

1. Course Name:	
Public health	
2. Course Code:	
MTDY2105	
3. Semester / Year:	
1 nd semester / 2025–2026	
4. Description Preparation Date:	
1/10/2025	
5. Available Attendance Forms:	
Attendance in the classroom	
6. Number of Credit Hours (Total) / Number of Units (Total):	
2 hours of theory + 2 Hours practical	
7. Course administrator's name (mention all, if more than one name)	
Name: Abdulrahman Abbas Jasim	
Email: Abdulrahman.A.Albattat@alayen.edu.iq	
8. Course Objectives	
Course Objectives:	• To introduce students to the concept of public health and its role in improving the health of individuals and communities. • To enable students to understand the biological, environmental, social, behavioral, and economic factors influencing human health. • To develop students' awareness of prevention principles and strategies used to control communicable and non-communicable diseases. • To provide students with foundational knowledge of epidemiology and the methods used to study disease distribution and determinants. • To enhance students' understanding of environmental health concepts, including air and water quality, waste management, and occupational health. • To equip students with the skills necessary to identify workplace safety measures in industrial settings within the context of public health. • To introduce students to the principles of health promotion and the importance of adopting healthy lifestyle behaviors. • To familiarize students with the basics of primary health care and the roles of national and international health organizations such as the Ministry of Health and WHO. • To help students understand the fundamentals of health planning and the management of public health programs, including community health needs assessment. • To develop students' critical thinking and problem-solving abilities in applying

public health knowledge to real-life community and workplace situations.

9. Teaching and Learning Strategies

Strategy

Theoretical methods, practical laboratory methods, lectures, visual aids and videos.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Theoretical and practical syllabus					
1	2*2	A1, A2	Definition, Approaches, Classification	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
2	2*2	A1, A2	Health Promotion: Definition, Approaches, Objectives, Clinical Importance	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
3	2*2	A1, A2	Health Promotion Activities Key Strategies	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
4	2*2	A1, A2	Social Determinants of Health	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
5	2*2	A1, A2	Political Aspects of Prevention: Types,	Lectures (Interactive) Team-based learning	Daily quiz

			Objectives, Clinical Importance	presentation) Discussion Problem solving	
6	2*2	A1, A2	Levels of Prevention: Types, Differentiating Po	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
7	2*2	A1, A2	Discussion	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
8	2*2	A1, A2	First Seminar, Review	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
9	2*2	A1, A2	Assessment: Types, Objectives, Strategies	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
10	2*2	A1, A2	Monitoring: Goals and Objectives, Differentiating Points Between Assessment and Monitor	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
11	2*2	A1, A2	Demography: Definition, Types, Cycle and Stages	Lectures (Interactive) Team-based learning presentation) Discussion	Daily quiz
3					

				Problem solving	
12	2*2	A1, A2	Discussion	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
13	2*2	A1, A2	Epidemiology: Definit Types, Objectives	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
14	2*2	A1, A2	Second Seminar, Review	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
15	2*2	A1, A2	Final Exam	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz

--	--	--	--	--	--

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, or med and final exams, ... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	xford Textbook of Global Public Health, edited by Roger Detels, Quarraisha Abdool Karim, Fran

	Baum, Liming Li, and Alastair H. Leyland, 7th edition, published in 2021 by Oxford University Press, Oxford, United Kingdom. Print ISBN: 9780198816805. DOI: 10.1093/med/9780198816805.001.0001. Publisher link: https://global.oup.com/academic/product/oxford-textbook-of-global-public-health-9780198816805
--	--

1. Course Name:
English Language
2. Course Code:
MTDY2108
3. Semester / Year:
First Semester / Second Year
4. Description Preparation Date:
01 October 2025 / Edited on 16 November 2025
5. Available Attendance Forms:
Student attendance in lectures
6. Number of Credit Hours (Total) / Number of Units (Total):
30 hours (total) / 2 units (total)
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Mustafa Ahmad Abbass Email: mustafa.ahmad@alayen.edu.iq
8. Course Objectives
• To develop students' English language skills with a focus on organizing their academic, professional, and personal lives. • Building on first-year foundations, this course emphasizes practical communication, time management, goal setting, and self-expression in English. • Students will learn to navigate everyday situations, plan their schedules, manage responsibilities, and communicate effectively in both written and spoken English within the context of their studies and future careers in dialysis technology.
9. Teaching and Learning Strategies
• Task-Based Learning ○ Students complete practical tasks in English, such as planning a weekly study schedule, organizing clinical duties, or writing emails to instructors. ○ Building real-world language skills through purposeful action. • Reflective Journaling ○ Students maintain a weekly journal in English to track goals, challenges, and progress. ○ Encourages self-awareness, time management, and writing fluency. • Role Plays and Simulations ○ Practice everyday scenarios like discussing shift schedules, making appointments, or

explaining routines to patients.

- Enhances spoken English and confidence in professional interactions.
- **Use of Authentic Materials**
 - Incorporate real-world texts such as hospital forms, appointment calendars, and sample emails.
 - Helps students understand and use English in realistic, relevant contexts.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of The Theoretical Course					
1	2	Use the present simple to describe daily routines; form affirmative, negative and interrogative sentences; use basic everyday vocabulary accurately.	Present simple: statements, questions and negatives	Lecture + Guided Practice	Participation
2	2	Consolidate use of the present simple in different contexts; distinguish between be and other verbs; use present simple in short dialogues.	Present simple: review and extension	Pair Work + Controlled Practice	Short Written Task
3	2	Use adverbs of frequency with the present simple; talk about past events using the past simple; practise numbers and short guided writing.	Adverbs of frequency & past simple	Lecture + Communicative Activities	Quiz
4	2	Distinguish count and uncount nouns; use basic quantifiers (some/any, much/many, a/an); talk about quantities in simple sentences.	Count and uncount nouns	Task-Based Learning	Written Exercises

5	2	Compare people and things using comparative adjectives; use have got to talk about possessions.	Comparatives & have got	Role Play + Sentence Drills	Quiz
6	2	Describe completed past actions using regular and irregular past simple verbs; talk about yesterday/last week events.	Past simple	Storytelling + Guided Practice	Written Task
7	2	Describe actions happening now and around now using the present continuous; contrast present continuous with present simple in simple contexts.	Present continuous	Lecture + Pair Dialogues	Oral Practice
8	2	Talk about future plans using going to; use the infinitive of purpose to explain reasons (e.g. "to buy bread").	Going to for future & infinitive of purpose	Role Play + Information-Gap Activities	Participation
9	2	Form and use yes/no and Wh-questions in the tenses studied; ask for and give information politely.	Question forms	Question-and-Answer Drills + Group Work	Quiz
10	2	Use the present perfect with common time expressions (for, since, ever, never, yet, already); distinguish between been and gone.	Present perfect & time expressions	Lecture + Communicative Practice	Written Quiz
11	2	Make future predictions and decisions using will (future simple); use common phrases	Future simple	Role Play + Sentence-Building	Oral Practice

		such as “I think...”, “probably...”.			
12	2	Write an informal letter or email to a pen friend using correct layout, greetings, closings and appropriate language.	Writing a letter to a pen friend	Writing Workshop	Written Assignment
13	2	Develop listening and speaking skills on familiar topics; respond appropriately in short conversations.	Listening and speaking	Listening Tasks + Pair Dialogues	Oral Participation
14	2	Read and write a short general paragraph with a clear topic sentence and supporting details; use basic linking words.	Writing and reading a general paragraph	Reading + Guided Writing	Written Paragraph
15	2	Plan, organise and write a short essay (introduction, body, conclusion); use linking words and revise own work.	Essay writing: planning and organisation	Process Writing + Peer Review	Final Written Essay

11.Course Evaluation

Student performance will be assessed out of 100 marks, distributed as follows:

- **Midterm Exam: 25 marks**
- **Attendance and Participation: 5 marks**
- **Final Exam: 70 marks**

This fixed evaluation structure ensures clarity and consistency in grading across all students.

