Ministry of Higher Education and Scientific Research
Academic Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department
Accreditation Department

Al-Huda University College

Course Description

Medical Laboratory Technology Program

2026 - 2025

1. Course name:	
Biology 1	
2. Course code:	
3. Semester/Annual- 1	
2024 2025/	
4. Date of preparation of this description	
2025/7/ 22:	
5. attendance:	
Weekly - In-person - Classrooms	
6. Number of study hours (total) / Number of units (total):	
7. Name of course supervisor (if more than one name is mentioned):	
name : Ali Ibrahim Eidan e-mail :alibiobio40@gmail.com	
8. Course objectives	
To be familiar with the basic concepts of scientific material and its theoretical and practical foundations to increase the efficiency and effectiveness of laboratory management according to the department's objectives.	**Study material objectives**
9. strategic education learning	
Structured interactive discussion - Scientific statement - Collaborative learning - Problem solving - Simulation - Brainstorming - Role-playing - Collaborative workshops	strategic

.10 Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes practical	Hours 2 Theore +tical 2 practical	week
Tests Theoretical practical		The Science of Biology Why study biology is importance, Definition of biology, Some subdivision of biology	**Application study practical**	**7**	**1**
Tests Theoretical practical		The Characteristics of Living Things (Organisms) Evaluation, Adaptation, Respiration,	**Application study practical**	**7**	**2**
		Hemostasis, Metabolism, Anabolism, Catabolism,	**Application study**	**7**	**3**

		Respond to stimuli, Reproduction	**practical**		
		The Kingdom of Living Things Classification of Organisms, Categories of Classification of Organisms, The five Kingdom Scheme Of Classification	**Application study practical**	**7**	**4**
		Chemistry of Life (Biology of Polymers, Levels of Organization Lipids, Carbohydrates, Proteins, Amino acid	**Application study practical**	**7**	**5**
		.3Atopic Dermatitis (AD Cell Structure and Function, Animal cells. Cell Wall, Cell Membrane, Cytoplasmic Matrix, Nucleolus)	**Application study practical**	**7**	**6**
		Endoplasmic Reticulum, Golgi apparatus, Cilia, Flagella Plant cells Comparison Between Animal and Plant, etc.	**Application study practical**	**7**	**7**
		Prokaryotes Cells, Eukaryotes Cells, Cell Life Cycle (Mitosis), Nucleus Division, Cytoplasmic Division)	**Application study practical**	**7**	**8**
		2. Eosinophilic Pneumonias	**Application study practical**	**7**	**9**
		Meiosis (Human Reproduction), Spermatogenesis, Oogenesis	**Application study practical**	**7**	**10**
		Gene and Gene Action, DNA, RNA Structures.;	**Application study practical**	**7**	**11**
		Organ Systems (Digestive, Circulatory, Respiratory Urinary, Muscularly, Nervous) Systems.	**Application study practical**	**7**	**12**
		Viruses, Viroid's, Prions, Bacteriophages, Virtual Life Cycle, Characteristics, Shapes	**Application study practical**	**7**	**13**
Tests Theoretical practical		Viral Human Diseases, Harm full of Viruses	**Application study practical**	**7**	**14**
		Kingdom OF Monera: Phylum Schizophyte (Bacteria), Classification Structure, Morphology., Growth and Function, Motility	**Application study practical**	**7**	**15**

10. Course Evaluation	
Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.	
11. Teaching Learning Resources	
	Required curriculum books (curriculum if available)
Biology 25: Human Biology: Prof. Gonsalves Los Angeles City College Loosely Based on Mader's Human Biology **(Author)**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

12. Course name: Medical terminology
13. Course code:
14. Semester /Age-1 – 2025 2026
15. Date of preparation of this description2025/7/ 23:
16. Available attendance: Weekly - In-person - Classrooms
17. Number of study hours (total) / Number of units (total): 30 hours Theoretical 2 units
18. Name of course supervisor (if more than one name is mentioned):
name : Ahmed Zaher Abdel e-mail :ahm1983edtahr@gmail.com
19. Course objectives

• General: - Familiarity with medical terminology as a cornerstone in understanding clinical sciences in his field of specialization. • Specific: - Studying important medical terminology in the field of specialization in medicine.	**Study material objectives**
20. strategic education learning	
Theoretical explanation of matter	**strategic**

21. Course structure

Evaluation method	Learning method Theoretical	Name of unit or topic	Required Learning Outcomes Theoretical	Hours 2 Theoretical	week
Theoretical (1 month exam + 2 month exam)	=	Introduction, defining medical terminology, techniques of medical word building, elements of medical word, word root, suffixes, prefixes	Theoretical	2	1
	=	Common prefixes, common suffixes ,body structure key terms ,level of organization: cell, tissue, organ, system	Theoretical	2	2
	=	Pathology and abnormal condition :tumours, infection and inflammation ,symptoms ,disease , and diagnosis	Theoretical	2	3
	=	Integumentary (skin) system	Theoretical	2	4
	=	Musculoskeletal system	Theoretical	2	5
	=	Digestive system and Cardiovascular system	Theoretical	2	6
	=	Blood, lymph and immune system	Theoretical	2	7
	=	Respiratory system	Theoretical	2	8
	=	Nervous system and Special senses	Theoretical	2	9

	=	**Endocrine system**	**Theoretical**	**2**	**10**
	=	**Urinary system and Reproductive system**	**Theoretical**	**2**	**11**
	=	**Gynecology, pregnancy ,embryology and childbirth**	**Theoretical**	**2**	**12**
	=	**Childhood, growth and development**	**Theoretical**	**2**	**13**
	=	**Medical record activity and writing a diagnostic report**	**Theoretical**	**2**	**14**
	=	**Revision**	**Theoretical**	**2**	**15**

Course Evaluation .22

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

Teaching Learning Resources .23

	Required curriculum books (curriculum if available)
Nath, Judi Lindsley; Lindsley, Kelsey P. A Short Course in Medical Terminology. Wolters Kluwer Health, 2018.	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

24. Course name:
General Chemistry
25. Course code BIOT :
26. Semester/Annual 2025 – 2026
Semester 1/ STAGE 1
27. Date of preparation of this description2025/7/22:

28. Available attendance: Weekly - In-person - Classrooms

Weekly attendance in classrooms and practical laboratories

29. Number of study hours (total)/number of units (total): 30 Theoretical hours

hours Theoretical + 2 hours Practical / 4 units 2

30. Name of course supervisor (if more than one name is mentioned):

name : Prof. Assam Abbas Faisal e-mail :aso_kak@uoanbar.edu.iq

31. Course objectives

Gain a basic understanding of general chemistry in the Medical Laboratory Technology Department. • Learn about various chemistry disciplines in all specializations. • Conduct practical laboratory experiments to gain medical skills in handling chemical materials to conduct various experiments.	Study material objectives

32. Teaching and learning strategies

Theoretical explanation of the material with practical application.	strategic

Course structure .33

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly exams Daily exams Seminars Reports Laboratory exams	Theoretical + practical computer application	Introduction to Chemistry Principles of Analytical Chemistry and Types of Analytical Analysis Molar Concentration Acid-Base Equilibrium Periodic Table and Equilibrium Constant Spectroscopy Exam Organic Chemistry: Alkenes, Alkenes Alcohols, Their Classification and Properties Aldehydes, Ketones Carboxylic Acids Amines	2 Theoretical وحد 1 وحد+ practical	2 Theoret 2 +ical practica l	1 2 3 4 5 6 7 8 9 10 11 12

34. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily

exams, daily oral exams, monthly written reports, etc.	
35. Teaching Learning Resources	
Lippincott's **biochemistry**	Required curriculum books (curriculum if available)
1. Harpers biochemistry **2. martin biochemistry**	Main References (Sources)
1. general Chemistry **2. chemical basis of life**	reference books (scientific journals, reports...)
	Electronic references, websites

36. Course name:
Medical Ethics
37. Course code:
38. Semester/Annual- 1 – 2025 2026
39. Date of preparation of this description2025/7/ 22:
40. Available attendance: Weekly - In-person - Classrooms
41. Number of study hours (total) / Number of units (total):
15 hours Theoretical 2 units
42. Name of course supervisor (if more than one name is mentioned):
name : Dr. Hamid Mahmoud Nayef e-mail :ham83eed@gmail.com
43. Course objectives

1- Introducing medicine to the principles and ethics of the profession. 2- Teaching medicine how to deal with the behavioral patterns of patients and healthcare workers. 3- Teaching medicine to adhere to medical standards across the ages. Teaching medicine how to maintain laboratory equipment and tools, as well as protect itself from risks.	**Study material objectives**
44. strategic education learning	
Theoretical explanation of matter	**strategic**

45. Course structure					
Evaluation method	**Learning method Theoretical**	**Name of unit or topic**	**Required Learning Outcomes Theoreti 2 cal**	**Hours 1 Theoretical**	**week**
Theoretical (1 month exam + 2 month exam)	=	Principles of professional ethics in stages of civilizational development	**Theoretical**	**1**	**1**
	=	Professional Behavior Definition – Concept – Practical Applications	**Theoretical**	**1**	**2**
	=	Characteristics and attributes of healthcare workers - behavioural manifestations, commitment to the patient's legal and moral rights Dealing with the patient and their companions according to their behaviour	**Theoretical**	**1**	**3**
	=	Behavioral patterns/human-interactive-collective Definition, nature, motivations, interpretations	**Theoretical**	**1**	**4**
	=	Linguistic and non-linguistic communication Definition, types, effects, and designing a successful communication style	**Theoretical**	**1**	**5**
	=	How does communication affect behavior, the art of listening, and how to practice it, with examples of application	**Theoretical**	**1**	**6**
	=	Behavioral tendencies trends, definition, classification, factors affecting them, and methods of their occurrence	**Theoretical**	**1**	**7**
	=	Values of restrictive habits Definition, classification, factors influencing them, methods of establishing them	**Theoretical**	**1**	**8**
	=	Personality types, how to deal with them, personal definition, types, and their relationship	**Theoretical**	**1**	**9**
	=	Safety in laboratories: instructions and tools	**Theoretical**	**1**	**10**
	=	Types of laboratories, laboratory	**Theoreti**	**1**	**11**

		equipment, sample collection tools	**cal**		
	=	Sterilization, physical-chemical sterilization	**Theoreti cal**	**1**	**12**
=	=	Occupational safety: prevention of accident risks, prevention of bacterial and radioactive contamination, prevention of infectious and contagious diseases.	**Theoreti cal**	**1**	**13**

46. Course Evaluation

Distributing a grade out of 100 according to the tasks assigned to the doctor, such as preparing for daily exams, daily oral exams, monthly written exams, etc.

