14	2 hs	Detection of diseases, methods of epidemiological diagnosis and their advantages	Bacillus.sp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week15	2 hs	Final exam	exam	Giving the lecture Dialogue + discussion	Daily tests direct questions
Course Structure (Laboratory)					
Week 1	2 hs	Diagnostic tests	Campylobacter	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 2	2 hs	Diagnostic tests	*Helicobacter pylori*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 3	2 hs	Diagnostic tests	*E.coli*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 4	2 hs	Diagnostic tests	*Proteus mirabilis*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 5	2 hs	Diagnostic tests	Enterobacter.spp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 6	2 hs	Diagnostic tests	Citrobacter.spp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 7	2 hs	Diagnostic tests	Serracia.spp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 8	2 hs	Diagnostic tests	klebsiellaspp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week 9	2 hs	Diagnostic tests	*Salmonella typhi*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week10	2 hs	Diagnostic tests	Pseudomonas.sp	Giving the lecture Dialogue + discussion	Daily tests direct questions

Week11	2 hs	Diagnostic tests	*Shigella*	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week12	2 hs	Diagnostic tests	Clostridium.sp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week13	2 hs	Diagnostic tests	Proteus .sp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week14	2 hs	Diagnostic tests	Bacillus.sp	Giving the lecture Dialogue + discussion	Daily tests direct questions
Week15	2 hs	Diagnostic tests	exam	Giving the lecture Dialogue + discussion	Daily tests direct questions

1.CourseEvaluation

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.LearningandTeachingResources

Required textbooks (curricular books,ifany)	1.Essentials of Medical Microbiology, Rajesh Bhatia and Rattan Lal, Fourth Edition,2008
Main references (sources)	2.Sherris Medical Microbiology , Editors Kenneth J. Ryan, Md C. George Ray, Md , Sixth Editor,2014
Recommended books and references (scientific journals,reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Pathological analysis	
2. Course Code:	
3. Semester / Year:2023 -2024	
4. Description Preparation Date: 28/3/2024	
5.Available Attendance Forms: 1-Lecture inside the classroom 2-The practical part inside the laboratory	
5. Number of Credit Hours (Total) / Number of Units (Total) :6hours / 3units	
6. Course administrator's name (mention all, if more than one name)	
Name: Prof . Dr. Intidhaar Naeem Abid Email: Intidhaar12ih_pa@sci.utq.edu.iq Name:Assist.lec. Hanan Burhan Saadon	
7. Course Objectives	
Course Objectives	. Background information about the general tests that performed on different specimens in medical laboratory . Identify the types of medical samples used in pathological analyzes and the components of these samples .. Identify the most important factors and disturbances that affect the values of the natural components of the sample . Teaching the student how to handle samples and analyze laboratory results ....
8. Teaching and Learning Strategies	
Strategy	Teaching strategies used in the theoretical aspect 1-Lecture or delivery strategies 2-Discussion strategies 3- writing reports 4- Daily exams The strategies for the practical part are as follows 1- Collaborative work strategy 2-writing reports 3-Daily exams In addition to the monthly theoretical and practical exams

9. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2 hr.	Identify the components of urine and how to collect samples	routine urinalysis ,	Lecture + discussion	Daily tests and questions
Week 2	2 hr.	Identify the normal and abnormal characteristics of urine, the most important disorders that affect these characteristics, and how to measure them	macroscopic urinalysis	Lecture + discussion	Daily tests and questions
Week 3	2 hr.	Identify the normal and abnormal characteristics of urine, the most important disorders that affect these characteristics, and how to measure them	macroscopic urinalysis	Lecture + discussion	Daily tests and questions
Week 4	2 hr.	Identify the most important microscopic tests, methods for performing them, and factors affecting the results	microscopic urinalysis	Lecture + discussion	Daily tests and questions
Week 5	2 hr.	Identify the most important tests used to detect kidney function and the factors	tests of renal function	Lecture + discussion	Daily tests and questions

		affecting the results			
Week 6	2 hr.	Identify the most important tests used to detect kidney function and the factors affecting the results	tests of renal function	Lecture + discussion	Daily tests and questions
Week 7	2 hr.	Identify the most important tests used to detect liver diseases and the factors affecting the results	liver function tests	Lecture + discussion	Daily tests and questions
Week 8	2 hr.	Identify the most important tests used to detect liver diseases and the factors affecting the results	Liver function tests	Lecture + discussion	Daily tests and questions
Week 9	2 hr.	Learn about the most important tests used to detect body fat and how to conduct them	Lipid profile	Lecture + discussion	Daily tests and questions
Week 10	2 hr.	Hormone tests, their importance, and factors affecting the results	hormons	Lecture + discussion	Daily tests and questions
Week 11	2 hr.	Hormone tests, their importance, and factors affecting the results	hormons	Lecture + discussion	Daily tests and questions
Week 12	2 hr.	Mechanics of laboratory culture, antibiotic testing,	Culture and sensitivity tests	Lecture + discussion	Daily tests and questions

		and factors affecting the results			
Week 13	2 hr.	Methods of examining semen and factors affecting the results	Semen analysis	Lecture + discussion	Daily tests and questions
Week 14	2 hr.	Methods of examining gastrointestinal secretions and factors affecting the results	Analysis of gastric and duodenal secretions	Lecture + discussion	Daily tests and questions
Week 15	2 hr.	Methods of examining gastrointestinal secretions and factors affecting the results	Analysis of gastric and duodenal secretions	Lecture + discussion	Daily tests and questions
Course Structure (Laboratory)					
Week 1	2 hr.	Learn how to conduct the test and read the results	macroscopic urinalysis (odor ,color, APPEARANCE (CLARITY))	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 2	2 hr.	Learn how to conduct the test and read the results	Glucose , ketones ,nitrite	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 3	2 hr.	Learn how to conduct the test and read the results	Bilirubin and urobilinogen , leukocyte esterase	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 4	2 hr.	Learn how to conduct the test and read the results	Microscopic urinalysis RBC,WBC, epithelial Cells	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 5	2 hr.	Learn how to conduct the test and read the results	Casts , crystals, others substances	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 6	2 hr.	Learn how to conduct the test	Clearance tests and creatinine	Lecture and conduct	Daily examinations