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	<i>English for Life: Intermediate</i> by Tom Hutchinson – Oxford University Press
Main references (sources)	<i>Oxford English Grammar Course</i> by

	Michael Swan and Catherine Walter
Recommended books and references (scientific journals, reports...)	Selected readings from The Lancet and BMJ (for simplified English summaries)
Electronic References, Websites	https://www.bbc.co.uk/learningenglish

Course Name:	
General pathology	
Course Code:	
MTDY2104	
Semester / Year:	
First semester 2024/2025	
Description Preparation Date:	
2025/10/05	
Available Attendance Forms:	
My presence in the classroom	
Number of Credit Hours (Total) / Number of Units (Total):	
2 hours of theory and 2 hours of practical work, equivalent to 60 study hours, first semester - 3 units (30)	
Course administrator's name (mention all, if more than one name)	
Name: Alaa Hussein Abdelali	
Email: alaa.husseinabd@alayer.edu.iq	
Course Objectives	
Course Objectives	Understanding the basic mechanisms of disease enables the student to grasp the pathological mechanisms that lead to disorders in cells and tissues, such as inflammation, immune disorders, cellular changes, injury, and cell death. • Linking pathological anatomical changes to clinical symptoms teaches the student how to interpret microscopic and macroscopic changes in tissues and relate them to the clinical symptoms and signs exhibited by the patient. • Providing the student with a scientific foundation for disease diagnosis develops the student's comprehension and analytical skills, enabling them to interpret the results of laboratory and histological examinations and use basic science to build a solid foundation that will help them understand specific pathologies and clinical diseases later on.

Teaching and Learning Strategies					
Strategy	Teaching and learning strategies are diverse plans and methods used to improve and facilitate the acquisition of knowledge and skills by learners, with a focus on developing higher-order thinking skills such as criticism and problem-solving, encouraging self-directed and collaborative learning, and taking into account individual differences among learners to achieve clear educational goals and flexibility in the educational process.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of The Theoretical Course					
1	2	The student will be able to: Define pathology and its importance in health sciences. Distinguish between the main cell types and the structure of each cell. Explain the relationship between cell structure and function. Demonstrate how cellular changes lead to disease.	Introduction,Cell Types ,Constitution	Theoretical Lecture	Attendance + Quiz
2	2	The student will be able to explain the concept of acute inflammation and its causes. • List the classic signs of acute inflammation. • Explain the basic stages of the inflammatory response. • Differentiate between the types of exudates.	Inflammation Acute Inflammation	Theoretical Lecture	Attendance + Quiz
3	2	• To identify the causes of chronic inflammation and its main types.	Inflammation ,Chronic Inflammation	Theoretical Lecture	Attendance + Quiz
4	2	The student should be able to differentiate between regeneration and repair. • Explain the formation of granulation tissue. • Explain the process of wound healing. • Identify the factors that hinder or promote the healing process.	Healing,Repair,Regeneration	Theoretical Lecture	Attendance + Quiz
5	2	To define cell injury and its types. • To explain the mechanisms of reversible cell injury. • To identify the morphological signs of an injured cell. • To understand the role of hypoxia in cell injury.	Cell injury,reversible cell injury .cell death	Theoretical lecture	Attendance + Quiz
6	2	The student will explain the difference between reversible and irreversible cell damage.	Irreversible cell injury ,cell	Theoretical	Attendance

		• Define cell death: Apoptosis vs. Necrosis. • Identify the microscopic changes associated with each type. • Analyze how severe damage leads to cell death.	death	lecture	+ Quiz
7	2	• To define a tumor (neoplasm) and its types: benign and malignant. • To explain the rules for naming tumors. • To distinguish between the characteristics of benign and malignant tumors. • To understand the concept of genetic mutations that cause cancer.	Neoplasia, Neoplasms, Tumors	Theoretical lecture	Attendance + Quiz
8	2	To explain the characteristics of malignancy. To demonstrate the concepts of invasion, metastasis, and cytogenetics. To understand the importance of genetics in tumors. To identify how tumors develop and become more aggressive.	characteristic of tumor	Theoretical lecture	Attendance + Quiz
9	2	To explain the difference between Grade and Stage. To understand cancer assessment systems (such as TNM). To explain the relationship between cancer stage and treatment prognosis. To apply examples of common cancers.	Grading, staging of cancers	Theoretical lecture	Attendance + Quiz
10	2	To identify the different types of tissue samples. To correctly apply the steps for taking a medical sample. To explain the importance of fixation and its types. To identify fixatives (such as formalin) and how to use them.	Histopathological techniques: sample: fixation	Theoretical lecture	Attendance + Quiz
11	2	The student will explain the steps of tissue preparation: Dehydration → Clearing → Embedding • Distinguish between paraffin and resin. • Apply the procedures in the tissue lab. • Identify common errors during preparation.	Histopathological techniques: sample: Tissue processing	Theoretical lecture	Attendance + Quiz
12	2	The student will explain the steps of tissue preparation: Dehydration → Clearing → Embedding • Distinguish between paraffin and resin. • Apply the procedures in the tissue lab. • Identify common errors during preparation.	Histopathological techniques: sample: Tissue processing	Theoretical lecture	Attendance + Quiz
13	2	• Proficient in paraffin block casting. • Can use a microtome for precise cutting. • Can determine the appropriate slide thickness (4–5 µm). • Can identify cutting problems and their solutions.	Histopathological techniques: blocking, sectioning	Theoretical lecture	Attendance + Quiz
14	2	• Proficient in paraffin block casting.	Histopathological	Theoretical	Attendance

		• Can use a microtome for precise cutting. • Can determine the appropriate slide thickness (4–5 µm). • Can identify cutting problems and their solutions.	techniques: blocking, sectioning	lecture	+ Quiz
15	2	To explain the steps of H&E staining. To identify special stains. To compare different stains and their uses. To perform a preliminary reading of basic stain slides.	Histopathological techniques: staining techniques	Theoretical lecture	
Syllabus of The Practical Course					
1	2	The student will be able to: Define pathology and its importance in health sciences. Distinguish between the main cell types and the structure of each cell. Explain the relationship between cell structure and function. Demonstrate how cellular changes lead to disease.	introduction, cell types, constitution	practical lecture	A scientific lecture that ensures laboratory safety.
2	2	The student will be able to explain the concept of acute inflammation and its causes. • List the classic signs of acute inflammation. • Explain the basic stages of the inflammatory response. • Differentiate between the types of exudates.	inflammation Acute inflammation	practical lecture	Attendance + Quiz
3	2	• To identify the causes of chronic inflammation and its main types.	inflammation, chronic inflammation	practical lecture	Attendance + Quiz
4	2	The student should be able to differentiate between regeneration and repair. • Explain the formation of granulation tissue. • Explain the process of wound healing. • Identify the factors that hinder or promote the healing process.	Healing, repair, regeneration	practical lecture	Attendance + Quiz
5	2	To define cell injury and its types. • To explain the mechanisms of reversible cell injury. • To identify the morphological signs of an injured cell. • To understand the role of hypoxia in cell injury.	Cell injury, reversible cell injury, cell death	practical lecture	Attendance + Quiz
6	2	The student will explain the difference between reversible and irreversible cell damage. • Define cell death: Apoptosis vs. Necrosis. • Identify the microscopic changes associated with each type. • Analyze how severe damage leads to cell death.	Irreversible cell injury, cell death	practical lecture	Attendance + Quiz
7	2	• To define a tumor (neoplasm) and its types: benign and malignant. • To explain the rules for naming tumors. • To distinguish between the characteristics of benign and malignant tumors.	Neoplasia, Neoplasms, Tumors	practical lecture	Attendance + Quiz

		To understand the concept of genetic mutations that cause cancer.			
8	2	To explain the characteristics of malignancy. To demonstrate the concepts of invasion, metastasis, and cytogenetics. To understand the importance of genetics in tumors. To identify how tumors develop and become more aggressive.	characteristic of tumor	practical lecture	Attendance + Quiz
9	2	To explain the difference between Grade and Stage. To understand cancer assessment systems (such as TNM). To explain the relationship between cancer stage and treatment prognosis. To apply examples of common cancers.	Grading, staging of cancers	practical lecture	Attendance + Quiz
10	2	To identify the different types of tissue samples. To correctly apply the steps for taking a medical sample. To explain the importance of fixation and its types. To identify fixatives (such as formalin) and how to use them.	Histopathological techniques: sample: fixation	practical lecture	Attendance + Quiz
11	2	The student will explain the steps of tissue preparation: Dehydration → Clearing → Embedding - Distinguish between paraffin and resin. - Apply the procedures in the tissue lab. - Identify common errors during preparation.	Histopathological techniques: sample: Tissue processing	practical lecture	Attendance + Quiz
12	2	The student will explain the steps of tissue preparation: Dehydration → Clearing → Embedding - Distinguish between paraffin and resin. - Apply the procedures in the tissue lab. - Identify common errors during preparation.	Histopathological techniques: sample: Tissue processing	practical lecture	Attendance + Quiz
13	2	- Proficient in paraffin block casting. - Can use a microtome for precise cutting. - Can determine the appropriate slide thickness (4–5 µm). - Can identify cutting problems and their solutions.	Histopathological techniques: blocking, sectioning	practical lecture	Attendance + Quiz
14	2	- Proficient in paraffin block casting. - Can use a microtome for precise cutting. - Can determine the appropriate slide thickness (4–5 µm). - Can identify cutting problems and their solutions.	Histopathological techniques: blocking, sectioning	practical lecture	Attendance + Quiz
15	2	To explain the steps of H&E staining. To identify special stains. To compare different stains and their uses.	Histopathological techniques: staining techniques	practical lecture	Attendance + Quiz