47. Teaching Learning Resources

	Required curriculum books (curriculum if available)
1- Professional Conduct Manual for Physicians by Raji Takriti 2- Laboratory Safety Manual / October 2017 / University of Washington	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

48. Course name: Lab. Instrumentation 1

49. Course code: : Lab. Inst

50. Semester 1 / Age – 2025 2026

51. Date of preparation of this description2025/7/22:

52. Available attendance: Weekly - In-person - Classrooms

53. Number of study hours (total) / Number of units (total): 30 Theoretical hours / 4 units

54. Name of course supervisor (if more than one name is mentioned):	
name : Dr. Mohammed Obaid Ibrahim e-mail : abosadan47@gmail.com	
55. Course objectives	
• Introduce students to the basic types of laboratory equipment used in medical research laboratories. • Enable students to understand the physicochemical principles by which these devices operate. • Provide students with the ability to interpret instrument readings and use the results scientifically in laboratory applications. • Enhance awareness of laboratory safety standards when using various types of equipment.	Study material objectives
56. strategic education learning	
Theoretical explanation of the material with practical application	strategic
57. Course structure	

58. Course name: Lab. Instrumentation 1
59. Course code: : Lab. Inst
60. Semester 1 / Age – 2025 2026
61. Date of preparation of this description2025/7/22:
62. Available attendance: Weekly - In-person - Classrooms
63. Number of study hours (total) / Number of units (total): 30 Theoretical hours / 4 units
64. Name of course supervisor (if more than one name is mentioned):
abosadan47@gmail.com :Dr. Mohammed Obaid Ibrahime-mail : name
65. Course objectives

• Introduce students to the basic types of laboratory equipment used in medical research laboratories. • Enable students to understand the physicochemical principles by which these devices operate. • Provide students with the ability to interpret instrument readings and use the results scientifically in laboratory applications. • Enhance awareness of laboratory safety standards when using various types of equipment.	Study material objectives
66. strategic education learning	
Theoretical explanation of the material with practical application	strategic
67. Course structure	
68. Course name:	
Histology 1	
69. Course code:	
His_to1	
70. Semester 1 / Annual	
2025 – 2026 Annual	
71. Date of preparation of this description:	
2025/7/22	
72. attendance	
Weekly - In-person - Classrooms	
73. Number of study hours (total)/Number of units (total):	
Theoretical Hours \ 4 Units	
74. Name of course supervisor (if more than one name is mentioned):	
name : Baraa Daoud e-mail : baraa7919@gmail.com	
75. Course objectives	
Histology is a basic tool for medical specializations. This study aims to introduce medicine to basic cell types and classify these cells according to the study of the shape of the cells that form these tissues and the basic function of these T cells that form the various tissues and organs of the human body. This is done by examining thin slices of tissue under a microscope.	Study material objectives

76. strategic education learning	
Theoretical explanation of the material with practical application	strategic
77. Course structure	
78. Course name: Medical Bacteriology2	
79. Course code: bac.2 Med	
80. Semester 2 / Annual – 2025 2026	
81. Date of preparation of this description2025/7/22:	
82. Available attendance: Weekly - In-person - Classrooms	
83. Number of study hours (total)/Number of units (total): 30 Theoretical hours.	
84. Name of course supervisor (if more than one name is mentioned	
name : Dr. Mohammed Obaid Ibrahim e-mail : abosadan47@gmail.com	
85. Course objectives	
• To be able to identify pathogenic bacteria that infect different body systems, their epidemiology and symptoms, how to control each disease, and study the body's resistance to disease. - To recognize the epidemiology and symptoms of microbial diseases that control each disease.	Study material objectives
86. strategic education learning	
Theoretical explanation of the material with practical application	Strategic

87. Course structure

88. course name: (medical parasitology)
89. Course code: MP-1
90. Semester 1 - Stage 2 - Academic Year 2024-2025
91. Date of preparation of this description: 22-7-2025
92. Available attendance: Weekly - In-person - Classrooms
93. Number of study hours (total)/Number of units (total): 30 Theoretical hours
94. Name of course supervisor (if more than one name is mentioned):
name : Asst. Prof. Dr. Salim Obaid Katea Mawla e-mail :Saleem.obd@uoalhuda.edu.iq
95. Course objectives

At the end of the semester, students will be able to: 1- Identify the names and types of parasites that cause human diseases, their life cycles, pathogenicity, and laboratory diagnostic methods. 2- Identify the epidemiology of medical parasites, with a focus on endemic parasites in Iraq.	Study material objectives
96. strategic education learning	
Theoretical and practical explanation of the material, with emphasis on diagnosing parasites in all their stages (eggs, larvae, and adult parasites) under a microscope.	strategic
	Course structure .97

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week

Theoretical (January 1st exam + February 2nd exam) Practical seminars + reports + Practical (multiple microscopic diagnosis of all parasite stages: eggs, larvae, worms, cyst stages, and spores)	+Theoretical Educational laboratories	General Introduction: Introduction; Parasites; Host; Zoonosis; Host-parasite Relationships; Life Cycle of Parasites; Sources of Infection; Modes of Infection; Pathogenesis; Immunity in Parasitic Infection; Laboratory Diagnosis		2 Theoret 4 +ical practica l	1
		Protozoa General Features ; Structure ; Reproduction ; Life Cycle ; Classification of Protozoa ; Phylum Sarcoma stigophora; Phylum Apicomplexan; Phylum Ciliophoran; Phylum Microspore			2
		Ascidian, (Amoebae)Ent amoeba histolytic; History and Distribution; Morphology; Life Cycle; Pathogenesis and Clinical Features; Extra intestinal Amoebiasis; Laboratory Diagnosis; Immunity; Treatment;			3
		Ent amoeba Coli , Ent amoeba Gingival is; Endolimax nana 24;; Pathogenic Free-living Amoebae; naegleria Fowler; History and Distribution 26; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment			4
		Ent amoeba Coli , Ent amoeba Gingival is; Endolimax nana 24;; Pathogenic Free-living Amoebae; naegleria Fowleri; History and Distribution 26; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment			5
		Intestinal, Oral, and Genital Flagellates Giardia Lamble; History and Distribution; Habitat; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment			6
		Genus Trichomonas. vaginitis/ urogenital flagellate. humanist. Texan Biology , medical importance and Lab. Diagnosis of each species.			7

		Heamo- flagellates(blood& tissue flagellates),general characters. Developmental stages in the vertebrate & invertebrate hosts. Genus leis mania ,species of leis mania, biology, vector, medical importance of each species, types of leishmaniosis , life cycle ,Lab. Diagnosis, including immunological tests.			8
		Genus Trypanosoma, species of trypanosome, biology , vector, medical importance of each species, forms of parasite, life cycle, Lab. Diagnosis.			9
		Ciliophoran: Blantidiumcoli ,Biology , medical importance, Lab. Diagnosis. Apicomplexan: General charcter.Genus Toxoplasma. T.gondii ,Biology, medical lmportance,acquired and congenital toxoplasmosis. Life cycle, role of domesticate animals in the transmission of the disease. Lab. Diagnosis.			10
		Genus plasmodium. Introduction to malarial parasites, malarial paroxysm, general life cycle of the plasmodium , species of plasmodium.			11
		Falciparum, P. vive, P oval, P. malaria Disease, pathology, medical importance, distribution, main differences during life cycle.			12
		General discussion on malarial parasites ,epidemiology, methods of diagnosis. Time to take clinical samples. Blood films.			13
		Isopora, pathology, medical importance,Lab.Dianosis. Sarcocystis species: pathology , medical importance, Lab diagnosis.			14
		Cryptosporidium diodes Genus cryptosporidium, species belong the genus, biology, pathology, epidemiology,Lab.diagnosis.			15

98. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

99. Teaching Learning Resources

Medical Parasitology Books Medical Microbiology Certified Blind	Required curriculum books (curriculum if available)
Panikers medical parasitology	Main References (Sources)