		and read the results		laboratory experiments	and report writing
Week 7	2 hr.	Learn how to conduct the test and read the results	Tubular function tests and phenolsulfonphthalein test	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 8	2 hr.	Learn how to conduct the test and read the results	Concentration tests and dilution tests	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 9	2 hr.	Learn how to conduct the test and read the results	Liver function tests Alanine Aminotransferase Aspartate Aminotransferase	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 10	2 hr.	Learn how to conduct the test and read the results	Alkaline Phosphatase Alkaline Phosphatase isomerase	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 11	2 hr.	Learn how to conduct the test and read the results	Lipid profile tests	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 12	2 hr.	Learn how to conduct the test and read the results	Hormons	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 13	2 hr.	Learn how to conduct the test and read the results	Culture and sensitivity tests	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 14	2 hr.	Learn how to conduct the test and read the results	Semen analysis	Lecture and conduct laboratory experiments	Daily examinations and report writing
Week 15	2 hr.	Learn how to conduct the test and read the results	Analysis of gastric and duodenal secretions	Lecture and conduct laboratory experiments	Daily examinations and report writing

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)	1-Nurse manual of laboratory and diagnostic tests Bonita marrow Cavanaugh 4 edition, Copyright © 2003 F.A. Davis Company 2- A Manual of Laboratory and Diagnostic Tests 7th edition (July 2003): By Frances T Fischbach RN, BSN, MSN By Lippincott Williams & Wilkins Publishers
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Microbial toxicology

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 4/4/2024

5. Available Attendance Forms: Class room & Lab.

6. Number of Credit Hours (Total) / Number of Units (Total) 30 / 4

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

Name: Asst. Prof. Dr. Sanaa Ghali Jabur
Email:1- sanaaghali@sci.utq.edu.iq
2- sanaagali12345@gmail.com.
3- sanaajabur@yahoo.com

8. Course Objectives

1-understanding principals of microbial toxicology
2- understanding the factors that induces the microbial toxins
3- understanding the mod of action microbial toxins in pathogenicity
4-take knowledge of scientific foundations in identification and biochemically transformation of microbial toxins
5- take knowledge about role of microbial toxins in service the environment and human(antibiotic)
6-Gain knowledge of how to diagnose microbial toxins and the clinical cases they cause

9. Teaching and Learning Strategies

Strategy	Theoretical and practical experiencing focusing in the importance of microbial toxin and their role in pathogenicity and may be can uses in treatment

10. Course Structure (Theory)

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
Week	2	Principle of microbial food poisoning	Introducing the principles of microbial contamination and food poisoning	Lecture and Discussion	Daily Quiz direct questions
Week	2	Food poisoning caused by exoto of different type of G+ bacteria	Introducing Food poisoning caused by exotoxin of differe type of G+ bacteria	Lecture and Discussion	Daily Quiz direct questions
Week	2	Food poisoning caused by exoto of different type of G- bacteria part 1	Introducing Food poisoning caused by exotoxin of differe type of G- bacteria part 1	Lecture and Discussion	Daily Quiz direct questions
Week	2	Food poisoning caused by Exotoxins of different type of G- bacteria part 2	Introducing Food poisoning caused by Exotoxins of diffe type of	Lecture and Discussion	Daily Quiz direct questions

			G- bacteria part 2		
Week	2	Food poisoning caused by endotoxins of different type of G- bacteria part 1	Introducing Food poisoning caused by endotoxins of different type of G- bacteria part 1	Lecture and Discussion	Daily Quiz direct questions
Week	2	Food poisoning caused by endotoxins of different type of G- bacteria part 2	Introducing Food poisoning caused by endotoxins of different type of G- bacteria part 2	Lecture and Discussion	Daily Quiz direct questions
Week	2	Definition and principles of Fungi toxins	Introducing Definition and principles of Fungi toxins	Lecture and Discussion	Daily Quiz direct questions
Week	2	Months exam	Months exam	Lecture and Discussion	Daily Quiz direct questions
Week	2	Mycotoxicosis of exotoxins toxi of deferent type of fungi part 1	Introducing Mycotoxicosis o exotoxins toxins of deferent type of fungi part 1	Lecture and Discussion	Daily Quiz direct questions
Week 10	2	Mycotoxicosis of exotoxins toxi of deferent type of fungi part 2	Introducing Mycotoxicosis o exotoxins toxins of deferent type of fungi part 2	Lecture and Discussion	Daily Quiz direct questions
Week 11	2	Mycotoxicosis of endotoxins tox of deferent type of fungi part 1	Introducing Mycotoxicosis of endotoxins toxins of defe type of fungi part 1	Lecture and Discussion	Daily Quiz direct questions
Week 12	2	Mycotoxicosis of endotoxins tox of deferent type of Fungi part 2	Introducing Mycotoxicosis o endotoxins toxins of deferen type of Fungi part 2	Lecture and Discussion	Daily Quiz direct questions
Week 13	2	Principle of Toxins of parasite	Introducing Principle of Tox of parasite	Lecture and Discussion	Daily Quiz direct questions
Week 14	2	Toxicosis of parasite Toxins part 1	Introducing Toxicosis of parasite Toxins part 1	Lecture and Discussion	Daily Quiz direct questions
Week 15	2	Toxicosis of parasite Toxins part 2	Introducing Toxicosis of parasite Toxins part 2	Lecture and Discussion	Daily Quiz direct questions
Course Structure (Laboratory)					
Week 1	2	Identification the cases of food poisoning caused by different type of G+- bacteria part 1	Introducing Identification the cases of food poisoning cause by different type of G+- bacte part 1	Lecture and Discussi	Daily Quiz direct questions
Week 2	2	Identification the cases of food poisoning caused by different type of G+- bacteria part 2	Introducing Identification the cases of food poisoning cause by different type of G+- bacte part 2	Lecture and Discussi	Daily Quiz direct questions
Week 3	2	Identification the cases of food poisoning caused by different t of G+ bacteria part 3	Introducing the cases of food poisoning caused by different type of G+ bacteria part 3	Lecture and Discussi	Daily Quiz direct questions
Week 4	2	Identification the cases of food poisoning caused by diffe type of G- bacteria part 1	Introducing Identification the cases of food poisoning cause by different type of G- bacteria part 1	Lecture and Discussi	Daily Quiz direct questions
Week 5	2	Identification the cases of food poisoning caused by different type of G- bacteria part 2	Introducing Identification the cases of food poisoning caused different type of G- bacteria part 2	Lecture and Discussi	Daily Quiz direct questions
Week 6	2	Identification the cases of food poisoning caused by diffe type of G- bacteria part 3	Introducing Identification the cases of food poisoning cause by different type of G- bacteria part 3	Lecture and Discussi	Daily Quiz direct questions