		To perform a preliminary reading of basic stain slides.			
11. Course Evaluation					
The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, and written exams, reports, etc.					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Robbins Basic Pathology . Robbins & Cotran: Pathologic Basis of Disease		
Main references (sources)			1.BRS Pathology (Board Review Series) 2. Goljan Rapid Review Pathology 3 . Kaplan Pathology Review		
Recommended books and references (scientific journals, reports...)			Harsh Mohan – Textbook of Pathology		
Electronic References, Websites			https:// HYPERLINK " https://www.kidney.org/ "www. HYPERLINK " https://www.kidney.org/ "kidney. HYPERLINK " https://www.kidney.org/ "org HYPERLINK " https://www.kidney.org/ "/ https://www.asn-online.org HYPERLINK " https://www.asn-online.org/ "/		

1. Course Name:
Specific Anatomy
2. Course Code:
MTDY2101
3. Semester / Year:

1 st semester / 2025-2026
4. Description Preparation Date:
1/10/2025
5. Available Attendance Forms:
Attendance in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total):
2 hours of theory + 2 Hours practical
7. Course administrator's name (mention all, if more than one name)
Name: Prof. Amal Ebrahim Dayoub Email: aamaldd@yahoo.com

8. Course Objectives	
Course Objectives:	General objective: By the end of the course, the student will be able to: Extensive knowledge of Anatomy of the renal system, organs, the structure of organs, and their functions. A: Knowledge Objectives A1– Knowledge of extensive scientific medical terminology in the field of Anatomy of the renal system, functions, and structure, A2– Work with scientific proficiency in medical laboratories and on specialized equipment in this field of study.

9. Teaching and Learning Strategies	
Strategy	Theoretical methods, practical laboratory methods, lectures, visual aids and videos.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Theoretical and practical syllabus					
1	2*2	A1, A2	Anatomy of the Renal	Lectures (Interactive) Team-based learning	Daily quiz

			system, definition,(parts of its)	presentation) Discussion Problem solving	
2	2*2	A1, A2	Anatomy of kidney ,location, function	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
3	2*2	A1, A2	Ureter, position, function, structure	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
4	2*2	A1, A2	Ureter, position, function, structure	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
5	2*2	A1, A2	Urethral position, function, structure	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
6	2*2	A1, A2	Urinarybladder, anatomical position, function, structure, clinical significationce	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
7	2*2	A1, A2	First seminar and discussion	Lectures (Interactive) Team-based learning presentation) Discussion	Daily quiz

				Problem solving	
8	2*2	A1, A2	Vasculature of the renal system	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
9	2*2	A1, A2	Venous drainages of renal system	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
10	2*2	A1, A2	Innervation of the renal system	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
11	2*2	A1, A2	Lymphatic drainage of the renal system	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
12	2*2	A1, A2	Second seminar, discussion	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
13	2*2	A1, A2	Right anatomical relation of the renal	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz

14	2*2	A1, A2	Left anatomical relation of the renal system	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz
15	2*2	A1, A2	Revision, final assessment	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Daily quiz

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, or med and final exams, ... etc

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1. Mckinley & O loughlin. Text book of Human Anatomy, Volume 1, first edition, chapter 27 ,Elsevier 2. Michael Field. The Renal System: Systems of the Body Series 1st, Churchill Livingstone, 2001. 3. Michael J. Field, Carol Pollock, David Harris, The Renal System Systems of the Body Series, 2nd Edition – March 18, 2010 .
Main references (sources)	1. Harkahani, D. Anatomy and physiology of the urinary system. 2. A. O. Malomo; O. E. Idowu ; F. C. Osuagwu. Lessons from History: Human Anatomy, from the Origin to the Renaissance, Int. J. Morphol., 24(1):99–104, 2006.

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	1– Stanford , K; Rutland, SH; Sturrock, C.J; and Rutland, C.S. The Importance of Anatomy. DOI:10.3389/frym.2020.546763

1. Course Name:	
Hematology	
2. Course Code:	
MTDY2102	
3. Semester / Year:	
First semester/ second year	
4. Description Preparation Date:	
21-11-2025	
5. Available Attendance Forms:	
Full-time and official classroom attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total):	
4 credits 60 hours (30 theoretical and 30 practical)	
7. Course administrator's name (mention all, if more than one name)	
Name: associated professor Bassel Adel Ismail Email: bassel.adel@alayen.edu.iq	
8. Course Objectives	
Course Objectives	General objective: At the end of the academic year the student will be able to understand the different functions of the blood systems. A- Cognitive objectives/ knowledge: The student will be able to: A1- The student should learn about the importance and the function of the blood. A2 - He can know blood and its components. A3- It is able to know the blood functions cell. B- Skills B1 - To be able to use devices and tools in the laboratory To perform clinical blood tests when encountering any emergency problem with the patient B2 - Use the vocabulary and skills acquired in the course in their specialty to understand the effect of narcotic substances on the body

	C – Values / ethics C1 – Commitment to updating knowledge & skills through participation in training courses & scientific conferences
--	--

9. Teaching and Learning Strategies

Strategy	Blended learning - Lectures (Interactive) - Online Lectures (Interactive) - Tutorial Role play Computer-based learning (computers e-learning, free downloadable software usage, Webinar) Team-based learning (group discussion, presentation) Discussion Case study Problem solving
-----------------	--

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of The Theoretical Course					
1	2	A 1/A2/A3 B1/B2 C1	Introduction of hematology (definition, importance, general functions of blood) Blood composition Physical-chemical, Constants of blood.	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
2	2	A 1/A2/A3 B1/B2 C1	Stem cells, definition, type Functions of stem cells, Haemopoiesis, site of Haemopoiesis, bone marrow stroma, the regulation Haemopoiesis, haemopoietic Growth factors.	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations

3	2	A 1/A2/A3 B1/B2 C1	Erythropoiesis, RBCs morphology, RBC membrane and metabolism, .	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
4	2	A 1/A2/A3 B1/B2 C1	Hemoglobin (Structures, Synthesis, and levels in blood and erythrocytes)	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
5	2	A 1/A2/A3 B1/B2 C1	Anemia (definition, causes Clinical features, symptoms Signs, laboratory findings Diagnosis), classification anemia	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
6	2	A 1/A2/A3 B1/B2 C1	Iron metabolism, Iron Deficiency anemia, and iron overload	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
7	2	A 1/A2/A3 B1/B2 C1	Megaloblastic anemia (B12 metabolism, Absorption, transport, Biochemical function, B12 deficiency anemia. Folate metabolism (Absorption transport, functions, folate deficiency anemia	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
8	2	A 1/A2/A3 B1/B2 C1	Hemolytic anemia, Normal Red cell Destruction Classification, hereditary hemolytic	Lectures (Interactive) Role play Team-based learning	Midterm exams Final exams evaluations

			anemia, acquired hemolysis anemia	presentation) Discussion Problem solving	
9	2	A 1/A2/A3 B1/B2 C1	Thalassemia (definitions, Types, causes and diagnosis	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
10	2	A 1/A2/A3 B1/B2 C1	Sickle cell anemia	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
11	2	A 1/A2/A3 B1/B2 C1	Aplastic anemia	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
12	2	A 1/A2/A3 B1/B2 C1	Polycythemia	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
13	2	A 1/A2/A3 B1/B2 C1	Acute Leukaemia, (ALL, lymphocytic leukaemia, Chronic myeloid leukaemia) Causes and diagnosis of each one	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations

14	2	A 1/A2/A3 B1/B2 C1	Lymphoma (Hodgk Lymphoma, causes, and Lab findings	Lectures (Interactiv Role play Team-based learn presentation) Discussion Problem solving	Midterm exams Final exams evaluations
15	2	A 1/A2/A3 B1/B2 C1	Bleeding disorders, Arterial, Thrombosis, venous thrombosis, and risk factors	Lectures (Interactiv Role play Team-based learn presentation) Discussion Problem solving	Midterm exams Final exams evaluations

Syllabus of The Practical Course

1	2	A 1/A2/A3 B1/B2 C1	Blood collection Methods of blood sampling Anticoagulations	Lectures (Interactiv Role play Team-based learn presentation) Discussion Problem solving	Midterm exams Final exams evaluations
2	2	A 1/A2/A3 B1/B2 C1	Hemoglobin estimation	Lectures (Interactiv Role play Team-based learn presentation) Discussion Problem solving	Midterm exams Final exams evaluations
3	2	A 1/A2/A3 B1/B2 C1	Hematocrit	Lectures (Interactiv Role play Team-based learn presentation) Discussion Problem solving	Midterm exams Final exams evaluations
4	2	A 1/A2/A3	WBCs counting	Lectures (Interactiv	Midterm exams

		B1/B2 C1	RBCs counting	Role play Team-based learning (presentation) Discussion Problem solving	Final exams evaluations
5	2	A 1/A2/A3 B1/B2 C1	Erythrocyte sedimentation method	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
6	2	A 1/A2/A3 B1/B2 C1	Bleeding time	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
7	2	A 1/A2/A3 B1/B2 C1	Clotting time	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
8	2	A 1/A2/A3 B1/B2 C1	Prothrombin time, trthromboplastin partial time	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
9	2	A 1/A2/A3 B1/B2 C1	Osmotic fragility (resistance) RBC	Lectures (Interactive) Role play Team-based learning (presentation)	Midterm exams Final exams evaluations

				Discussion Problem solving	
10	2	A 1/A2/A3 B1/B2 C1	Staining of blood films	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
11	2	A 1/A2/A3 B1/B2 C1	Differential leukocyte Count part 1	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
12	2	A 1/A2/A3 B1/B2 C1	Differential leukocyte Count part 2	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
13	2	A 1/A2/A3 B1/B2 C1	Inclusions bodies in RBCs	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
14	2	A 1/A2/A3 B1/B2 C1	Reticulocyte count	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations

15	2	A 1/A2/A3 B1/B2 C1	Abnormal blood cell	Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
----	---	--------------------------	---------------------	---	---

11. Course Evaluation

The student grades are distributed from 100 points to the full course and the student examines two university examinations.

The midterm exam is for 40 points and divided according to the following:

5 points of class participation and attendance

15 points Written Practical Examination

20 points Written Theoretical Examination

The Final is for 60 points and divided according to the following:

25 points for practical exam

35 points for theoretical exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	References 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). 3. Dacie and Lewis Practical hematology. S.Mitchell. Lewis and Barbara J. Bain, 10th edition , Churchill Livingstone Elsevier (2001)
Recommended books and references (scientific journals, reports...)	Global Publishing Houses springer Elsevier pubmed
Electronic References, Websites	www.who.int WHO website

1. Course Name:					
MSC MAHA HASSAN SAHI					
2. Course Code:					
MTDY2103					
3. Semester / Year:					
FIRST 2025					
4. Description Preparation Date:					
7 /11/ 2025					
5. Available Attendance Forms:					
In-person attendance inside the university					
6. Number of Credit Hours (Total) / Number of Units (Total):					
30 HOUR THEORITICAL AND PRACTICAL 4 UNITS					
7. Course administrator's name (mention all, if more than one name)					
Name: MSC MAHA HASSAN SAHI					
Email:PHMAHAWI67@ GMAIL .COM					
8. Course Objectives					
Course Objectives			Pharmacology is one of the vital scientific disciplines in its own right, and its importance extends beyond providing the foundation for the therapeutic use of medications. Our goal is to provide a strong background not only for future physicians and anesthesia technologists, but also for scientists in other fields who need to understand how drugs work.		
9. Teaching and Learning Strategies					
Strategy		Blended Learning • Interactive lectures • Interactive online lectures • Using strategies such as cooperative learning, discussion, brainstorming, and practical discussion • Problem-solving			
10. Course Structure					
Week	Hours	Required Learning	Unit or subject	Learning method	Evaluation

		Outcomes	name		method
Syllabus of The Theoretical Course					
1		Pharmacokinetics Pharmacodynamics Efficacy Potency Agonist antagonist	Principle of drug therapy	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, and practical discussion	
2		Absorption Distribution Metabolism Excretion	Principle of drug therapy	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming and practical discussion	
3		Cholinergic anticholinergic drugs	Pharmacokinetics And drug receptor	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, and practical discussion	
4		pharmacodynamics	Dose response relation shape Therapeutic index	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, and practical discussion	

5		Adrenergic drug beta bloking drug	Autonomic nervous system Peripheral ns	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, and practical discussio	
6		Sedative alcohol depressant drugs	Barbiturate hypnotics benzodiazepine	Lectures (Interactive) Online Lectures (Interacti Using strategies such as cooperative learning, discussion, brainstorming, and practical discussio	
7		Narcotine or opioid	Sedative hypno drug	Lectures (Interactive) Online Lectures (Interacti Using strategies such as cooperative learning, discussion, brainstorming, and practical discussio	
8		Local general anesthes		Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming , and practical discussio	
9		DRUG INRESPIRATORY SYSTEM		Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, a practical discussio	
10		ANTI ALCER ANTIACID	ANTI ALCER ANTIACID	Lectures (Interactive) Online Lectures (Interactive) Using strategies such as cooperative learning, discussion, brainstorming, a	

				practical discussio	
11					
12					
13					
14					
15					

Syllabus of The Practical Course

1		ROUTE OF DR ADMENSETRATION			
2		DISCUSSION			
3		SIMENAR			
4		EXCRETION ABSORPTION			
5		DISCUSSION			
6		SIMENAR			
7		DRUG ANTAGONI MORPHINE NALORPHINE			
8		DISCUSSION			
9		SIMENAR			
10		EVALUITION ANALGESIA			
11		DI SIMEN SCUSSION			
12					
13					
14		DISCUSSION			
15					

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)	Davidson's Principles and Practice of Medicine
Main references (sources)	
Recommended books and references (scientific journals, reports...)	-Oxford hand book of clinical medicine, sixth edition, Longmore, Murray,2004 2-Harrisons principle of internal medicine 2th edit 20
Electronic References, Websites	

1. Course Name:	
Medical Psychology	
2. Course Code:	
MTDY2106	
3. Semester / Year: 2025–2026 : Stage 2	
4. Description Preparation Date: 17 – 11– 2025	
5. Available Attendance Forms: Physical presence within the university	
6. Number of Credit Hours (Total) / Number of Units (Total):	
Two hours (theory)	
7. Course administrator's name (mention all, if more than one name)	
Name: sadiq abd ali Email: sdffr0782@gmail.com	
8. Course Objectives	
Course Objectives	1. Understanding the psychological and biological foundations of addiction 2. Acquiring skills to apply behavioral and cognitive therapy techniques 3. Developing the ability to design integrated treatment plans for addiction cases
9. Teaching and Learning Strategies	
Strategy	4. Interactive Lectures 5. Problem–Based Learning (PBL) 6. Individual and Group Presentations 7. Collaborative Learning (Group Work) 8. Case Study