Maccy & mcartne practical medical parasitology **Jawetze medical microbiology**	reference books (scientific journals, reports...)
Canadian Bioinformatics Workshops https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChsSEwjl29nH88-OAxWpaEECHZh_FgUYACICCAEQABoCd3M&co=1&ase=2&gclid=CjwKCAjw7fzDBhA7EiwAOqJkhzjOObeunaIALnTwepSm7UEXNOuyeGtLt3hJKBdcU0SZguxv1IQBBhoC9XsQAvD_BwE&ohost=www.google.com&cid=CAESVuD2ccNi9Y8yFjNmJ-CAa6wfOjTXnIrtj6tW9KU-vvgs5Ax25mIye3TNtY2HGYCjPHmiocKqrJiuB-XHPCgQU0FHoUNucUH8DfRCHDN-t52ebBJmBeUE&category=acrcp_v1_40&sig=AOD64_1zoum7dNFWV6FCHnxrkzU_AbG1yg&q&nis=4&adurl&ved=2ahUKEwiQutTH88-OAxXPSfEDHSNCCCEQ0Qx6BAgJEAE	Electronic references, websites

100. course name: (medical parasitology)
101. Course code: MP-2
102. Semester 2 - Stage 2 - Academic Year 2024-2025
103. Date of preparation of this description: 22-7-2025
104. Available attendance: Weekly - In-person - Classrooms
105. Number of study hours (total)/Number of units (total): 30 Theoretical hours
106. Name of course supervisor (if more than one name is mentioned):
name : Asst. Prof. Dr. Salim Obaid Katea Mawla e-mail :Saleem.obd@uoalhuda.edu.iq
107. Course objectives

	Study material objectives
108. strategic education learning	
At the end of the semester, students will be able to: 1- Identify the names and types of parasites that cause human diseases, their life cycles, pathogenicity, and laboratory diagnostic methods. 2- Identify the epidemiology of medical parasites, with a focus on endemic parasites in Iraq.	strategic

Course structure .109

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Theoretical (January 1st exam + February 2nd exam) Practical seminars + reports + Practical (multiple microscopic diagnosis of all parasite stages: eggs, larvae, worms, cyst stages, and spores)	+Theoretical Educational laboratories	Platyhelminthes: General characters. Class custody: General characters. Teaniasaginata:Teaniasoliu m: Morphology & the adult warm and the larval stages of each species, biology, life cycle of each species, pathology ginicity of each species, Lab. Diagnosis	Number of units: 4	2 Theoret 4 +ical practica l	1
		Hymenolepis nana, Hymenolepisdiminuta.Diplidium canine, Phyllo bathrium latum, Biology, morphology, pathogenicity of eachspecies,Lab. Diagnosis.			2
		Echinococcosis granulose. Echinococcosis multilo cularis.Biology,life cycle, pathogenicity, medical importance of hydatid cyst disease ,Lab. Diagnosis			3
		Class Trematode: General characters. Genus Schistosoma.Specis of human schist soma, life cycle. Schist soma hematobium. Schist soma mansoni.Biology of adult worm, habitat, pathgenicity,Lab.diagnosis			4
		Fascicule hepatica Biology , life cycle, pathogenicity, Lab diagnosis. Nemathelminthis. ClssNemtoda, general characters.			5
		Ascaris lambricoides Enterobius			6

		vermicularis.Biology of adult worm, lifecycle, pathogenicity and medical importance of each species, Lab. Diagnosis of each species.			
		Trichuris trichura. Trichenala spiralis.Biology , life cycle , pathogenicity, medical importance of each species, Lab Diagnosis of each species.			7
		Strogyloidesstercoralis.Biology, life cycle, pathogenicity, medical importance, Lab. Diagnosis.			8
		Ancylostomaduadenale ,Necator Americans (Hooks worm)			9
		The filarial: Biology, pathogenicity and medical importance of each species, Lab. Diagnosis of each species. Visceral larvae migrance, Cutaneous larvae migrance.			10

110. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

111. Teaching Learning Resources

Study bag prepared by the committees of deans of medical technology colleges + other curriculum books	Required curriculum books (curriculum if available)
Panikers medical parasitology	Main References (Sources)
Maccy & mcartne practical medical parasitology **Jawetze medical microbiology**	reference books (scientific journals, reports...)
Canadian Bioinformatics Workshops https://www.googleadservices.com/pagead/aclk?sa=L&ai=DChsSEwjl29nH88-OAxWpaEECHZh_FgUYACICCAEQABoCd3M&co=1&ase=2&gclid=CjwKCAjw7fzDBhA7EiwAOqJkhzjOObeunaIALnTwepSm7UEXNOuyeGtLt3hJKBdcU0SZguxv1IQBBhoC9XsQAvD_BwE&ohost=www.google.com&cid=CAESVuD2ccNi9Y8yFjNmJ-CAa6wfOjTXnIrtj6tW9KU-vvgs5Ax25mIye3TNtY2HGYCjPHmiocKqrJiuB-XHPCgQU0FHoUNucUH8DfRCHDN-t52ebBJmBeUE&category=acrcp_v1_40&sig=AOD64_1zoum7dNFWV6FCHnxrkzU_AbG1yg&q&nis=4&adurl&ved=2ahUKEwiQutTH88-OAxXPSfEDHSNCCCEQ0Qx6BAgJEAE	Electronic references, websites

112. Course name:	
Histology 2	
113. Course code:	
His_to2	
114. Semester 2	
2025 – 2026 annual	
115. Date of preparation of this description:	
2025/7/22	
116. Attendance	
Weekly - In-person - Classrooms	
117. Number of study hours (total) / Number of units (total):	
30Theoretical Hours \ 4 Units	
118. Name of course supervisor (if more than one name is mentioned):	
name : : Baraa Daoud e-mail : baraa7919@gmail.com	
119. Course objectives	
Histology is a basic tool for medical specializations. This study aims to introduce medicine to basic cell types and classify these cells according to the study of the shape of the cells that form these tissues and the basic function of these T cells that form the various tissues and organs of the human body. This is done by examining thin slices of tissue under a microscope.	Study material objectives
120. strategic education learning	
Theoretical explanation of the material with practical application	strategic
121. Course structure	

122. Course name:	
Histology 2	
123. Course code:	
His_to2	
124. semester 2	
annual 2025-2026	
125. Date of preparation of this description:	
2025/7/22	
126. attendance :	
Weekly - In-person - Classrooms	
127. Number of study hours (total) / Number of units (total):	

30Theoretical Hours \ 4 Units	
128. Name of course supervisor (if more than one name is mentioned):	
Name: Baraa Qassim Daood e-mail : baraa7919@gmail.com	
129. Course objectives	
Histology is a basic tool for medical specializations. This study aims to introduce medicine to basic cell types and classify these cells according to the study of the shape of the cells that form these tissues and the basic function of these T cells that form the various tissues and organs of the human body. This is done by examining thin slices of tissue under a microscope.	Study material objectives
130. strategic education learning	
Theoretical explanation of the material with practical application	strategic
131. Course structure	

132. course name :	
Analytical statistics	
133. course code :	
134. Semester/Annual – 2025 2026	
semester 2 3rd stage	
135. Date of preparation of this description2025/7/22:	
136. Available attendance: Weekly - In-person - Classrooms	
Weekly attendance in classrooms and practical laboratories	
137. Number of study hours (total)/Number of units (total): 30 Theoretical hours	
2 hours Theoretical + 1 hour Practical / 3 units	
138. Name of course supervisor (if more than one name is mentioned):	
name : Prof. Dr. Louay Mohammed Abdo e-mail :alanilouay7@gmail.com	
139. Course objectives	
• Gain a student's knowledge of the principles of medical genetics in the Department of Medical Laboratory Technology. • Learn about various genetic sciences in all specialties. • Conduct practical laboratory experiments to gain medical skills in dealing with various genetic fields.	Study material objectives
strategic education learning .140	

Theoretical explanation of the material with practical application.				strategic	
					Course structure .141
Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly Exams Daily Exams Seminars Reports Laboratory Exams Exam 1 Exam 2	Theoretical + practical Computer application	Probabilities And Distributions. Correlation and Regression Analysis (Concept and analysis). Hypothesis Testing: Introduction. Definition of test, level of significance, degrees of freedom, and Error type. Z-test and t-test. Chi-square test. Analysis of Variance (ANOVA). Questionnaire: Design and Analysis of Questionnaire. Final Report, Introduction, Statistical Analysis, Discussion Results.	Theoretical 2 + 2 practical	2 Theoret 4 +ical practica l	2- 1 4 – 3 6 - 5 8 -7 9 - 8 10 12-11 13 14
142. Course Evaluation					
The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.					
143. Teaching Learning Resources					
1- Professor (Dr.)Amjad Daoud Niazi:"Statistical Analysis In Medical Research" 2nd Edition ; March 2004. 2-Wayne W.Daniel: Biostatistics "Basic Concepts and Methodology for the Health Sciences" 9th Edition ;2010			Required curriculum books (curriculum if available)		
Same as above			Main References (Sources)		
Same as above			reference books (scientific journals, reports...)		
Same as above			Electronic references, websites		