Week 7	2	Identification the cases of mycotoxicosis of different typ fungi part **1**	Introducing Identification the cases of mycotoxicosis of different type of fungi part **1**	Lecture and Discussi	Daily Quiz direct questions
Week 8	2	Identification the cases of mycotoxicosis of different typ fungi part **2**	Introducing Identification the cases of mycotoxicosis of different type of fungi part **2**	Lecture and Discussi	Daily Quiz direct questions
Week 9	2	Identification the cases of mycotoxicosis of different typ fungi part **3**	Introducing Identification the cases of mycotoxicosis of different type of fungi part **3**	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	Identification the cases of toxicities of different type of parasite part1	Introducing Identification the cases of toxicities of different type of parasite part1	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	Identification the cases of toxicities of different type of parasite part2	Introducing Identification the cases of toxicities of different type of parasite part2	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	Months exam	Months exam	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	Identification the cases of toxicities of different type parasite part**3**	Introducing Identification the cases of toxicities of different type parasite part**3**	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	other method and systems of identification of different microbial toxin part **1**	Introducing other method and systems of identification of different microbial toxin part **1**	Lecture and Discussi	Daily Quiz direct questions
Week 1	2	other method and systems of identification of different microbial toxin part **2**	Introducing Introducing other method and systems of identification of different microbial toxin part **2**	Lecture and Discussi	Daily Quiz direct questions

11.Course Evaluation

Distributing the score out of 100 according to the task Introducing s 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)	1-Takayuki Shibamoto, & Leonard Bjeldanes.(2009). Introduction to Food Toxicology. Second Edition. Academic Press publications. United States of America 2-Donald G. Barceloux . (2007). Medical Toxicology of Natural Substances: Foods, Fungi, Medicinal Herbs . Wiley published 3- مطني،عدي نجم اسماعيل .(2014). السموم الفطرية النظرية والمفهوم العام .جامعة بغداد- كلية الزراعة- قسم وقاية النبات .
Main references (sources)	Takayuki Shibamoto, and Leon Bjeldanes.(2009). Introduction to Food Toxicolo Second Edition. Academic Press publicatic United States of America
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	https://council.science/ar/member/iutox-international-union-of-toxicology/

Course Description Form

1. Course Name: medical mycology

2. Course Code:

3. Semester / Year:2023-2024

4. Description Preparation Date:

5. Available Attendance Forms:

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

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

Name: Asst.prof.dr.Iman Hadi Alfayyadh
Lamia Youssef
Email: imanalfayyadh@gmail.com

8. Course Objectives

Course Objectives	**• This course deals with the basic concept of medicinal mushrooms.** **• Understanding fungi and their diseases. Oth materials in the Inception section.** **• Understanding laboratory diagnosis.** **• Understand how to take a sample, examine and isolate the fungus from it.** **Identify their types and the importance of e type**

9. Teaching and Learning Strategies

Strategy	1. Introduction to pathogenic fungi. 2. The most important types of fungi and their classification 3. Isolation of fungi according to the type of sample 4. Identify sampling methods. 5. Learn how to diagnose fungi. 6. Diseases and their relationship to laboratory tests. 7. Recognize the importance of laboratory diagnosis. 8. Determine the main section for laboratory tests.

10. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2 h	Introduction	Introduction about fungi	Lecture, dialogue	discussion, daily tests, direct questions
Week 2	2 h	Medical Mycology	Define fungi	Lecture, dialogu	discussion, daily tests direct questions
Week 3	2 h	. Mycology	Explained medical mycology	Lecture, dialogu	discussion, daily tests direct questions
Week 4	2 h	Structure of Fungi.	Mold-yeast	Lecture, dialogu	discussion, daily tests direct questions
Week 5	2 h	filamentous or mold form	Mold form	Lecture, dialogu	discussion, daily tests direct questions
Week 6	2 h	DIMORPHIC FUNGI:	Pathogen fungi	Lecture, dialogu	discussion, daily tests direct questions
Week 7	2 h	Classification of Fungi	5 classes	Lecture, dialogu	discussion, daily tests direct questions
Week 8	2 h	Antifungal agent	Drug and antifungi	Lecture, dialogu	discussion, daily tests direct questions
Week 9	2 h	Azole Antifungal Drugs	Azole group	Lecture, dialogu	discussion, daily tests direct questions
Week 10	2 h	diagnoses of Mycoses	Mycoses in human	Lecture, dialogu	discussion, daily tests direct questions
Week 11	2 h	Neocallimastigomycota	Class Neocallimastigomycota	Lecture, dialogu	discussion, daily tests direct questions
Week 12	2 h	Neocallimastix	Class Neocallimastix	Lecture, dialogu	discussion, daily tests direct questions
Week 13	2 h	Blastocladiomycota	Class Blastocladiomyco	Lecture, dialogu	discussion, daily tests direct questions
Week 14	2 h	Classification of Blastocladiomycota	Only pathogen	Lecture, dialogu	discussion, daily tests direct questions
Week 15	2 h	Glomeromycota-:	Class Glomeromycota	Lecture, dialogu	discussion, daily tests direct questions
Course Structure (Laboratory)					
Week 1	2 h	Introduction	About fungi	Lecture, dialogu	discussion, daily tests direct questions
Week 2	2 h	Medical fungi	In human	Lecture, dialogu	discussion, daily tests direct questions
Week 3	2 h	Superficial mycosis	Infection hair	Lecture, dialogu	discussion, daily tests direct questions
Week 4	2 h	Subcutaneous mycosis	Infection skin	Lecture, dialogu	discussion, daily tests direct questions
Week 5	2 h	Malassezia infection	Infection systematic	Lecture, dialogu	discussion, daily tests direct questions
Week 6	2 h	Seborrhoeic dermatitis	Seborrhoeic dermatitis	Lecture, dialogu	discussion, daily tests direct questions
Week 7	2 h	Keratinophilic Fungi)	In nail and hair	Lecture, dialogu	discussion, daily tests direct questions
Week 8	2 h	cultuers	In lab	Lecture, dialogu	discussion, daily tests direct questions
Week 9	2 h	Growth Control	In lab	Lecture, dialogu	discussion, daily tests direct questions