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of The Theoretical Course					
1	2	The student will be able to explain the historical development of psychology, from its philosophical roots to its emergence as an independent science, with the ability to link each stage to its key figures and their scientific contributions.	Introduction to the science of psychology and its sub-field Brief history of psychology definition of medical psychology	Conducting theoretical examinations (Midterm + End-of-semester exams)	Delivering lectures using information technology (computer-based).
2	2	The student will be able to distinguish between principles of Gestalt psychology and foundations of the psychoanalytic school, with the ability to compare each school's approach in explaining behavior and mental processes.	schools of thoughts psychology gestalt psychology psychoanalysis	Conducting theoretical examinations (Midterm + End-of-semester exams)	Evaluation method
3	2	The student will be able to explain fundamental differences between humanistic psychology approaches which view humans as conscious	Humanistic psychology - behaviorism	Conducting theoretical examinations (Midterm + End-of-semester exams)	Syllabus of The Theoretical Course

		beings with free will, and the behavioral school, which interprets behavior through stimuli, responses, and conditioned learning.			
4	2	The student will be able to explain mechanisms of basic mental processes—such as memory, forgetting, thinking, and language—and demonstrate the role of each in understanding human behavior and problem-solving.	mental process: memory- forgetting thinking - language	Conducting theoretical examinations (Midterm + End-of-semester exams)	Delivering lectures using information technology (computer-based)
5	2	The student will be able to explain mechanisms of basic mental processes—such as memory, forgetting, thinking, and language—and demonstrate the role of each in understanding human behavior and problem-solving.	senses - attention Imagination	Conducting theoretical examination (Midterm + End-of-semester exams)	
6	2	The student will be able to demonstrate how the	The structural model of personality ID, EGO, super EGO- the human consciousness	Conducting theoretical examination (Midterm +	

		senses function and their role in receiving information, and explain mechanisms attention and function imagination processing experiences and forming mental representations.		End-of-semester exams	
7	2	The student will be able to explain components of the structural model of personality (id, ego, superego) and demonstrate role of each in guiding human behavior, while clarifying the different levels of consciousness and their relation to personality formation.	Psychological defense mechanisms Denial - repression - projection - sublimation Displacement - regression	Conducting theoretical examination (Midterm + End-of-semester exams)	
8	2	The student will be able to distinguish between different defense mechanisms, explain their role in reducing anxiety and protecting the ego, and demonstrate ability to apply illustrative examples for each mechanism.	methods of study in psychology experimental methods - psychological testing - case study	Conducting theoretical examination (Midterm + End-of-semester exams)	

9	2	The student will be able to explain characteristics of methods of experimental approach, psychological tests and case study, and demonstrate how they are used in psychological research understand, measure, and analyze behavior.	the psychological causes for the appearance of disorder : stress disorder - trauma - emergency situation	Conducting theoretical examination (Midterm + End-of-semester exams)	
10	2	The student will be able to explain psychological factors leading to emergence disorders, such stress disorder, trauma, and emergency situations, with the ability to relate these factors to the patient's behaviors and psychological responses.	The psychosomatic disorder- hypochondriasis somatization disorder	Conducting theoretical examination (Midterm + End-of-semester exams)	
11	2	The student will be able to describe characteristics psychosomatic disorders, such hypochondriasis And somatization disorder, and explain relationship between psychological factors and their accompanying	patient relationship - the doctor - medical consultation	Conducting theoretical examination (Midterm + End-of-semester exams)	

		physical manifestations.			
12	2	The student will able to explain principles of different psychotherapies, with the ability distinguish applications of group therapy, behavioral therapy, and cognitive-behavioral therapy, and clarify the role of each in improving patient's mental health.	psychotherapy – medical applications of psychotherapy : group therapy - behavioral and cognitive – behavioral	Conducting theoretical examination (Midterm + End-of-semester exams	
13	2	The student will able to describe basic structure of brain and its various functions, and explain The role neurotransmitters in regulating behavior, emotions, and mental processes.	biological base of behavioral : structure and function of the brain – neurotransmitter and their functions	Conducting theoretical examination (Midterm + End-of-semester exams	
14	2	The student will able to identify psychological and social factors leading to suicide, and explain how cognitive-behavioral therapy can be used for prevention modifying risky thoughts and behaviors and	suicide : -suicide the etiology of cognitive behavioral therapy for suicide prevention	Conducting theoretical examination (Midterm + End-of-semester exams	

		enhancing coping skills and positive thinking.			
15	2	The student will be able to explain psychological, biological, and social causes of drug addiction, and describe the role of behavioral therapy in modifying substance-related behaviors, preventing relapse, and promoting recovery.	Drug addiction substance use disorder : The etiology of addiction Behavioral treatment of drug addiction	Conducting theoretical examination (Midterm + End-of-semester exams)	

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)	1. Nathan H. Azrin & Montrose M. Wolf Behavioral Treatment of Drug Abuse. 2. Carroll, K. M. – A Cognitive–Behavioral Approach: Treating Cocaine Addiction
Main references (sources)	1. Azrin, N. H., & Wolf, M. M. (1973). Behavioral Treatment of Drug Abuse. New York: Pergamon Press. - National Institute on Drug Abuse (NIDA). (2020). Principles of Drug Addiction Treatment: Research–Based Guide.
Recommended books and references (scientific journals, reports...)	1. Journal of Substance Abuse Treatment (JSAT) 2. Drug and Alcohol Dependence
Electronic References, Websites	1. https://www.drugabuse.gov.

	2. https://www.samhsa.gov/
--	--

Course Description Form

1. Course Name: clinical pathology	
2. Course Code: MTDY2204	
3. Semester / Year: second course / second stage -2025-2026	
4. Description Preparation Date: 27-2-2026	
5. Available Attendance Forms:	
6. Number of Credit Hours (Total) / Number of Units (Total) 2 hours weekly /2 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Luma Kamil Abbas Email: luma.kamelabbas@alayen.edu.iq	
8. Course Objectives	
Course Objectives	1. The student will learn about the structure of the urinary system, its organs, and its primary function. 2. The student will be able to distinguish between the causes of kidney diseases, whether due to congenital malformations, specific infections genetic mutations, etc. 3. The student will learn about the intricate structures of the kidney, its functions, and its physiology, and consequently, the diseases that can occur within it. 4. The student will learn about examples of kidney diseases. 5. The student will learn about examples of diagnostic methods used clinically for kidney diseases and the field of artificial kidneys.
9. Teaching and Learning Strategies	
Strategy	1. Interactive lecture 2. Discussion and dialogue 3. Collaborative learning

4. Student presentations

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1		This topic introduces the fundamental physiological roles of the kidneys, including glomerular filtration, tubular reabsorption, tubular secretion, and urine concentration	1.General Aspects Kidney Functions		
2		discusses developmental anomalies affecting the kidneys and urinary tract	2.Congenital Abnormalities of the Urinary System		
3		Renal disorders are classified based on anatomical involvement, etiology, and clinical presentation	3.Classification Renal Diseases		
4		This topic examines immunologically mediated and non-immunologically mediated glomerular disorders, including acute post-infectious glomerulonephritis, membranous nephropathy, focal segmental glomerulosclerosis, and IgA nephropathy	4.Glomerular Diseases: Causes,Types,and Pathology		
5		including acute tubular necrosis, interstitial nephritis, and drug-induced nephrotoxicity. Mechanisms of tubular injury, inflammation, fibrosis	5.Seminar Discussion		
6		Covers pathological conditions involving renal blood vessels	6.Tubulointerstitial Diseases		

7		such as hypertensive nephrosclerosis, renal artery stenosis	7. Renal Vascular Diseases		
8		Focuses on acute kidney injury (AKI) and chronic kidney disease (CKD), discussing prerenal, intrinsic, and postrenal causes	8. Renal Failure: Causes, Types, and Pathology		
9		describes irreversible loss of renal function characterized by extensive nephron destruction, glomerulosclerosis, interstitial fibrosis, and tubular atrophy	9. End-Stage Renal Disease (ESRD): Pathology		
10		Explores the pathogenesis of lower and upper urinary tract infections, including bacterial adherence mechanisms, inflammatory response, and tissue damage.	10. Seminar Discussion		
11		Examines acute and chronic pyelonephritis, focusing on ascending bacterial infection, vesicoureteral reflux, renal scarring, and long-term functional impairment	11. Pathology of Urinary Tract Infection (UTI)		
12		Discusses renal involvement in tuberculosis caused by <i>Mycobacterium tuberculosis</i>	12. Pyelonephritis: Causes, Types, and Pathology		
13			13. Tuberculous Pyelonephritis		

14			14.Seminar – Revision		
15			15.Final Examination		

11. Course Evaluation

The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, and written exams, reports, attendance, and participation: 10 points