144. Course name:
Histopathology 1
145. Course code:
His_pa1
146. semester 2
annual 2025-2026
147. Date of preparation of this description:
2025/7/22
148. attendance :
Weekly - In-person - Classrooms
149. Number of study hours (total) / Number of units (total):
30 Theoretical Hours \3 Units
Name of course supervisor (if more than one name is mentioned): .150
Name: Baraa Qassim Daood e-mail : baraa7919@gmail.com
151. Course objectives

• Providing medicine with a broad and modern understanding of histopathology. Establishing a solid knowledge base on histopathology and modern techniques to enable medicine to keep pace with the medical community it will be living in after graduation in hospitals.	Study material objectives

152. strategic education learning	
Theoretical explanation of the material with practical application	strategic
153. Course structure	

154. Course name: (Immunology(1))
155. Course code:
156. Class/Age 1 - 2025 2026
157. Date of preparation of this description2025/7/ 22:
158. Available attendance: Weekly - In-person - Classrooms
159. Number of study hours (total)/Number of units (total): 30 Theoretical hours

160. Name of course supervisor (if more than one name is mentioned):	
name : Dr. Hamid Mahmoud Nayefe-mail :ham83eed@gmail.com	
161. Course objectives	
• Definition of the immune system, its components, and characteristics. • Antibodies and antigens, their characteristics, and types. • Immune responses, their types, and effectiveness.	**Study material objectives**
162. strategic education learning	
Theoretical explanation of the material with practical application.	**strategic**

163. Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes Theoretical 1 +وحد 2 وحد practical	Hours 2 Theoretical 2 + practical	week
Theoretical (January exam + February exam) Practical seminars + practical exam + reports	=	Introduction of the immune system, innate and adaptive immunity	**Theoretical practical+**	**4**	**1**
	=	Cells and organs of the immune system, Haematopoiesis, phagocytosis, lymphoid tissues	**Theoretical practical+**	**4**	**2**
	=	B-cell and T-cell	**Theoretical practical+**	**4**	**3**
	=	Antigen, definition, properties, B-cell and T-cell epitopes, super antigen, haptens, and adjuvants	**Theoretical practical+**	**4**	**4**
	=	Antibody: definition, structures, classes, properties, and monoclonal Ab formation.	**Theoretical practical+**	**4**	**5**
	=	Generation of antibody diversity.	**Theoretical practical+**	**4**	**6**
	=	T- cell receptors: structure, organization, rearrangement, complementarity determining regions (CDR)	**Theoretical practical+**	**4**	**7**
	=	T-Cell Activation, Helper Subset Differentiation, and Memory.	**Theoretical practical+**	**4**	**8**
	=	B-Cell Activation, Differentiation, and Memory Generation.	**Theoretical practical+**	**4**	**9**
	=	humoral and cell-mediated immune response	**Theoretical practical+**	**4**	**10**

	=	Bacterial Immunity, anti-virulence mechanism	**Theoretical practical+**	**4**	**11**
	=	Evade Host Defense Mechanisms, and Viral Immunity, Defense Mechanisms.	**Theoretical practical+**	**4**	**12**

164. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

165. Teaching Learning Resources

	Required curriculum books (curriculum if available)
1- Immunology/ kuby .....8th ed. **2- Essentials of clinical immunology / Helen Chapel…7th ed.** **3- Practical Immunology / Hudson& Hay ..... 4th ed.**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

166. Course name: (Hematology (1))

167. Course code:

168. Semester/Annual - 1 - 2025 2026

169. Date of preparation of this description2025/7/ 23:

170. Available attendance: Weekly - In-person - Classrooms

171. Number of study hours (total)/Number of units (total): 30 Theoretical hours 3

Name of course supervisor (if more than one name is mentioned): .172

ahm1983edtahr@gmail.com :Ahmed Zaher Abdele-mail : name

Course objectives .173

• Providing a broad and modern understanding of hematology, the normal and abnormal ranges of blood components, and the changes that occur with various diseases.	**Study material objectives**

Establishing a solid knowledge base about hematology to enable medicine to keep pace with the medical community it will be living in after graduation in hospitals.	
174. strategic education learning	
Theoretical explanation of the material with practical application.	**strategic**

175. Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes Theoret + 2 ical 1 practical	Hours 2 Theore +tical 2 practical	week
Theoretical (January exam + February exam) Practical seminars + practical exam + reports		Blood collection	**Theoretical + practical**	**4**	**1**
		Anticoagulant	**Theoretical + practical**	**4**	**2**
		Normal value of all blood components according to age	**Theoretical + practical**	**4**	**3**
		Hb estimation by different methods	**Theoretical + practical**	**4**	**4**
		Packed cell volume PCV	**Theoretical + practical**	**4**	**5**
		RBCs count (manual) and automated RBCs count	**Theoretical + practical**	**4**	**6**
		Red cell indices MCV , MCH ,	**Theoret**	**4**	**7**

		MCHC	**ical + practical**		
		Blood film preparation	**Theoretical + practical**	**4**	**8**
		Study of red cell morphology in health and disease	**Theoretical + practical**	**4**	**9**
		Inclusion bodies in red blood cells	**Theoretical + practical**	**4**	**10**
		Osmotic fragility test and reticulocyte count	**Theoretical + practical**	**4**	**11**
		Sickle cell test	**Theoretical + practical**	**4**	**12**
		Hb electrophoresis	**Theoretical + practical**	**4**	**13**
		Erythrocyte sedimentation rate	**Theoretical + practical**	**4**	**14**
		Revision	**Theoretical + practical**	**4**	**15**
176. Course Evaluation					
Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.					
177. Teaching Learning Resources					
	Required curriculum books (curriculum				

	if available)
1. Hoffbrand's essential hematology. A.VictorHoffbrand and Paul A.H. Moss , 7th edition , Wiley Blackwell (2016). **2. Hematology in clinical practice. Roberts. S. Hillman and Kenneth A , 5th edition , McGraw Hill Lange medical books (2011).**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

178. course name :					
Medical Genetics 1					
179. course code :					
180. Semester/Annual – 2025 2026					
Semester – 3rd stage					
181. Date of preparation of this description2025/7/22:					
182. Available attendance: Weekly - In-person - Classrooms					
Weekly attendance in classrooms and practical laboratories					
183. Number of study hours (total)/Number of units (total): 30 Theoretical hours					
2hours Theoretical + 4 hours Practical / 4 units					
184. Name of course supervisor (if more than one name is mentioned):					
alanilouay7@gmail.com :e-mail Prof. Dr. Louay Mohammed Abdo : name					
185. Course objectives					
• Gain a student's knowledge of the principles of medical genetics in the Department of Medical Laboratory Technology. • Learn about various genetic sciences in all specialties. • Conduct practical laboratory experiments to gain medical skills in dealing with various genetic fields.				Study material objectives	
186. strategic education learning					
Theoretical explanation of the material with practical application.				strategic	
				Course structure .187	
Evaluation method	Learning method	Name of unit or topic	Required Learning	Hours	week

			Outcomes		
Monthly Exams Daily Exams Seminars Reports Laboratory Exams Exam 1 Exam 2	Theoretical + practical Computer application	Introduction Cell division Cell cycle Chromosomes Chromatin Chromosome replication Chromosomal abnormalities Genetic diseases Family pedigree Mendel's laws Dominant inheritance Recessive inheritance The genetic basis of sex linked inheritance Another type of gene inheritance	+ 2 Theoretical practical 2	2 Theoret 4 +ical practica l	1 2 4 4 5 6 7 8 9 10 11 12 13

188. Course Evaluation

The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.

189. Teaching Learning Resources

Thompson & Thompson, Genetics in Medicine, Eighth edition,2017 Jorde,L.B.;Carey,J.C&Bamshad,M.J.(2019).Medical genetics. Sixth Edition.	Required curriculum books (curriculum if available)
Same as above	Main References (Sources)
Same as above	reference books (scientific journals, reports...)
Same as above **https://archive.org/details/thompsonthompsongeneticsinmedicine8**	Electronic references, websites

190. course name :
Medical viruses
191. course code :
192. Semester/Annual – 2025 2026
semester 2nd stage
193. Date of preparation of this description2025/7/22:
194. Available attendance: Weekly - In-person - Classrooms
Weekly attendance in classrooms and practical laboratories
195. Number of study hours (total)/Number of units (total): 30 Theoretical hours
2 hours Theoretical + 4 hours Practical / 4 units
196. Name of course supervisor (if more than one name is mentioned):
name : Dr. Ali Sami e-mail :alisamimicrobiology@gmail.com
197. Course objectives

• Gain a basic understanding of medical virology in the Medical Laboratory Technology Department. • Learn about various human pathogenic viruses. • Conduct practical laboratory experiments to gain medical skills in dealing with various viral-related activities.	Study material objectives

198. strategic education learning	
Theoretical explanation of the material with practical application.	strategic

199. Course structure

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly Exams Daily Exams Seminars Reports Laboratory Exams Exam 1	Theoretical + practical	General properties of Viruses, Structure , Classification , Atypical Virus –like agent (Prion ,Defective viruses, Pseudovirion , Viroid's). .Bacteriophage Viral Replication , Viral Genetic ,Viral Pathogenesis, Laboratory Diagnosis, viral immunity Enveloped DNA viruses (Herpes		2 Theoretical 4 + practical	2 1 week 4 و 3 week 6 و 5 week 7 week

Exam 2		viruses , Pox viruses) Non Enveloped DNA viruses(Adeno and Parvo viruses) Hepatitis viruses Human Immune Deficiency virus Orthomyxo viruses Paramyxoviruses Corona viruses , Rabies virus Non Enveloped RNA (Rota, polio) , Oncogenic viruses Antiviral drugs , viral vaccine			8 week 9 week 10 week 11 week 12 week 1314 week 15 week

Course Evaluation .200
The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.