Week 10	2 h	Isolation of fungi	Microscopes	Lecture, dialogu	discussion, daily tests direct questions
Week 11	2 h	Identification of fungi	Smear	Lecture, dialogu	discussion, daily tests direct questions
Week 12	2 h	Superficial mycoses with invading of living tissues	In lab	Lecture, dialogu	discussion, daily tests direct questions
Week 13	2 h	Non Dermatophytose	Only pathogen	Lecture, dialogu	discussion, daily tests direct questions
Week 14	2 h	Laboratory diagnosis of Fungal infection	In lab	Lecture, dialogu	discussion, daily tests direct questions
Week 15	2 h	Subcutaneous mycosis	Only pathogen	Lecture, dialogu	discussion, daily tests direct questions

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)	clinical Haematology T.Rashad S.M 2019
Main references (sources)	Medical mycology 2019.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Immunology

2. Course Code: Path. 305

3. Semester / Year : 2023-2024 /

4. Description Preparation Date : 3/4/2024

5. Available Attendance Forms : Lectures in class room and lab

6. Number of Credit Hours (Total) / Number of Units (Total) : 4 hours 2 units

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

Name: Prof. Dr. Hind M Mousa

Email: hindmousa_pa@sci.utq.edu.iq

8. Course Objectives

Course Objectives	The Immunology course is aimed to provide a foundation in the basic conc and terminology of immunology and to explain the anatomy of immune sys and the types of immunity (innate & adaptive) , defense lines that body to eliminated infectious agents , the distinction between antigens antibodies, the distinction between primary and secondary immune respo and finally the identification of antigen receptors in adaptive immunity and mechanism of activation of lymphocytes

9. Teaching and Learning Strategies

Strategy	1-Interactive lectures . 2- Brainstorming 2-Discussion sessions. 3- Practical training. 4- Activities and duties. 5- Problem solving method. 6-Work in groups inside the laboratory. 7-Encouraging attendance at seminars and scientific meetir held at the college

10. Course Structure (Theory)

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

Week 1	2	Identify the history of the emergence of immunity	Historical Perspective	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activi ,reports and duties
Week 2	2	Understand the nature and anatomy of the immune system	Anatomy of Immune system	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 3	2	Identify the mechanisms of natural and acquired immunity	Innate immunity and adaptive immunity	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 4	2	Identify the role of non-specialized phagocytic cells	Phagocytosis	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 5	2	Identify the role of complement in innate and adaptive immunity	Complement	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 6	2	Understanding the inflammatory response and its active mediators	Inflammatory response	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 7	2	Identify the antigen and its types	Antigen , Types of antigens	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 8	2		Quiz		
Week 9	2	Identify the antibody and its types	Antibody	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 10	2	Understanding the mechanism of initiation of the immune response	Initiating immune response	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 11	2	Identify the Humeral immunity	Humeral immunity	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 12	2	Identify the B cell and its role in specific immunity	B cell	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 13	2	Identify CMI, T cell and its role in specific and non-specific immunity	CMI, T cell	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 14	2	-	Christmas Holiday	Lecture presentation dialogue + discussion	Daily tests and brainstorming , activities ,reports and duties
Week 15	2		Mid Exam		

Course Structure (Laboratory)					
Week 1	2	Identify the types of Cell in immune system	Cell in immune system	Lecture presentation + discussion	Daily oral tests and practical test
Week 2	2	Identify the shape and structure of Cell in immune system	Blood smear	Lecture presentation , Practical training	Daily oral tests and practical test
Week 3	2	Identify the Principles of immunological techniques	Principles of immunological techniques	Lecture presentation , Practical training	Daily oral tests and practical test
Week 4	2	Identify the Primary bind test	Primary binding test	Lecture presentation , Practical training	Daily oral tests and practical test
Week 5	2	Identify the Complement fixation results(positive ,negative)	Complement fixation	Lecture presentation , Practical training	Daily oral tests and practical test
Week 6	2	Identify the Identify the positive results of ELISA and the principle of test	ELISA	Lecture presentation , Practical training	Daily oral tests and practical test
Week 7	2		Quiz		
Week 8	2	Identify the positive results of RIA and the principle of test	RIA	Lecture presentation , Practical training	Daily oral tests and practical test
Week 9	2	Identify the Secondary binding test	Secondary binding test	Lecture presentation , Practical training	Daily oral tests and practical test
Week 10	2	Identify the Agglutination	Agglutination	Lecture presentation , Practical training	Daily oral tests and practical test
Week 11	2		Quiz		
Week 12	2	Identify the Types of blood groups practically	Blood groups	Lecture presentation , Practical training	Daily oral tests and practical test
Week 13	2	Identify the Widal test	Widal test	Lecture presentation , Practical training	Daily oral tests and practical test
Week 14	2	Identify the Coombs test	Coombs test	Lecture presentation , Practical training	Daily oral tests and practical test
Week 15	2		**Mid Exam**		

10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
First	2theorical 2 practical	Know the history of immune development	Historical Perspective	Daily tests and brainstorm	Lecture and discussion

Second		Study the Anatomy of the immune system	Anatomy of Immune system	Daily tests and brainstorm	Lecture and discussion
Third	2theorical 2 practical	The distinction between humeral and innate immunity	Innate immunity and adaptive immunity	Daily tests and brainstorm	Lecture and discussion
Fourth	2theorical 2 practical	Find out the first natural line of defensive	Phagocytosis	Daily tests and brainstorm	Lecture and discussion
fifth	2theorical 2 practical	Knowledge of natural non-specialized defense mechanisms	Complement pathways	Daily tests and brainstorm	Lecture and discussion
Sixth	2theorical 2 practical	Knowledge of natural non-specialized defenses	Inflammatory response	Daily tests and brainstorm	Lecture and discussion
seventh	2theorical 2 practical	Knowledge of specialized defenses	Antigen & Antibody	Daily tests and brainstorm	Lecture and discussion
Eighth	2theorical 2 practical	Identify the immune response system	Initiating immune response	Daily tests and brainstorm	Lecture and discussion
Ninth	2theorical 2 practical	Knowledge of specialized defenses	Lymphocytes	Daily tests and brainstorm	Lecture and discussion
Tenth	2theorical 2 practical	Identify unwanted immune disorders	Hypersensitivity	Daily tests and brainstorm	Lecture and discussion
Eleventh	2theorical 2 practical	Identify unwanted immune disorders	Immunodeficiency	Daily tests and brainstorm	Lecture and discussion
Twelveth	2theorical 2 practical	Identify unwanted immune disorders	Tolerance & Autoimmune disease	Daily tests and brainstorm	Lecture and discussion
Thirteenth	2theorical 2 practical	Knowledge of how to respond to a tumor	Tumor immunity	Daily tests and brainstorm	Lecture and discussion
Fourteenth	2theorical 2 practical	Identify the immune rejection mechanisms of	Transplantation and Immunity to microbe	Daily tests and brainstorm	Lecture and discussion

		the transplanted body and identify antimicrobial defense mechanisms			
Fifteenth	2theorical 2 practical		Exam		