Daily quizzes and assignments: 10 points

Midterm exam: 20 points

Final exam: 60 points

Total: 100 points

12. Learning and Teaching Resources

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

Course Description Form

1. Course Name: Medical Microbiology					
2. Course Code: MTDY2201					
3. Semester / Year: Second Level / 2025-2026					
4. Description Preparation Date: 27-2-2026					
5. Available Attendance Forms: In-person (Theory & Practical)					
6. Number of Credit Hours (2) / Number of Units (3)					
7. Course administrator's name (mention all, if more than one name)					
Name: MSc. Ghadeer Ridha Email: ghadeerr.alsaray@student.uokufa.edu.iq					
8. Course Objectives					
Course Objectives		- General Objectives: - Provide a clear understanding of microorganisms by studying their structures and functions. - Introduce Medical Microbiology as an essential science for medical, dental, and pharmacy colleges. - Empower students to cultivate bacteria and develop skills in safe handling and prevention. - Study different types of microorganisms, including bacteria, viruses, parasites, and fungi. - Specific Objectives: - Provide knowledge of the principles of bacteriology, virology, and parasitology. - Study the nature of pathogenic microorganisms and their disease-causing mechanisms. - Understand how body systems function and respond to microbial infections.			
9. Teaching and Learning Strategies					
Strategy		Interactive theoretical lectures, practical laboratory learning (including sterilization, staining and culturing), and the use of visual demonstrations for the diagnosis of microorganisms.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Intro to Microbiology Classification	General Microbiology	Lecture + Practical	Participation

2	2	Bacteria classification structure	Bacteria Morphology	Lecture + Practical	Daily Quiz
3	2	Microbial Growth Metabolism	Microbial Metabolism	Lecture + Practical	Daily Quiz
4	2	Techniques for Bact Cultivation	Bacterial Cultivation	Lecture + Lab	Daily Quiz
5	2	Study the Pathogenicity bacteria	Pathogenicity	Lecture + Lab	Lab Report
6	2	Enterobacteria & Biochem reactions	Enterobacteria	Lecture + Lab	Lab Report
7	2	Study Pseudomonas & T production	Pseudomonas	Lecture + Practical	Lab Report
8	2	Understand the role of Biofil	Bacterial Biofilms	Lecture + Practical	Quiz
9+10	2	Study Gram-Positive Bacteri Study Gram-negative Bacteri	Gram-Positive Bacteria Gram-negative Bacteria	Lecture + Lab	Quiz
11	2	Bacteria spores germination	Bacterial Sporulation	Lecture + Lab	Homework
12	2	Study Listeria Pathogenesis	Listeria Pathogenesis	Lecture + Lab	Homework
13	2	Study Mycobacter tuberculosis	Important Pathogens	Lecture + Lab	Pop Quiz
14	2	Virus characteristics & geno	Virology	Lecture + Lab	Lab Report
15	2	Principles of Bact vaccination	Bacterial Vaccination	Review Session	Final Exam

11. Course Evaluation

- Attendance, Participation, and Reports: 10%
- Daily Quizzes and Homework: 10%
- Midterm Examination: 20%
- Final Examination: 60%
- Total: 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Approved Medical Microbiology Textbook.
Main references (sources)	Specialized references in Bacteriology, Virology, and Immunology
Recommended books and references (scientific journals, reports...)	Medical Microbiology Atlases for bacterial culture diagnosis.
Electronic References, Websites	Academic journals and databases like NCBI and PubMed.

Course Description Form

1. Course Name:	
Basic immunology	
2. Course Code:	
MTDY2202	
3. Semester / Year:	
Second course / 2025-2026	
4. Description Preparation Date:	
26/2/2026	
5. Available Attendance Forms:	
Availability 15 weeks, 2 hours per week	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 hours/3 units	
7. Course administrator's name (mention all, if more than one name)	
Name: dr. Hakeem Ghani Hassan Email: alhamamy201567@gmail.com	
8. Course Objectives	
Course Objectives	Describes the basic principles of the immune system with emphasis on the innate and acquired immune response, Introduces students to the normal and pathological function of the immune system, with emphasis on explaining the processes involved in the body's defenses through the humoral and cellular immune response that enable the normal functioning of immune cells in the immune response, as well as explaining the pathological functional mechanisms that lead to disturbances of normal immune processes. Emphasis is placed on the clinical applications of immunology, including antigen-antibody interactions, explaining the principles and performing serological tests used to help detect specific diseases.
9. Teaching and Learning Strategies	
Strategy	Using active learning. Using interactive lectures. Using collaborative assessment. Using experiential learning. Using technology in education. Using positive feedback. Using innovative learning. Using active and interactive learning.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Introduction To Immunology	Theoretical + Practical Lectures	Theoretical and practical tests
2	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Cells Of Immune System	Theoretical + Practical Lecture	Theoretical and practical tests
3	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Organs Of immune System	Theoretical + Practical Lecture	Theoretical and practical tests
4	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Mechanism Of Innate & Adaptive Immunity	Theoretical + Practical Lecture	Theoretical and practical tests
5	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Antigens: Definitions, Characteristics & Types	Theoretical + Practical Lecture	Theoretical and practical tests
6	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Immunoglobulin s: Definitions, Characteristics & Types	Theoretical + Practical Lecture	Theoretical and practical tests

7	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Antigen-Antibody Interactions & Complexes	Theoretical + Practical Lecture	Theoretical and practical tests
8	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Cytokines & Mediators	Theoretical + Practical Lecture	Theoretical and practical tests
9	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Complement System: Definitions, Characteristics & Types	Theoretical + Practical Lecture	Theoretical and practical tests
10	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Major Histocompatibility Complex	Theoretical + Practical Lecture	Theoretical and practical tests
11	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Bacterial immunity, Anti-Viral Immunity, Anti-Fungal Anti — Parasitic Immunity	Theoretical + Practical Lecture	Theoretical and practical tests
12	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Anti-Fungal Anti— Parasitic Immunity	Theoretical + Practical Lecture	Theoretical and practical tests
13	2 Theoretical + 3 practical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Anti—Tumor Immunity	Theoretical + Practical Lecture	Theoretical and practical tests

		research.			
14	2 Theoretical	Develop a comprehensive understanding of the fundamentals of immunology to enhance the ability to apply knowledge in the fields of health and scientific research.	Autoimmunity: Renal Autoimmune Diseases, T- Cell Mediated Renal Injury, Lupus nephritis, Anti— Glomeruli Basement Membrane Disease	Theoretical + Practical Lecture	Theoretical and practical tests
15	+ 3 practical				

11. Course Evaluation

Daily Oral Assessment	5 %	
Written Midterm Exam	20%	
Practical / Laboratory Exam	15 %	10%
Final Written Exam	60 %	
Total	100%	

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Basic Immunology: Functions and Disorders of the Immune System by Abul K. Abbas
Main references (sources)	Cellular and Molecular Immunology By Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai
Recommended books and references (scientific journals, reports...)	Kuby Immunology by Judith A. Owen et al
Electronic References, Websites	National Center for Biotechnology Information (NCBI Bookshelf) – Free immunology resources

Course Description Form

1. Course Name: Metabolism	
2. Course Code: MTDY2206	
3. Semester / Year: Second Course, Second Stage/ 2025–2026	
4. Description Preparation Date: Date: 26–2–2026	
5. Available Attendance Forms: In-person	
6. Number of Credit Hours (Total) / Number of Units (Total): 2 theoretical hours per week / 2 credit units	
7. Course administrator's name (mention all, if more than one name)	
Name: Assist. Lecturer Haneen Kazem Fakher Email: haneenkazem.bio@utq.edu.iq	
8. Course Objectives	
Course Objectives	- Define the concept of metabolism and explain its importance in the human body. - Understand the metabolic pathways of carbohydrates, lipids, and proteins. - Explain the role of enzymes and coenzymes in metabolic reactions. - Relate metabolic disorders to pathological conditions. - Analyze biochemical changes experimentally.