Teaching Learning Resources .201	
1- Christopher J. Burrell, Colin R. Howard and Frederick A. Murphy . Text book of Medical Virology, Fifth Edition (2016) 2- L. R. Haaheim, J. R. Pattison, and R. J. Whitley.A Practical Guide .(2002) to Clinical Virology. Second edition	Required curriculum books (curriculum if available)
Same as above	Main References (Sources)
Same as above	reference books (scientific journals, reports...)
Same as above	Electronic references, websites

202. course name :
Medical Genetics 2
203. course code :
204. Semester/Annual – 2025 2026
semester 2nd stage
205. Date of preparation of this description2025/7/22:

206. Available attendance: Weekly - In-person - Classrooms
Weekly attendance in classrooms and practical laboratories
207. Number of study hours (total)/Number of units (total): 30 Theoretical hours
2hours Theoretical + 4 hours Practical / 4 units
208. Name of course supervisor (if more than one name is mentioned):
Prof. Dr. Louay Mohammed Abdo : name alanilouay7@gmail.com :e-mail
209. Course objectives

Study material objectives	• Gain a student's knowledge of the principles of medical genetics in the Department of Medical Laboratory Technology. • Learn about various genetic sciences in all specialties. • Conduct practical laboratory experiments to gain medical skills in dealing with various genetic fields.

210. strategic education learning	
Theoretical explanation of the material with practical application.	strategic

Course structure .211

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly Exams Daily Exams Seminars Reports Laboratory Exams Exam 1 Exam 2	Theoretical + practical Computer application	Mutation Mutagens Single nucleotide polymorphism Identifying diseases gene Oncogenes Tumor suppressor gene The genetic of cancer Classification of genetic disease genetic counselling Gene therapy Immune genetics Stem cell technology Prenatal diagnosis Human genome project microRNA	+ 2 Theoretical practical 2	2 Theoret 4 +ical practica l	1 2 ثث 4 5 6 7 8 9 10 11 12 13

					14 15

212. Course Evaluation	
The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.	
213. Teaching Learning Resources	
Thompson & Thompson, Genetics in Medicine, Eighth edition,2017 Jorde, L.B.; Carey, J.C., & Bamshad, M.J.(2019).Medical genetics. Sixth Edition,	Required curriculum books (curriculum if available)
Same as above	Main References (Sources)
Same as above	reference books (scientific journals, reports...)

214. course name :
Analytical statistics
215. course code :
216. Semester/Annual – 2025 2026
Chapter 2 / Third Stage
217. Date of preparation of this description2025/7/22:
218. Available attendance: Weekly - In-person - Classrooms
Weekly attendance in classrooms and practical laboratories
219. Number of study hours (total)/Number of units (total): 30 Theoretical hours
2hours Theoretical + 1 hour Practical / 3 units
220. Name of course supervisor (if more than one name is mentioned):
alanilouay7@gmail.com :e-mail Prof. Dr. Louay Mohammed Abdo : name
221. Course objectives

• Gain a student's knowledge of the principles of medical genetics in the Department of Medical Laboratory Technology. • Learn about various genetic sciences in all specialties. • Conduct practical laboratory experiments to gain medical skills in dealing with various genetic fields.	Study material objectives
222. strategic education learning	
Theoretical explanation of the material with practical application.	strategic

223. Course structure					
Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly Exams Daily Exams Seminars Reports Laboratory Exams Exam 1 Exam 2	Theoretical + practical Computer application	Probabilities And Distributions. Correlation and Regression Analysis (Concept and analysis). Hypothesis Testing: Introduction. Definition of test, level of significance, degrees of freedom, and Error type. Z-test and t-test. Chi-square test. Analysis of Variance (ANOVA). Questionnaire: Design and Analysis of Questionnaire. Final Report, Introduction, Statistical Analysis, Discussion Results.	Theoretical + 2 2practical	2 Theoretical 4 + practical	2- 1 3 4 6 - 5 8 -7 9 - 8 10 12-11 13 14

224. Course Evaluation
The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.

225. Teaching Learning Resources	
1- Professor (Dr.)Amjad Daoud Niazi:"Statistical Analysis In Medical Research" 2nd Edition ; March 2004. 2-Wayne W.Daniel: Biostatistics "Basic Concepts and Methodology for the Health Sciences" 9th Edition ;2010	Required curriculum books (curriculum if available)
Same as above	Main References (Sources)
Same as above	reference books (scientific journals, reports...)
Same as above	Electronic references, websites

226. Course name: (Blood transfusion)					
227. Course code:					
228. Semester/Annual - 1 - 2025 2026					
229. Date of preparation of this description2025/7/ 22:					
230. Available attendance: Weekly - In-person - Classrooms					
231. Number of study hours (total)/Number of units (total): 30 Theoretical hours 4 units					
232. Name of course supervisor (if more than one name is mentioned):					
ahm1983edtahr @gmail.com :Dr. Hamid Mahmoud Nayefe-mail : name					
Course objectives .233					
Study material objectives					
• To provide a comprehensive overview of what happens during blood transfusion and blood donation, and diseases acquired through blood transfusion. • Blood transfusion • 1- Providing medicine with information on blood transfusion practices and how to store transfused blood samples. • 2- Providing medicine with theoretical and practical information on the practicalities of separating blood components, such as plasma, platelets, and clotting factors. • 3- Providing theoretical information on techniques for handling stored blood samples in hospitals.					
234. strategic education learning					
Theoretical explanation of the material with practical application.					**strategic**
235. Course structure					
Evaluation method	**Learning method Theoretical + practical**	**Name of unit or topic**	**Required Learning Outcomes Theoret 2 ical**	**Hours 2 Theore +tical 2 practical**	**week**

			وحد+ 1 وحد practical		
Theoretical (January exam + February exam) Practical seminars + practical exam + reports		Introduction of blood transfusion	**Theoretical + practical**	**4**	**1**
		Criteria of Donor Selection	**Theoretical + practical**	**4**	**2**
		Services of Blood bank	**Theoretical + practical**	**4**	**3**
		Screening Measures of Recipient Protection	**Theoretical + practical**	**4**	**4**
		ABO Typing Discrepancies Types of Anticoagulants	**Theoretical + practical**	**4**	**5**
		Anti-Human Globulins	**Theoretical + practical**	**4**	**6**
		Homeostasis & bleeding disorders	**Theoretical + practical**	**4**	**7**
		Autologous Blood transfusion	**Theoretical + practical**	**4**	**8**
		Acute & Delayed hemolytic reaction	**Theoretical + practical**	**4**	**9**
		Hemolytic Anemia \Hemolytic	**Theoret**	**4**	**10**

		disease of Newborn	**ical + practical**		
		Complications of blood transfusion	**Theoretical + practical**	**4**	**11**
		Lymph cytotoxicity cross match Histocompatibility Testing	**Theoretical + practical**	**4**	**12**
=		Laboratory tests for infectious diseases \ Comb's test	**Theoretical + practical**	**4**	**13**
					Course Evaluation .236

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

237. Teaching Learning Resources

Required curriculum books (curriculum if available)	
Main References (Sources)	**1.** Harvey G. Klein (2014): Mollison's Blood Transfusion in clinical Medicine , 12th edition. **2.** Christopher D. Hillyer (2007). Blood Banking and Transfusion Medicine: Basic Principles & Practice. Elsevier Health Sciences. **3.** Kilduffe R, DeBakey M (1942). The blood bank and the technique and therapeutics of transfusion. St. Louis: The C.V.Mosby Company. pp. 196–97. **4.** "The History of Blood Ttansfusion". British Journal of Haematology. **110**: 758–67. 2001. doi:10.1046/j.1365-2141.2000.02139.x. PMID 1105405

7 **5.** Marik PE, Corwin HL (2008). "Efficacy of red blood cell transfusion in the critically ill: a systematic review of the literature". Crit Care Med. **36**: 2667–74. *doi:10.1097/ccm.0b013e3181844677*	
	reference books (scientific journals, reports...)
	Electronic references, websites

238. Course name: (Immunology(2)
239. Course code:
240. Semester/Annual - 1 - 2025 2026
241. Date of preparation of this description2025/7/ 22:
242. Available attendance: Weekly - In-person - Classrooms
243. Number of study hours (total)/Number of units (total): 30 Theoretical hours 5
244. Name of course supervisor (if more than one name is mentioned):
name : Dr. Hamid Mahmoud Nayefe-mail :ham83eed@gmail.com
245. Course objectives

•The nature of the components of the immune system, their characteristics, diversity, and function. **•Vaccine culture** **•Diseases associated with the immune system.**	**Study material objectives**
246. strategic education learning	
Theoretical explanation of the material with practical application.	**strategic**

247. Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes Theoret + 2 ical 1 practical	Hours 2 Theoretical + 2 practical	week
Theoretical (January exam + February exam) Practical seminars + practical exam + reports		Complement: definition, activation, type of activation, complement deficiency, proper din.	**Theoretical + practical**	**4**	**1**
		MHC: definition, types, Antigen Presentation and Processing,	**Theoretical + practical**	**4**	**2**
		Cytokines & Mediators.	**Theoretical + practical**	**4**	**3**
		Hypersensitivity: types, and	**Theoretical + practical**	**4**	**4**
		diseases that are caused by hypersensitivity.	**Theoretical + practical**	**4**	**5**
		Tolerance: Central and peripheral, mechanisms, Energy	**Theoretical**	**4**	**6**

			+ **practical**		
		Autoimmunity: definition, mechanisms, types.	**Theoretical + practical**	**4**	**7**
		Transplantation: Introduction, types of graft rejection,	**Theoretical + practical**	**4**	**8**
		immunosuppressive therapy of allograft rejection, immunology of xenogeneic transplantation, and organ transplantation.	**Theoretical + practical**	**4**	**9**
		Vaccines & Vaccination, definition, types, advantages & disadvantages	**Theoretical + practical**	**4**	**10**
		Immune deficiencies: types, primary and secondary Immunodeficiency.	**Theoretical + practical**	**4**	**11**
		Tumor, Anti–tumor immunity, types, immune defense against	**Theoretical + practical**	**4**	**12**

248. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

249. Teaching Learning Resources

	Required curriculum books (curriculum if available)
1. Immunology/ kuby .....8th ed. **2. Essentials of clinical immunology / Helen Chapel….7th ed.** **3. Practical Immunology / Hudson& Hay ..... 4th ed.**	**Main References (Sources)**
	reference books (scientific journals, reports...)

	Electronic references, websites

250. Course name (Hematology (2)

251. Course code:

252. Semester/Annual - 1 - 2025 2026

253. Date of preparation of this description2025/7/ 23:

254. Available attendance: Weekly - In-person - Classrooms

255. Number of study hours (total)/Number of units (total): 30 Theoretical hours 3

256. Name of course supervisor (if more than one name is mentioned):

name : Ahmed Zaher Abdel e-mail :ahm1983edtahr@gmail.com

257. Course objectives

• Providing a broad and modern understanding of hematology, the normal and abnormal ranges of blood components, and the changes that occur with various diseases. **• Establishing a solid knowledge base about hematology to enable medicine to keep pace with the medical community it will be living in after graduation in hospitals.**	**Study material objectives**

258. strategic education learning

Theoretical explanation of the material with practical application.	**strategic**

259. Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes Theoret 2 ical 1 +وحد وحد	Hours 2 Theore +tical 2 practical	week

			practical		
Theoretical (January exam + February exam) Practical seminars + practical exam + reports		Leukocytes (white blood cells)	**Theoretical + practical**	**4**	**1**
		Leukocytes disorder	**Theoretical + practical**	**4**	**2**
		Leukemia	**Theoretical + practical**	**4**	**3**
		Acute leukemia	**Theoretical + practical**	**4**	**4**
		Chronic leukemia	**Theoretical + practical**	**4**	**5**
		Hodgkin's lymphoma	**Theoretical + practical**	**4**	**6**
		Non-Hodgkin's lymphoma	**Theoretical + practical**	**4**	**7**
		Platelets & platelet disorders	**Theoretical + practical**	**4**	**8**
		Hemostasis	**Theoretical + practical**	**4**	**9**
		Bleeding disorders	**Theoretical**	**4**	**10**

			+ **practical**		
		Thrombosis (arterial & venous thrombosis)	**Theoretical + practical**	**4**	**11**
		Multiple myeloma	**Theoretical + practical**	**4**	**12**
		ABO system	**Theoretical + practical**	**4**	**13**
		Blood transfusion	**Theoretical + practical**	**4**	**14**
		Complications of blood transfusion	**Theoretical + practical**	**4**	**15**

260. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

261. Teaching Learning Resources

	Required curriculum books (curriculum if available)
1. Hoffbrand's essential hematology. A.VictorHoffbrand and Paul A.H. Moss , 7th edition , Wiley Blackwell (2016). **2. Hematology in clinical practice. Roberts. S. Hillman and Kenneth A , 5th edition , McGraw Hill Lange medical books (2011).**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

262. Course name: (Clinical Immunology2)	
263. Course code:	
264. Semester/Annual - 1 - 2025 2026	
265. Date of preparation of this description2025/7/ 22:	
266. Available attendance: Weekly - In-person - Classrooms	
267. Number of study hours (total)/Number of units (total): 30 Theoretical hours 4	
268. Name of course supervisor (if more than one name is mentioned):	
ham83eed@gmail.com :Dr. Hamid Mahmoud Nayefe-mail : name	
269. Course objectives	
	Study material objectives
270. strategic education learning	
Theoretical explanation of the material with practical application.	**strategic**

271. Course structure

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes Theoretical 2 units + 1 unit practical	Hours 2 Theore+tical 2 practical	week
Theoretical (January exam + February exam) Practical		I. Endocrine Diseases 1. Hashimoto's Thyroiditis 2.Graves' Disease	**Theoretical + practical**	**4**	**1**

seminars + practical exam + reports					
		2. Insulin-Dependent & Non-dependent Diabetes Mellitus Addison's Disease	**Theoretical + practical**	**4**	**2**
		III. Hypersensitivity Diseases	**Theoretical + practical**	**4**	**3**
		Asthma	**Theoretical + practical**	**4**	**4**
		Allergic Rhinitis (AR).	**Theoretical + practical**	**4**	**5**
		Atopic Dermatitis (AD).3	**Theoretical + practical**	**4**	**6**
		4.Contact Dermatitis	**Theoretical + practical**	**4**	**7**
		III. Respiratory Diseases 1.Drug-induced Respiratory Diseases	**Theoretical + practical**	**4**	**8**
		2. Eosinophilic Pneumonias	**Theoretical + practical**	**4**	**9**
		3.Occupational & Environmental Lung Diseases	**Theoretical + practical**	**4**	**10**

	=	Tumor immunology: Oncogene and cancer induction, Tumor anti gens, Immune response to tumors, relation between tumor Type and nature of immune response ;Angiogen esisandtumor metastasis; anti-tumor drug resistance; immunotherapy;	**Theoretical + practical**	**4**	**11**
	=	Transplantation immunology ,immune therapy and Regenerative medicine: Types ,mechanism of transplanted jection,prevention of graft rejection. Antigen and antibodies in blood, concept of titer. Concept of blood groups and its principle(ABO group ,Rh-typing an dMN group).Condition for blood transfusion. Basic principle followed for blood transfusion.	**Theoretical + practical**	**4**	**12**
	=	IV Blood Disorders 1.Autoimmune Hemolytic Anemia 2.Warm & Cold Agammaglobulinemic Hodgkin & Non- lymphoma	**Theoretical + practical**	**4**	**13**
=	=	5. Acute & Chronic Leukemia	**Theoretical + practical**	**4**	**14**
	=	6. Lymphoid & Myeloid leukemia	**Theoretical + practical**	**4**	**15**

272. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

273. Teaching Learning Resources

	Required curriculum books (curriculum if available)
Chapel and Haeney's Essentials of Clinical Immunology, 7th Edition, Siraj A. Misbah, Gavin P. Spickett, Virgil A.S.H. Dalm, 2023. **Clinical Immunology: Principles and Practice 5th Edition,2018, by Robert R. Rich MD (Author), Thomas A. Fleisher MD**	**Main References (Sources)**

FAAAAI FACAAI (Author), William T. Shearer MD PhD (Author), Harry Schroeder (Author), Anthony J. Frew MD FRCP (Author), Cornelia M. Weyand MD PhD (Author)	
	reference books (scientific journals, reports...)
	Electronic references, websites

Course Description Form

1. Course Name:
Descriptive Biostatistics
2. Course Code:
3. Semester / Year:
First -2025-2026
4. Description Preparation Date:
19/7/2025
5. Available Attendance Forms:
Yes
6. Number of Credit Hours (Total) / Number of Units (Total)
30 hrs./ 3 units per hour
7. Course administrator's name (mention all, if more than one name)
Name: Professor Louay Al-Ani Email: alanilouay7@gmail.com
8. Course Objectives

Course Objectives	-Provided students in the Department of Medical Laboratory Technology with skills in biostatistics. - Knowledge of global biostatistics centers and their associated databases. - Training students to be able to solve statistical problems.
9. Teaching and Learning Strategies	
Strategy	Theoretical and practical (tasks assigned to the student, such as daily preparation, daily oral, and reports).

10. Course Structure

Week	Hours	Required	Unit or subject name	Learni	Evaluation

		Learning Outcomes		ng metho d	method
1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th	2hrs. Theoretical 1 hour practical		Definition of Biostatistics, ty of data, types of Variables, Sources of data. Methods of data collection sampling types. Numerical methods presentation of data. Graphical methods presentation of data Mathematical methods presentation of data Central Tendency Percentiles, Quartiles Interquartile Range. Moments, Skewness, Kurtosis. Elementary Probability Theory Application of types of data, types of Variables, and Sources of data. Application of Data Collection and Sampling Types. Application of Numerical methods in the presentation of data. Application of Graphical methods of presentation of data Application of Mathematical methods in the presentation of data Application of Measures of Dispersion Coefficient of Variation, Standard Errors Application of Percentiles, Quartiles, and Interquartile	Lectures	2Written Exams Homework and Short exams 2practical exams

16th			Range. Skewness and Kurtosis Application of Elementary		

11. Course Evaluation

Two theoretical written exams, both worth 20 /100, and two practical exams worth 7/100, and five theoretical short exams worth 5/100. Five short exams and five HomeWorks worth 8/100. The Final exam is divided into 35/100 for the theoretical and 25/100 for the practical total =100

12. Learning and Teaching Resources

BIOSTATISTICS -A Foundation for Analysis
In the Health Sciences by WAYNE W. DANIEL and CHAD L. CROSS, 3rd edition,2013.