11.Course Evaluation

Monthly and daily tests(theoretical and practical), assignments, reports and oral discussions

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	Mohanty S. K.r, and Leela K S.(2014).Textbook of Immunol 2ed edition KC Nathsarma.pp:286
Main references (sources)	Kindt TJ, RA Goldsby, BA Osborne, *Kuby Immunology*, 6th edition, WH Freeman, New York, 2007. Mohanty S. K.r, and Leela K S.(2014).Textbook of Immunolog 2ed edition KC Nathsarma.pp:286
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

Course Description Form

1. Course Name: Biotechnology

2. Course Code: Path.

3. Semester / Year : 2023-2024 /

4. Description Preparation Date : 3/4/2024

5. Available Attendance Forms : Lectures in class room and lab

6. Number of Credit Hours (Total) / Number of Units (Total) : 4 hours 2 units

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

Name: Prof. Dr. Hind M Mousa

Email: hindmousa_pa@sci.utq.edu.iq

8. Course Objectives

Course Objectives	1. Introducing students to the concept of biotechnology, the history of development and what its branches are 2. Study the importance and applications of biotechnology and its role in diffe sciences 3. Focus on the role of medical biotechnology and its most important applicati and products 4. Study of pharmacogenome and the role of genetic heterogeneity in diffe response to the drug. 5. Study of the types of modern genetic tests and their role in avoiding predicting diseases 6. Study the importance of cellular fusion and its role in improving some micro and plant strains and their multiple use 7.Study gene therapy and its types and importance in the treatment of m incurable diseases and try to link this information to reality and its application the diagnosis and treatment of many genetic deseas

9. Teaching and Learning Strategies

10. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2	Historical Perspective	Learn about the history of the discovery of biotechnology and the first attempts of scientists	Theatrical and practical lectures	Lecture and discussion
Week 2	2	The fields of biotechnology	Learn about biotechnology fields and applications	Theatrical and practical lectures	Lecture and discussion

Week 3	2	The types of biotechnology	Learn about biotechnology branches	Theatrical and practical lectures	Lecture and discussion
Week 4	2	Medical biotchnology	Learn about biomedical technology	Theatrical and practical lectures	Lecture and discussion
Week 5	2	DNA Vaccine	Identification of vaccines resulting from DNA reconnection or chronism	Theatrical and practical lectures	Lecture and discussion
Week 6	2	Monoclonal antibodi	Introduction of single-cyclosic antibodies	Theatrical and practical lectures	Lecture and discussion
Week 7	2	Genetic tests	Knowing what are the gentic tests	Theatrical and practical lectures	Lecture and discussion
Week 8	2	Pharmacogenomic&pharmaceutical	Knowing what are the Pharmacogenomic&pharmacoceutical and what is roles in choosing nsim the treatment for every paient	Theatrical and practical lectures	Lecture and discussion
Week 9	2	Bio process fermentation	Define and knowing what the bio fermentation is ?	Theatrical and practical lectures	Lecture and discussion
Week 1(	2	Protoplast fusion	What is the Protoplast fusion	Theatrical and practical lectures	Lecture and discussion
Week 11	2	Protein extraction &purification	Knowing who we can extraction the protein and purification is	Theatrical and practical lectures	Lecture and discussion
Week 12	2	Genetic modified organism	Knowing what are the gentic modified and orga	Theatrical and practical lectures	Lecture and discussion
Week 13	2	Gene therapy	What are the gene therapy and its types	Theatrical and practical lectures	Lecture and discussion
Week 14	2	Historical Perspective	Learn about the history of the discovery of biotechnology and the first attempts of scientists	Theatrical and practical lectures	Lecture and discussion
Week 15	2	The fields of biotechnology	Learn about biotechnology fields and applications	Theatrical and practical lectures	Lecture and discussion
Course Structure (Laboratory)					
Week 1	2	Medical biotchnology	Learn about biomedical technology	Theatrical and practical lectures	Lecture and discussion
Week 2	2	DNA Vaccine	Identification of vaccines resulting from DNA reconnection or chronism	Theatrical and practical lectures	Lecture and discussion
Week 3	2	Monoclonal antibodi	Introduction of single-cyclosic antibodies	Theatrical and practical lectures	Lecture and discussion
Week 4	2	Genetic tests	Knowing what are the gentic tests	Theatrical and practical lectures	Lecture and discussion
Week 5	2	Pharmacogenomic&pharmaceutical	Knowing what are the Pharmacogenomic&pharmacoceutical and what is roles in choosing nsim the treatment for every paient	Theatrical and practical lectures	Lecture and discussion
Week 6	2	Bio process fermentation	Define and knowing what the bio fermentation is ?	Theatrical and practical lectures	Lecture and discussion
Week 7	2	Protoplast fusion	What is the Protoplast fusion	Theatrical and practical lectures	Lecture and discussion
Week 8	2	Protein extraction &purification	Knowing who we can extraction the protein and purification is	Theatrical and practical lectures	Lecture and discussion
Week 9	2	Genetic modified organism	Knowing what are the gentic modified and orga	Theatrical and practical lectures	Lecture and discussion
Week 1(	2	Gene therapy	What are the gene therapy and its types	Theatrical and practical lectures	Lecture and discussion

Week 11	2	Historical Perspective	Learn about the history of the discovery of biotechnology and the first attempts of scientists	Theatrical and practical lectures	Lecture and discussion
Week 12	2	The fields of biotechnology	Learn about biotechnology fields and applications	Theatrical and practical lectures	Lecture and discussion
Week 13	2	The types of biotechnology	Learn about biotechnology branches	Theatrical and practical lectures	Lecture and discussion
Week 14	2	Medical biotchnology	Learn about biomedical technology	Theatrical and practical lectures	Lecture and discussion
Week 15	2		**Mid Exam**		

11.Course Evaluation

Monthly and daily tests(theoretical and practical), assignments, reports and oral discussions

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	GlickB. R., Delovitch T. L.,and Patten C. L. (2014). Medical biotechnology .ASM.PRESS,WASHINGTON, DC.PP.737.
Main references (sources)	Brandenberg O, Dhlamini Z ,Sensi A, and Ghosh K .(2011) Introduction to Molecular Biology and Genetic Engineering ,Food and Agriculture Organization ofthe United Nations Rome,2011pp: 146
Recommended books and references (scientific journals, reports...)	-
Electronic References, Websites	-

Course Description Form

1. Course Name: Hematology

2. Course Code:

3. Semester / Year:**2023-2024**

4. Description Preparation Date:**2/4/2024**

5. Available Attendance Forms: **Lectures** in classrooms & **Laboratories**

6. Number of Credit Hours (4 h) / Number of Units 3

7. Course administrator's name :

Name: Lamyaa kadhim Ouda
Email: lamyaa.kadhim@sci.utq.edu.iq

8. Course Objectives

Course Objectives	Describe the basic concepts of blood diseases with the principles of a blood test. Both diagnostic tools are fully available and are currentl available. The course includes a definition of hematology, blood formation, blood components, function, etc.In addition, manual automation will also be covered in common pathological blood diseases and blood disorders

9. Teaching and Learning Strategies

Strategy	1-Understand the principles of hematology, both blood, functions, and disorders 2-Introducing students to the physiological background of the blood. Some disorders result from any defect that accompanies the person in the case of an increase or decrease from the normal rate of blood levels. 3-Encourage the student to learn how blood works and is made up, including red and white cells, platelets, and proteins found in plasma.

10. Course Structure (Theory)

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

Week 1	2h	Introduction to Hematology	Hematology	Presentation and discussion	Questions & **Quizzes**
Week 2	2h	Haemotoposic	Blood formation	Presentation and discussion	Questions & Quizzes
Week 3	2h	Embryonic developme of blood	Blood formation	Presentation and discussion	Questions & **Quizzes**
Week 4	2h	Red blood cell (Erythrocyte)	Blood component	Presentation and discussion	Questions & Quizzes
Week 5	2h	Apoptosis	Blood component	Presentation and discussion	Questions & **Quizzes**
Week 6	2h	Erythropoitin	Hormones	Presentation and discussion	Questions & Quizzes
Week 7	2h	Haemoglobin	RBC components	Presentation and discussion	Questions & **Quizzes**
Week 8		**Monthly exam**			
Week 9	2h	Haemoglobin	RBC components	Presentation and discussion	Questions & **Quizzes**
Week 10	2h	Haemoglobin synthesi	RBC components	Presentation and discussion	Questions & Quizzes
Week 11	2h	Haemoglobin abnormalities	Genetic disorder	Presentation and discussion	Questions & **Quizzes**
Week 12	2h	The white cells(granulocytes)	White blood cells	Presentation and discussion	Questions & Quizzes
Week 13	2h	Monocytes and benign disorder	White blood cells	Presentation and discussion	Questions & **Quizzes**
Week 14	2h	The wite cell – lymphocytes and their benign disorder	White blood cells	Presentation and discussion	Questions & Quizzes
Week 15	2h	Granulopolesis	WBC&benign disorder	Presentation and discussion	Questions & Quizzes
Course Structure (Laboratory)					
Week 1	2h	Blood collection	Introduction to Hematology	**Practical**	Questions & **Quizzes**
Week 2	2h	Capillary blood punctu	Methods blood punctu	**Practical**	Questions & Quizzes
Week 3	2h	Venous blood punctur	Methods blood punctu	**Practical**	Questions & **Quizzes**
Week 4	2h	Blood collection tubes	Blood collection	**Practical**	Questions & Quizzes
Week 5	2h	Anticoagulant	Anticoagulant	**Practical**	Questions & **Quizzes**
Week 6	2h	Storage of blood	How Storage of blood	**Practical**	Questions

					& Quizzes
Week 7	2h	Test tubes used for blc sample	Test tubes	**Practical**	Questions & **Quizzes**
Week 8	2h	**Monthly exam**			
Week 9	2h	Complete blood count	Complete blood count	**Practical**	Questions & **Quizzes**
Week 10	2h	Blood smear		**Practical**	Questions & Quizzes
Week 11	2h	Abnormal blood smea	Complete blood count	**Practical**	Questions & **Quizzes**
Week 12	2h	Rh blood group systen	blood group	**Practical**	Questions & Quizzes
Week 13	2h	Blood film	Complete blood count	**Practical**	Questions & **Quizzes**
Week 14	2h	PCV count	Complete blood count	**Practical**	Questions & Quizzes
Week 15	2h	Complete blood count	Complete blood count	**Practical**	Questions & Quizzes

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)	book of blood science, AL-AHLYIA publisher, Jordan.
Main references (sources)	1-Loffler, H., & Rastetter, J. (2012). Atlas of clinical hematology. Springer Science & Business Media 2-Hoffbrand, A. V., & Steensma, D. P. (2019). Hoffbrand's essential haematology. John Wiley & Sons.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Virology

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 4/4/2024

5. Available Attendance Forms: Class room & Lab.

6. Number of Credit Hours (4h) / Number of Units (3)

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

Name: Prof. Dr. Ahmed H. Mohamed
Email:1ahmedhasan5@sci.utq.edu.iq

8. Course Objectives

1-understanding principals of microbial toxicology 2- understanding the factors that induces the microbial toxins 3- understanding the mod of action microbial toxins in pathogenicity	4-take knowledge of scientific foundations in identification and biochemically transformation of microbial toxins 5- take knowledge about role of microbial toxins in service the environment and human(antibiotic) 6-Gain knowledge of how to diagnose microbial toxins and the clinical cases they cause

9. Teaching and Learning Strategies

Strategy	Theoretical and practical experiencing focusing in the importance of microbial toxin and their role in pathogenicity and may be can uses in treatment