Main references (sources):

1-BIOSTATISTICS -A Foundation for Analysis
In the Health Sciences by WAYNE W. DANIEL and CHAD L. CROSS, 3rd edition,2013.

2- A handout of Practical Descriptive Biostatistics. Will be supplied by Instructor.

Recommended books and references (scientific journals, reports...):

1-BIOSTATISTICS -A Foundation for Analysis
In the Health Sciences by WAYNE W. DANIEL and CHAD L. CROSS, 3rd edition,2013.

Electronic References,

https://faculty.ksu.edu.sa/sites/default/files/145_stat_-_textbook.pdf

https://cbpbu.ac.in/userfiles/file/2020/STUDY_MAT/ZOO/PK%20(2).pdf

274.	**Course name: Biology 2**
275.	**Course code:**
276.	**Semester/Annual - 1 - 2024 2025**
277.	**Date of preparation of this description2025/7/ 22:**
278.	**Available attendance: Weekly - In-person - Classrooms**
279.	**Number of study hours (total) / Number of units (total):7**
280.	**Name of course supervisor (if more than one name is mentioned):**
	alibiobio40@gmail.com **:Ali Ibrahim Eidane-mail : name**
281.	**Course objectives**

To be familiar with the basic concepts of scientific material and its theoretical and practical foundations to increase the efficiency and effectiveness of laboratory management in accordance with the department's objectives.	**Study material objectives**
282. strategic education learning	
Structured interactive discussion **- Scientific statement** **- Collaborative learning** **- Problem solving** **- Simulation** **- Brainstorming** **- Role-playing** **- Collaborative workshops**	**strategic**
283. Course structure	

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes practical	Hours 2 Theore +tical 2 practical	week
Tests Theoretical practical	**Theoretical + practical**	Harm full Activity of Bacteria Bacterial Diseases in Human and Animals, Control of bacteria	practical	**7**	**1**
Tests Theoretical practical	**Theoretical + practical**	Kingdom OF Protista, Simple Algae.,	**Application study practical**	**7**	**2**
	=	Kingdom of Protista, Protozoans, Protozoa of Classification	=	**7**	**3**
	=	The Kingdom of Living Things Classification of Organisms, Categories of Classification of Organisms, The five Kingdom Scheme Of Classification	=	**7**	**4**
	=	Phylum of Sarcodina, Amoebas, Phylum of Zoomastigina, Trypanosoma, Giardia	=	**7**	**5**
	=	Atopic Dermatitis (AD Cell .3 Structure and Function, Animal cells. Cell Wall, Cell Membrane, Cytoplasmic Matrix, Nucleolus)	=	**7**	**6**
	=	Phylum ,Sporozoa .plasmodium .	=	**7**	**7**
	=	Kingdom of Fungi, Classification,	=	**7**	**8**

		Reproduction			
	Theoretical + practical	Harmful sctivity of fungi	=	**7**	**9**
	Theoretical + practical	Yeast and Yeast Like Fungi, Characteristic and Classification,	=	**7**	**10**
	Theoretical + practical	Kingdom of Animals, Classification, Invertebrates and Vertebrates Importance to Human Diseases	=	**7**	**11**
	Theoretical + practical	Human Bodies, Protection, Support Locomotion	=	**7**	**12**
	=	Human Body Defense (Immunity, Antigen, Antibody), Hormones, Enzymes	=	**7**	**13**
Tests Theoretical practical	=	Helminths, Characteristics and Classification	=	**7**	**14**
	=	Kingdom OF Monera: Phylum Schizothyme (Bacteria), Classification Structure, Morphology., Growth and Function, Motility	=	**7**	**15**

Course Evaluation .284

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

285. Teaching Learning Resources

	Required curriculum books (curriculum if available)
Biology 25: Human Biology: Prof. Gonzales Los Angeles City College Loosely Based on Madder's Human Biology **(Author)**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

286. Course name :Anatomy
287. Course code:
288. Semester/Age-1 – 2024 2025
289. Date of preparation of this description2025/7/ 22:
290. Available attendance: Weekly - In-person - Classrooms
291. Number of study hours (total)/Number of units (total): 30 Theoretical 4 hours
292. Name of course supervisor (if more than one name is mentioned):
name : Ali Ibrahim Eidane-mail :alibiobio40@gmail.com
293. Course objectives

To gain a comprehensive understanding of human anatomy at a macroscopic level and in the field of medicine. To acquire knowledge of anatomy based on body systems in general. To explain the details of body organs, anatomical positions, and to identify the basic anatomical characteristics of the kidneys and urinary system.	**Study material objectives**
294. strategic education learning	
Structured, interactive discussion **- Scientific statement** **- Collaborative learning** **- Problem solving** **- Simulation** **- Brainstorming**	**strategic**
295. Course structure	

Evaluation method	Learning method Theoretical + practical	Name of unit or topic	Required Learning Outcomes practical	Hours 2 Theore +tical 2 practical	week
Tests Theoretical practical	**Theoretical + practical**	Introduction to Anatomy	practical	**4**	1
Tests Theoretical	**Theoretical + practical**	Tissues and membranes	**Application study practical**	**4**	2

practical	=	Body regions Upper limb ,lower limb ,thorax	=	**4**	**3**
	=	Abdomen ,pelvis ,head and neck	=	**4**	**4**
	=	Body systems :Musculoskeletal system: Bones ,joints and muscles	=	**4**	**5**
	=	Digestive system: Digestive tract ,Accessories and glands	=	**4**	**6**
	=	lymphatic system.	=	**4**	**7**
	=	Respiratory system	=	**4**	**8**
	Theoretical + practical	Nervous system: central nervous system ,peripheral nervous system	=	**7**	**9**
	Theoretical + practical	Endocrine system .	=	**7**	**10**
	Theoretical + practical	Special senses	=	**7**	**11**
	Theoretical + practical	Urinary system	=	**7**	**12**
	=	Axilla -Brachial Plexus	=	**7**	**13**
Tests Theoretical practical	=	Special senses	=	**7**	**14**
	=	The pelvic girdle ,Hip bones: Iliac bone, Ischial bone,. Pubic bone ,The acetabulum ,The obturator foramen., Morphology., Growth and Function, Motility	=	**7**	**15**

296. Course Evaluation

Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.

297. Teaching Learning Resources

	Required curriculum books (curriculum if available)
Atlas of Anatomy **Atlas of Anatomy fourth edition**	**Main References (Sources)**
	reference books (scientific journals, reports...)
	Electronic references, websites

298. course name :

General Chemistry

299. course code BIOT :
300. Semester/Annual – 2025 2026
Chapter 2 / Stage 1
301. Date of preparation of this description2025/7/22:
302. Available attendance: Weekly - In-person - Classrooms
Weekly attendance in classrooms and practical laboratories
303. Number of study hours (total)/Number of units (total): 30 Theoretical hours
2 hours Theoretical + 2 hours Practical / 4 units
Name of course supervisor (if more than one name is mentioned): .304
aso_kak@uoanbar.edu.iq :Prof. Assam Abbas Faisale-mail : name

305. Course objectives	
• Gain a basic understanding of general chemistry in the Medical Laboratory Technology Department. • Learn about various chemistry disciplines in all specializations. • Conduct practical laboratory experiments to gain medical skills in handling chemical materials to conduct various experiments.	Study material objectives

306. strategic education learning	
Theoretical explanation of the material with practical application.	strategic

Course structure .307

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly exams Daily exams Seminars Reports Laboratory exams	Theoretical + practical computer application	Sugars and Their Definitions Classification and Functions of Sugars Lips and Their Definitions Classification and Functions of Lipids Amino Acids and Their Properties Functions and Classification of Lipids Exam	Theoretical 2+ 1practical	Theoretical 2 + practical	1 2 3 4 5 6 7 8 9

		Nucleic Acids and Their Definitions Functions and Classification of Nucleic Acids Enzymes Vitamins Nanotechnology			10 11 12

308. Course Evaluation	
Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.	
309. Teaching Learning Resources	
Lippincotts **biochemistry**	Required curriculum books (curriculum if available)
1. Harpers biochemistry **2. martin biochemistry**	Main References (Sources)
1. general Chemistry **2. chemical basis of life**	reference books (scientific journals, reports...)
	Electronic references, websites
310. course name ：	
Descriptive biology statistics	
311. course code :	
312. Semester/Annual – 2025 2026	
Chapter 1 / Stage 2	
313. Date of preparation of this description2025/7/22:	
314. Available attendance: Weekly - In-person - Classrooms	
Weekly attendance in classrooms and practical laboratories	
315. Number of study hours (total)/Number of units (total): 30 Theoretical hours	
2 hours Theoretical + 1 hour Practical / 3 units	
316. Name of course supervisor (if more than one name is mentioned	
name : Prof. Dr. Louay Mohammed Abdo e-mail :alanilouay7@gmail.com	

317. Course objectives	
• Gain a student in the Medical Laboratory Technology Department the basics of biostatistics. • Learn the various basics of descriptive statistics. • Conduct practical laboratory exercises to gain medical skills in dealing with various basic statistical activities.	Study material objectives
318. strategic education learning	
Theoretical explanation of the material with practical application.	strategic

Course structure .319

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly exams Daily exams Seminars Reports Laboratory Exams Exam 1 Exam 2	Theoretical + practical Computer application	Definition of Biostatistics, types of data, types of Variables, and Sources of data. Methods of data collection and sampling types. Numerical methods of presentation of data. Graphical methods of presentation of data Mathematical methods of presentation of data:(1) Measures of Central Tendency (Arithmetic Mean, Median, Mode). Measures of Non-Central location(Percentiles, Quartiles). Measures of Dispersion(Range, Variance, Standard Deviation) of ungroup and group data. Coefficient of Variation , Standard Errs (10-11) Percentiles, Quartiles and Interquartile Rang. (12-13) Moments, Skewness measurement and Kurtosis Measurement. (14-15) Elementary Probability Theory	Theoretical + 2 2practical	Theoretical 4 + practical 2	1 2 3 4 7 - 5 9 - 8 11 -10 13 – 12 15- 14

320. Course Evaluation	
The effort grades are distributed over two monthly theoretical exams and two practical exams, along with short exams and attendance reports.	
321. Teaching Learning Resources	
1- Professor (Dr.) Amjad Daoud Niazi:"Statistical Analysis In Medical Research" 2nd Edition ; March 2004. Wayne W.Daniel: Biostatistics "Basic Concepts -2 and Methodology for the Health Sciences" 9th Edition ;2010	Required curriculum books (curriculum if available)
Same as above	Main References (Sources)
Same as above	reference books (scientific journals, reports...)
Same as above	Electronic references, websites
322. course name :	
General Chemistry	
323. course code BIOT :	
324. Semester/Annual – 2025 2026	
Chapter 2 / Stage 2	
325. Date of preparation of this description2025/7/22:	
326. Available attendance: Weekly - In-person - Classrooms	
Weekly attendance in classrooms and practical laboratories	
327. Number of study hours (total)/Number of units (total): 30 Theoretical hours	
2hours Theoretical + 4 hours Practical / 4 units	
328. Name of course supervisor (if more than one name is mentioned):	
name : Prof. Assam Abbas Faisal : aso_kak@uoanbar.edu.iq e-mail	
	Course objectives .329
• Gain a degree in the Medical Laboratory Technology Department, learning the principles of life chemistry. • Learn about various chemistry disciplines in all specializations. • Conduct practical laboratory experiments to gain medical skills in handling chemical materials to conduct various experiments.	Study material objectives

330. strategic education learning					
Theoretical explanation of the material with practical application.				strategic	
Course structure .331					
Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Monthly exams Daily exams Seminars Reports Laboratory exams	Theoretical + practical computer application	Hormones Classification of Hormones Hormonal Metabolism Proteins Fat Metabolism Fat Oxidation Purine Metabolism Elements and Their Metabolism Exam Classification of Elements Absorption and Functions of Elements Nucleotide Metabolism DeNovo Pathway Rescue Pathway	+ 2 Theoretical practical 2	2 Theoret 4 +ical practica l	1 2 3 4 5 6 7 8 9 10 11 12
Course Evaluation .332					
Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.					
Teaching Learning Resources .333					
Lippincott's **biochemistry**			Required curriculum books (curriculum if available)		
1. Harpers biochemistry **2. martin biochemistry**			Main References (Sources)		
1. general Chemistry **2. chemical basis of life**			reference books (scientific journals, reports...)		
-----			Electronic references, websites		

1. course name: (Diagnostic medical parasitology)
2. Course code: DMP
3. Semester 1 - Stage 4 - Academic Year 2024-2025
4. Date of preparation of this description: 22-7-2025
5. Available attendance: Weekly - In-person - Classrooms
Available attendance: Weekly - In-person - Classrooms
6. Number of study hours (total) / Number of units (total): 30 Theoretical hours
7. Name of course supervisor (if more than one name is mentioned):
Saleem.obd@uoalhuda.edu.iq :Asst. Prof. Dr. Salim Obaid Katea Mawlae-mail : name
8. Course objectives

General Objective: By the end of the semester, students will be able to recognize and diagnose various types of pathogenic parasites. Specific Objective: 1. Study the classification patterns specific to each genus of pathogenic parasites. 2. Study laboratory diagnostic methods specific to each genus, including molecular serological methods. 3. Study the pathological significance of the genus' prevalent pathologies in Iraq.	Study material objectives

9. Teaching and learning strategies

Theoretical and practical explanation of the material, with emphasis on diagnosing parasites in all their stages (eggs, larvae, and adult parasites) under a microscope.	strategic

9. Course structure

Evaluation method	Learning method	Name of unit or topic	Required Learning Outcomes	Hours	week
Theoretical (January 1st	+Theoretical Educational laboratories	Recent classification of parasite * Systematic	Number of units: 4	2 Theoret 4 +ical	1

exam + February 2nd exam) Practical seminars + reports + Practical (multiple microscopic diagnosis of all parasite stages: eggs, larvae, worms, cyst stages, and spores)		grouping of parasites* General terms used in parasitology Introduction; Parasites; Host; Zoonosis; Host-parasite Relationships 3; Life Cycle of Parasites; Sources of Infection; Modes of Infection; Pathogenesis; Immunity Infection ; Laboratory Diagnosis		practical	
		Protozoa General Features; Structure; Reproduction; Life Cycle; Classification of Protozoa; Phylum Sarcomastigophora; Phylum Apicomplexan; Phylum Ciliophoran; Phylum Microspore Strategies for diagnosis of parasitic infection * Collection and transport of specimens for enteric pathogens * Factors interfering for all types of stool collection * Precaution in the procedure of collection of specimens			2
		Amoeba Entamoeba Histolytic; History and Distribution; Morphology; Life Cycle; Pathogenesis and Clinical Features; Extra intestinal Amoebiasis; Laboratory Diagnosis; Immunity; Treatment; Examination of stool sample a) Macroscopic examination of stool b) Microscopic examination of wet mounts			3
		Nonpathogenic Intestinal Amoeba Ent amoeba Coli; Ent amoeba Hartmanni; Ent amoeba Gingivalis; Endolimax Nana;			4

		Iodamoeba Buetschlii Preparation of solutions for wet mount; the advantages and disadvantages of each solution: * Saline solution * Iodine solutions * Eosin solution			
		Pathogenic Free-Living Amoebae Naegleria Fowleri; History and Distribution; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment;			5
		Intestinal; oral and Genital Flagellates Giardia Lamblia; History and Distribution; Habitat; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment; Prophylaxis; Trichomonas Vaginalis; History and Distribution; Habitat; Morphology; Life Cycle; Pathogenicity and Clinical Features; Laboratory Diagnosis; Treatment; Prophylaxis; Laboratory diagnosis of enteric protozoa * The routine methods used in laboratory diagnosis Application of immunological methods in the diagnosis of parasite in general * Detection of antibodies in serum of patients with enteric protozoa (ELISA) * Detection of antigens in stool specimen of patients with enteric protozoa (ELISA)			6
		Tissue flagellates e.g. Genus Trypanosome Laboratory diagnosis; routine methods,			7

		immunological Assays and molecular assays			
		Genus Leishman Properties of ideal vaccines. leis mania Vaccine in trail			8
		Phylum Apicomplexan; Main properties of the group, ultrastructure of the apical complex First term examination			9
		Phylum Apicomplexan; Main properties of the group, ultrastructure of the apical complex First term examination			10
		Intestinal coccidian e.g. *Cryptosporidium partum* Morphology, habitat, mode of infection, infective stage, lifecycle and laboratory diagnosis with special emphasis on Ziehl-Neelsen			11
		Extra-intestinal coccidian e.g. *Toxoplasma gondii* Brief lecture on morphology, habitat, modes of infection, infective stages, life cycle Methods of laboratory diagnosis includes: Direct detection of the parasite			12
		ISOSPORA BELLI Morphology, habitat, mode of infection, infective stage, lifecycle and laboratory diagnosis			13
		Cyclosporine Cayetanensis Morphology, habitat, mode of infection, infective stage, lifecycle and laboratory diagnosis			14
		Sarcocystis hominies Morphology, habitat, mode of infection, infective stage, lifecycle and laboratory diagnosis			15

10. Course Evaluation	
Distributing a grade out of 100 based on the tasks assigned to the doctor, such as preparing daily exams, daily oral exams, monthly written reports, etc.	
11. Teaching Learning Resources	
Medical Parasitology Books Medical Microbiology Certified Blind	Required curriculum books (curriculum if available)
Diagnostic medical parasitology Panikers medical parasitology	Main References (Sources)
Maccy & mcartne practical medical parasitology Jawetze medical microbiology	reference books (scientific journals, reports...)
https://onlinelibrary.wiley.com/doi/book/10.1128/9781555819002 http://dl.mehrsys.ir/pdf-books/Diagnostic%20Medical%20Parasitology,%205E(www.myuptodate.com).pdf https://www.amazon.com/Diagnostic-Medical-Parasitology-Lynne-Garcia/dp/1555818994	Electronic references, websites