10. Course Structure (Theory)

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
First	2theorical 2 practical	Nature of viruses	Introduction about virology	Lecture Presentation	Daily Quiz direct questions
Second	2theorical 2 practical	Properties of viruses	Properties of viruses	Lecture Presentation	Daily Quiz direct questions
Third	2theorical 2 practical	Classification of viruses	Classification of viruses	Lecture Presentation	Daily Quiz direct questions
Fourth	2theorical 2 practical	Replication of viruses	Replication of viruses	Lecture Presentation	Daily Quiz direct questions
Fifth	2theorical	Pathogenesis of viruses	Pathogenesis of viruses	Lecture	Daily Quiz direct

	2 practical			Presentation	questions
Sixth	2theorical 2 practical	General properties	Herpesviredae, herpes simplex virus	Lecture Presentation	Daily Quiz direct questions
Seventh	2theorical 2 practical	General properties	Vircella zoster virus	Lecture Presentation	Daily Quiz direct questions
Eighth	2theorical 2 practical	General properties	Other types of herpesviruses	Lecture Presentation	Daily Quiz direct questions
Nineth	2theorical 2 practical	General properties	Poxvirus	Lecture Presentation	Daily Quiz direct questions
Tenth	2theorical 2 practical	General properties	Hepatitis B virus	Lecture Presentation	Daily Quiz direct questions
Eleventh	2theorical 2 practical	General properties	Hepatitis C virus	Lecture Presentation	Daily Quiz direct questions
Twelfth	2theorical 2 practical	General properties	Orthomyxoviruses	Lecture Presentation	Daily Quiz direct questions
Thirteenth	2theorical 2 practical	General properties	Paramyxoviruses, RSV	Lecture Presentation	Daily Quiz direct questions
Fourteenth	2theorical 2 practical	General properties	Measles and Mumps	Lecture Presentation	Daily Quiz direct questions
Fifteenth	2theorical 2 practical	General properties	Exam	Lecture Presentation	Daily Quiz direct questions

Course Structure (Laboratory)

Week 1	2	Introduction about virology	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 2	2	Properties of viruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 3	2	Classification of viruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 4	2	Replication of viruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 5	2	Pathogenesis of viruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 6	2	Herpesviredae, herpes simplex virus	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 7	2	Vircella zoster virus	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 8	2	Other types of herpesviruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 9	2	Poxvirus	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 10	2	Hepatitis B virus	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 11	2	Hepatitis C virus	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 12	2	Orthomyxoviruses	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 13	2	Paramyxoviruses, RSV	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 14	2	Measles and Mumps	Lecture Presentation	Daily Quiz direct questio	Daily Quiz direct questions
Week 15	2	Exam			

11.Course Evaluation
Distributing the score out of 100 according to the task Introducing s 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)	Jawetz, Melnick, & Adelberg's Medical Microbiology Twenty-Sixth Edition 2013
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Microbial diagnosis

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 4/4/2024

5. Available Attendance Forms: Class room & Lab.

6. Number of Credit Hours (4) / Number of Units 3

7. Course administrator's name)

Name: Prof. Dr. Ahmed H. Mohamed
Email:1ahmedhasan5@sci.utq.edu.iq

8. Course Objectives

1-understanding principals of microbial
2- understanding the factors that induces the microbial
3- understanding the mod of action microbial in pathogenicity
4-take knowledge of scientific foundations in and biochemically transformation of microbial toxins
5- take knowledge about role of microbial in service the environment and human(antibiotic)
6-Gain knowledge of how to diagnose microbial and the clinical cases they cause

9. Teaching and Learning Strategies

Strategy	Theoretical and practical experiencing focusing in the importance of microbial and their role in pathogenicity and may be can uses in treatment

10. Course Structure (Theory)

Week	Hours	Required Learning Outcomes			U
First	2theorical 2 practical	Safety Program for the Clinical Laboratory	Safety Program for the Clinical Laboratory	Lecture Presentation	Daily Quiz direct questions
Second	2theorical 2 practical	Biosafety Levels	Biosafety Levels	Lecture Presentation	Daily Quiz direct questions
Third	2theorical 2 practical	Performance Improvement in the Microbiology Laboratory	Performance Improvement in the Microbiology Laboratory	Lecture Presentation	Daily Quiz direct questions
Fourth	2theorical 2 practical	Analytic Analysis of Tests	Analytic Analysis of Tests	Lecture Presentation	Daily Quiz direct questions
Fifth	2theorical 2 practical	*Clinical Analysis of Tests*	*Clinical Analysis of Tests*	Lecture Presentation	Daily Quiz direct questions
Sixth	2theorical 2 practical	Specimen Collection and Processing	Specimen Collection and Processing	Lecture Presentation	Daily Quiz direct questions
Seventh	2theorical 2 practical	Microscopic Examination of Materials From Infected Sites Preparation of Samples Grading or Classifying Materials	Microscopic Examination of Materials From Infected Sites Preparation of Samples Grading or Classifying Materials	Lecture Presentation	Daily Quiz direct questions
Eighth	2theorical 2 practical	Mid Term Exam	Mid Term Exam	Lecture Presentation	Daily Quiz direct questions
Nineth	2theorical 2 practical	Importance of Colony Morphology as a Diagnostic Tool Initial Observation and Interpretation of Cultures	Importance of Colony Morphology as a Diagnostic Tool Initial Observation and Interpretation of Cultures	Lecture Presentation	Daily Quiz direct questions
Tenth	2theorical 2 practical	Rapid and Automated Identification Systems	Rapid and Automated Identification Systems	Lecture Presentation	Daily Quiz direct questions
Eleventh	2theorical 2 practical	Antibodies in Serologic Testing Principles of Immunologic Assays	Antibodies in Serologic Testing Principles of Immunologic Assays	Lecture Presentation	Daily Quiz direct questions
Twelfth	2theorical 2 practical	Antibodies in Serologic Testing Principles of Immunologic Assays	Antibodies in Serologic Testing Principles of Immunologic Assays	Lecture Presentation	Daily Quiz direct questions
Thirteenth	2theorical 2 practical	Applications of Molecular Diagnostics Nucleic Acid Hybridization Techniques	Applications of Molecular Diagnostics Nucleic Acid Hybridization Techniques	Lecture Presentation	Daily Quiz direct questions
Fourteenth	2theorical 2 practical	Applications of Molecular Diagnostics Nucleic Acid Hybridization Techniques	Applications of Molecular Diagnostics Nucleic Acid Hybridization Techniques	Lecture Presentation	Daily Quiz direct questions
Fifteenth	2theorical 2 practical	Final Exam	Exam	Lecture Presentation	Daily Quiz direct questions

Course Structure (Laboratory)					
Week 1	2	Common Stains Used for Microscopic Visualization	Common Stains Used for Microscopic Visualization	Daily Quiz direct questio	Daily Quiz direct questions
Week 2	2	Common Stains Used for Microscopic Visualization	Common Stains Used for Microscopic Visualization	Daily Quiz direct questio	Daily Quiz direct questions
Week 3	2	Primary inoculation	Primary inoculation	Daily Quiz direct questio	Daily Quiz direct questions
Week 4	2	Media preparation	Media preparation	Daily Quiz direct questio	Daily Quiz direct questions
Week 5	2	*Quiz*	*Quiz*	Daily Quiz direct questio	Daily Quiz direct questions
Week 6	2	Specimen Collection and Processing: Macroscopic Observation Microscopic Observation	Specimen Collection and Processing: Macroscopic Observation Microscopic Observation	Daily Quiz direct questio	Daily Quiz direct questions
Week 7	2	Microscopic Examination of Materials From Infected Sites Examples of Sample Observations and Reports	Microscopic Examination of Materials From Infected Sites Examples of Sample Observations and Reports	Daily Quiz direct questio	Daily Quiz direct questions
Week 8	2	Mid Term Exam	Mid Term Exam	Daily Quiz	Daily Quiz direct questions

				direct questi	
Week 9	2	Gross Colony Characteristics Used to Differentiate and Identify Presumptively Microorganisms	Gross Colony Characteristics Used to Differentiate and Identify Presumptively Microorganisms	Daily Quiz direc questions	Daily Quiz direct questions
Week 10	2	Biochemical Identification of Gram-Negative Bacteria	Biochemical Identification of Gram-Negative Bacteria	Daily Quiz direc questions	Daily Quiz direct questions
Week 11	2	Use of Serologic Testing in Specific Diseases	Use of Serologic Testing in Specific Diseases	Daily Quiz direc questions	Daily Quiz direct questions
Week 12	2	Use of Serologic Testing in Specific Diseases	Use of Serologic Testing in Specific Diseases	Daily Quiz direc questions	Daily Quiz direct questions
Week 13	2	Applications of Molecular Diagnostics Nucleic Acid Amplification Procedures	Applications of Molecular Diagnostics Nucleic Acid Amplification Procedures	Daily Quiz direc questions	Daily Quiz direct questions
Week 14	2	Measles and Mumps	Applications of Molecular Diagnostics Nucleic Acid Amplification Procedures	Daily Quiz direc questions	Daily Quiz direct questions
Week 15	2	Exam			

11.Course Evaluation

Distributing the score out of 100 according to the task Introducing s 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)	Text Book of Diagnostic Microbiology sixth edition
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. Course Name: Antibiotics

2. Course Code:

3. Semester / Year: 2023-2024

4. Description Preparation Date: 2/4/2024

5. Available Attendance Forms: Class room & Lab.

6. Number of Credit Hours (Total) / Number of Units (Total) 30 / 4

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

Name: Prof. Dr. Saad Salamn Hamim
Email: hamim_pa@sci.utq.edu.iq
Assist. Lec. Sarah G. Khudhur

13. Course Objectives

Course Objectives	• **Antibiotics and Types** • **Antibiotic importance** • **Antibiotics mode of action**

14. Teaching and Learning Strategies

Strategy	Theoretical and practical experiencing fucosing in the importance antibiotics and their role in treatment

15. Course Structure (Theory)

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	2	Antibiotic importance	Introduction	Lecture	Discussion
Week 2	2	Antibiotic sources	Antibiotic definition	Lecture	Discussion
Week 3	2	Antibiotic action	Principles of antimicrobial therapy	Lecture	Discussion
Week 4	2	Antibiotics mechanisms	Origin of drugs	Lecture	Discussion
Week 5	2	Antibiotics mechanisms	Antibiotics discovery	Lecture	Discussion
Week 6	2	Antibiotics mechanisms	Drugs and microbes	Lecture	Discussion
Week 7	2	Antibiotics mechanisms	Mechanisms of drug action	Lecture	Discussion
Week 8	2	Antibiotics mechanisms	Spectrum of drugs	Lecture	Discussion
Week 9	2	Antibiotics mechanisms	Inhibition of cell wall	Lecture	Discussion
Week 10	2	Antibiotics mechanisms	Inhibition of cell membrane	Lecture	Discussion
Week 11	2	Antibiotics mechanisms	Inhibition of nucleic acids	Lecture	Discussion
Week 12	2	Antibiotics action	Inhibition of protein synthesis	Lecture	Discussion

Week 13	2	Antibiotics action	Block of metabolic pathways	Lecture	Discussion
Week 14	2	Antibiotics action	Pencillins (1)	Lecture	Discussion
Week 15	2	Antibiotics action	Cephalosporins	Lecture	discussion

Course Structure (Laboratory)

Week 1	2	Antibiotic importance	Introduction	Lecture	Quiz
Week 2	2	Antibiotics action	Antibiotic producers	Lecture	Quiz
Week 3	2	Antibiotics action	Dilution method	Lecture	Quiz
Week 4	2	Antibiotics action	Diffusion method	Lecture	Quiz
Week 5	2	Antibiotics action	Sensitive test	Lecture	Quiz
Week 6	2	Antibiotics action	Disc preparation	Lecture	Quiz
Week 7	2	Antibiotics action	MIC	Lecture	Quiz
Week 8	2	Antibiotics action	MBC	Lecture	Quiz
Week 9	2	Antibiotics action	Antifungal drugs	Lecture	Quiz
Week 10	2	Antibiotics action	E-test	Lecture	Quiz
Week 11	2	Antibiotics action	Synergic effect	Lecture	Quiz
Week 12	2	Antibiotics action	Antagonism	Lecture	Quiz
Week 13	2	Antibiotics source	Pencillin production	Lecture	Quiz
Week 14	2	Antibiotics source	Soil drugs	Lecture	Quiz
Week 15	2	Antibiotics action	Bacteriostatic effect	Lecture	Exam

16.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

17. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Medical Bacreiology
Main references (sources)	Antibiotics
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	WHO


Univ. of Thi-Qar College of Science
Dept. of Pathological analysis