9. Teaching and Learning Strategies

Strategy	• Interactive lectures • Scientific discussions • Problem-solving of metabolic pathways • Presentation of pathway diagrams • Clinical correlation
-----------------	---

10. Course Structure

Week	Hours	Unit or subject name	Required Learning Outcomes	Learning method	Evaluation method
1	2	Metabolism	Understanding catabolism and anabolism processes.	Lecture + Discussion	
2	2	Enzymes	Studying the mechanism of biological catalysts.	Explanation + Illustrations	
3	2	Michael's - Menten theory	understanding the kinetics of enzymatic reactions.	Mathematical Derivation	
4	2	Carbohydrate Metabolism	Studying glycolysis and energy production.	Lecture + Diagrams	
5	2	Lactic Acid Fermentation	Understanding anaerobic energy production.	Explanation and Practical Application	
6	2	Citric acid cycle / TCA cycle/ Krebs cycle	Analyzing the central metabolic pathway.	Explanation of Cycle Reactions	
7	2	The electron transport chain	Understanding the production of ATP molecules.	Visual Presentation	
8	2	Fructose Metabolism	Studying fructose metabolism.	Comparative Explanation	

9	2	Galactose Metabolism	Understanding the conversion of galactose to glucose.	Lecture	
10	2	Glycogen metabolism	Studying the synthesis and breakdown of sugar stores.	Interactive Diagrams	
11	2	Protein metabolism	Understanding amino acid degradation.	Explanation + Examples	
12	2	Protein synthesis	Studying polypeptide chain synthesis.	Explanation of Biological Mechanisms	
13	2	Lipid Metabolism	Understanding fatty acid oxidation.	Lecture + Discussion	
14	2	Cholesterol metabolism	Studying cholesterol biosynthesis	Detailed Explanation	
15	2	Nucleotide Metabolism	Understanding the synthesis and degradation of DNA and RNA.	Comprehensive Review	

11. Course Evaluation

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

- Attendance and Participation: 10 marks
- Quizzes and Assignments: 10 marks
- Midterm Exam: 20 marks
- Final Exam: 60 marks

Total: 100 marks

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

- Lippincott's Illustrated Reviews: Biochemistry
- Harper's Illustrated Biochemistry

Main references (sources)	• Lehninger Principles of Biochemistry • Textbook of Medical Biochemistry
Recommended books and references (scientific journals, reports...)	• PubMed • NCBI Bookshelf
Electronic References, Websites	• Biochemistry

Al-Ayen Iraqi University
College of Health and Medical Technology
Course Description form for... Metabolic disorder

1. Course Name :	
Metabolic disorder	
2. Course Code:	
MTDY2203	
3. Semester / Year:	
2 semester/ Second year 2025-2026	
4. Description Preparation Date:	
26-2-2026	
5. Available Attendance Forms:	
Face to face	
6. Number of Credit Hours (Total) / Number of Units (Total):	
75 hrs (30 hrs theoretical+45 hrs practical)/ 3 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Sherif Mohamed Abd El-Hamid Email: sherifmohammed@alayen.edu.iq	
8. Course Objectives	
Course Objectives : The students able to : ● Describe general metabolic disorders. ● Identifying types of metabolic disorders. ● Identifying the genetic and environmental factors that contribute to the development of metabolic disorders. ● Understand and address abnormalities in the body's metabolism. ● Conduct clinical examinations.	
9. Teaching and Learning Strategies	
Strategy	Lectures Discussions Demonstrations Lab. Work E. learning

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of Theoretical part for... Metabolic disorder					
1	2	Define what a metabolic disorder is and explain the concept of metabolism (anabolism and catabolism).	Metabolic disorders/ diseases, types of metabolic disorders	Interactive-visual	Exams and quizzes
2	2	Distinguish between Type 1 (insulin-dependent) and Type 2 (non-insulin-dependent) based on etiology and pathophysiology.	Diabetes Mellitus (DM), Disorders of Fructose metabolism, Disorders of Galactose metabolism, glycogen storage disease	Interactive-visual	Exams and quizzes
3	2	Explain the origin of urea (Urea Cycle in the liver) as the primary method of ammonia detoxification.	Protein disorders, uremia, Quiz	Interactive-visual	Exams and quizzes
4	2	Explain the biochemical cause of Homocystinuria, specifically the deficiency of the enzyme Cystathionine Beta-Synthase (CBS) in the Methionine metabolism pathway.	homocystinuria, cystinuria	Interactive-visual	Exams and quizzes
5	2	Recognize the clinical signs of untreated Phenylketonuria	Albinism, Phenylketonuria, Quiz	Interactive-visual	Exams and quizzes
6	2	Understand the link between elevated LDL/Triglycerides and the development of Atherosclerosis	Lipid metabolism disorders	Interactive-visual	Exams and quizzes
7		Classify disorders based on the specific lipid component that is elevated	Classification of disorders of lipid metabolism	Interactive-visual	Exams and quizzes

8	2	Explain that these are genetically determined disorders (Inborn Errors of Lipid Metabolism) resulting from mutations in genes coding for apolipoproteins, enzymes (like LPL), or receptors (like LDL-R).	Primary hyperlipidaemias, normal values	Interactive-visual	Exams and quizzes
9	2	Define atherosclerosis as a chronic inflammatory disease	Atherosclerosis, Quiz	Interactive-visual	Exams and quizzes
10	2	Explain the Mechanism of Action (MOA) for drugs interfering with nucleotide metabolism	Nucleotide metabolism disorders	Interactive-visual	Exams and quizzes
11	2	Explain how hyperuricemia leads to monosodium urate crystal precipitation in joints.	Purine and Pyrimidine Metabolism Disorders	Interactive-visual	Exams and quizzes
12	2	Identify that ADA is a key enzyme in the Purine Salvage Pathway .	Adenosine deaminase deficiency	Interactive-visual	Exams and quizzes
13	2	Explain how Allopurinol and Febuxostat create a "functional" xanthine oxidase deficiency	Xanthine oxidase deficiency	Interactive-visual	Exams and quizzes
14	2	Differentiate between the two primary causes of hyperuricemia	Gouts and Hyperuricemia	Interactive-visual	Exams and quizzes
15	2	Interpret migration patterns: HbA (Fastest) > HbF > HbS > HbC (Slowest). Mnemonic: A Fat Santa Claus.	Disorders of hemoglobin	Interactive-visual	Exams and quizzes

Syllabus of Practical part for... Metabolic disorder

1	2	Perform the Test of serum albumin	Estimation of serum of albumin	interactive-visual	Oral-written quiz-practical application
2	2	Interpret Azotemia (High Urea) and low urea.	Estimation of serum of urea (enzymatic)	interactive-visual	Oral-written quiz-practical application
3	2	Apply the standard colorimetric formula to determine the concentration of urea	Estimation of serum of urea ((Nessler's))	interactive-visual	Oral-written quiz-practical application

4	2	Interpret Hyperuricemia and Hypouricemia	Estimation of serum uric acid	interactive-visual	Oral-written quiz-practical application
5	2	Apply all previous experiments	Practical tests on the previous exp.	interactive-visual	Oral-written quiz-practical application
6	2	Calculate Indirect Bilirubin	Types of bilirubin	interactive-visual	Oral-written quiz-practical application
7	2	Correlate elevated Total Bilirubin (> 2.0 - 2.5 mg/dL) with the clinical appearance of yellowing of the skin and sclera.	Estimation of serum total bilirubin	interactive-visual	Oral-written quiz-practical application
8	2	Understand that if Direct Bilirubin is high in the serum, it will appear in the urine (Bilirubinuria)	Estimation of serum direct bilirubin	interactive-visual	Oral-written quiz-practical application
9	2	Interpret Hyponatremia and Hypernatremia	Estimation of serum sodium	interactive-visual	Oral-written quiz-practical application
10	2	Interpret Hyperkalemia and Hypokalemia	Estimation of serum potassium	interactive-visual	Oral-written quiz-practical application
11	2	Explain that Total Calcium is affected by Albumin levels	Estimation of serum calcium	interactive-visual	Oral-written quiz-practical application
12	2	Interpret Hyperphosphatemia and Hypophosphatemia	Estimation of serum Phosphorus	interactive-visual	Oral-written quiz-practical application
13	2	Explain the three critical chemical steps in the estimation of serum iron	Estimation of serum iron	interactive-visual	Oral-written quiz-practical application
14	2	Define the difference between measured cations and anions.	Estimation of serum electrolytes	interactive-visual	Oral-written quiz-practical application
15	2	Apply on the previous experiments theoretically.	Quiz	interactive-visual	Oral-written quiz-practical application

11. Course Evaluation

The following evaluation methods are adopted:

1. Exams
2. Quiz
3. Report

4. Attendance
5. Class Activity
6. Technical Practice

Distribution of grades:

1. Practical Midterm 15%
2. Theoretical Midterm 25%
3. Theoretical Final Term 35%
4. Practical Final Term 25%

Total 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Textbook of biochemistry (Sixth Edition) For Medical Students DM Vasudevan, Sreekumari S and Kannan Vaidyanathan.
Main references (sources)	-Clinical Biochemistry Lecture Notes.Tenth EditionHoboken, NJ: Wiley, 2018. Peter Rae. Mike Crane. Rebecca Pattenden. - Biochemistry. Fourth Edition, 2013. Dr. U. Satyanarayana Dr. U. Chakrapani.Elsevier India Private Limited. -Clinical biochemistry &metabolic medicineeighth edition published in 2012 by Hodder Arnold. Professor Martin Andrew Crook. - Textbook of Medical Biochemistry Eighth Edition 2012. MN Chatterjea Rana Shinde.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Academic description of **Metabolic disorder** - ...2nd..... Stage

Signature :

Name : Dr. Sherif Mohamed Abd El-Hamid

1. Course Name: Computer and Artificial Intelligence

2. Course Code: MTDY2209

3. Semester / Year: Second semester / 2025–2026

4. Description Preparation Date: 27/2/ 2026

5. Available Attendance Forms: My presence in location at the university

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

56 hours (28 theoretical + 28 practical) / 2 units

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

Name: MS.C Wassim Talib Hatem

Email: wissam.talib@alayen.edu.iq

8. Course Objectives

Course Objectives

–Security and Networks:

Understanding the basics of networks, their types, and components.

–Introduction to Artificial Intelligence:

Understanding the definition of AI, its history, technologies, and associated ethical challenges.

–E–Commerce:

Understanding electronic banking services such as phone banking, e-messaging, and alerts.

9. Teaching and Learning Strategies

Strategy

- Interactive lectures
- Practical review
- Practical training
- Lecture documentation

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Syllabus of The Theoretical Course					
1	2 hour	Understand the basics of networks, their types, and components.	Security and Networking	Lectures, demonstrations, group discussions.	Written tests, practical troubleshooting assessment
2	2 hour	Understand electronic banking services like phone banking, SMS alerts.	E-commerce	Lectures, case studies, discussions on practical applications.	Written exams, presentations on practical e-banking examples.
3	2 hour	Identify common hardware and software problems in computer	Computer Troubleshooting	Workshops, hands-on practical exercises.	Practical tests, assessment of troubleshooting tools use.
4	2 hour	Understand the definition and history of AI.	Introduction to AI	Interactive lectures, historical review of AI, video presentations.	Written exams, research projects on AI history and techniques.
5	2 hour	Explore the role of AI in smartphones and virtual assistants.	AI in Daily Life	Practical sessions on AI applications in smartphones	Short reports on AI use in daily life.
6	2 hour	Discover AI applications in education, healthcare, finance, and transportation.	Applications of AI	Case studies, group discussions, presentations.	Research reports, presentations on AI applications.
7	2 hour	Understand AI's impact on society and international relations	AI and Society	Lectures, interactive discussions on AI's societal impact.	Analytical reports, group discussions and evaluations.
8	2 hour	Discuss AI ethics, privacy, and its effect on the job market	Ethical Challenges in AI	Workshops, discussions on AI ethics.	Research papers, group discussions, case study evaluations.
9	2 hour	Explore future trends and emerging AI technologies.	The Future of AI	Interactive lectures, exploration of recent research.	Research projects, presentations on future AI trends.

11. Course Evaluation

60% theoretical and 40% practical

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

"Artificial Intelligence: A Modern Approach"
by Stuart Russell,

	Peter Norvig
Main references (sources)	"Introduction to AI Robotics" by Robin Murphy
Recommended books and references (scientific journals, reports...)	Articles from IEEE Computer Society AI industry reports from McKinsey & Company
Electronic References, Websites	edX.org (Open courses on e-commerce and network security) arxiv.org (AI and machine learning research papers)

Course Description Form

1. Course Name: pharmacology of the kidney	
2. Course Code: MTDY2205	
3. Semester / Year: 2 Semester/ 2025–2026	
4. Description Preparation Date: 28_2_2026	
5. Available Attendance Forms: available	
6. Number of Credit Hours (Total) / Number of Units (Total) 3 unit =15 hr	
7. Course administrator's name (mention all, if more than one name)	
Name: M.MS Ph. Maha Hassan Sahi Email: Phmahawi67@gmail.com	
8. Course Objectives	
Course Objectives	Course Objective In the final of this course student can understand drug Related to Kidney and there action mechanism of action adverse effect and any information about dug disease related to kidney
9. Teaching and Learning Strategies	
Strategy	1.Simulation-Based Learning: Utilizing various diagnostic techniques and simulation labs to train students on realistic clinical scenarios in a safe environment. 2. Problem-Based Learning: Presenting complex clinical cases for students to analyze, enhancing critical thinking and decision-making skills. 3. Direct Clinical Education: Engaging students in practical training in both real and virtual clinical settings.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1_2	4	Action side effect contraindication	Diuretic drugs	available	Daily exam Med term Final exam
3	2	Action side effect contraindication	Anti-hypertensions	available	Daily exam Med term Final exam
4	2	Action side effect contraindication	Vasopressor Inotropes	Available	Daily exam Med term Final
5_6	4	Action side effect contraindication	Colloid and crystalloid	available	Daily exam Med term Final
7	2	classification effect indication	Iron supplementation	available	Daily exam Med term Final
8_9	4	classification adverse effect	Anticoagulation	available	Daily exam Med term Final exam
10	2	dose side effect	Protamine sulfate	available	Daily exam Med term Final exam
11_12	2	Dose side effect action	Hemodialysis	available	Daily exam Med term Final exam
14_15	2	Dose side effect classification	Anticoagulant	available	Daily exam Med term Final exam

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

Assessment and Grading (Total: 100 Marks)

• **Continuous Assessment (60 marks):**

- Daily preparation
- Quizzes and monthly exams
- Written assignments
- Reports
- Attendance and participation

- **Final Examination (40 marks):**
- Written/Theoretical exam: 35 marks

11.

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)	Primary Textbook: <i>kidney Pharmacology</i> by Kenneth Arndt and Jeffrey M. Sobel
Main references (sources)	
Recommended books and references (scientific journals, reports...)	○ Research articles on kidney pharmacology ○ Product monographs and clinical guidelines
Electronic References, Websites	

Course Description Form

1. Course Name: Biostatistics					
2. CourseCode : MTDY2207					
3. Semester / Year: 2 semester / 2025–2026					
4. Description Preparation Date: 26-2-2026					
5. Available Attendance Forms: In person					
6. Number of Credit Hours (Total) / Number of Units (Total)					
Number of Credit Hours (Total) 60 hours					
7. Course administrator's name)mention all, (if more than one name					
Name: D.Mohammed Alwan Hashem					
8. Course Objectives					
Course Objectives		1- Identify the concept of inferential and inferential statistics. 2- Identify the null and alternative statistical hypotheses and how to verify them. 3- Identify the differences between statistics. 4- Enabling students to be able to interpret statistical results. 5- Enabling students to be able to distinguish between how to use nonparametric statistics. 6- Enabling students to apply statistical methods appropriately in light of each topic.			
9. Teaching and Learning Strategies					
Strat	Strategic teaching and learning methods Audio methods (teaching explanation of the topic) Style of writing on the blackboard The method of direct dialogue between the teacher and the student, with student's evaluation in class participation Conduct experiments.				
10. Course Structure					
Week	Hours	SEMISTER 1	SEMISTER 2	Learning	Evaluation

				method	method
The first week	2Theoretical .	To know and distinguish between the population and the sample and employ sampling methods when selecting the sample	Introduction to statistics		Exams , reports, discussions Quizzes
second week	2Theoretical .	Data tab	Population and sample/methods for selecting samples/parameters and estimates/sample errors		Exams , reports, discussions
the third week	2Theoretical .	Arithmetic mean -	Measures of central tendency 1		Exams , reports, discussions
fourth week	2Theoretical .	The mediator - Manwal	Measures of central tendency 2		Exams , reports, discussions
The fifth week	2Theoretical .	Variance – Standard Deviation Range – Mean Deviation	Data tab - tabular display		Exams , reports, discussions
the sixth week	2Theoretical .	Standard error - coefficient of variation	• Frequency distribution table.		Exams , reports, discussions
Seventh week	2Theoretical .	To employ statistical hypotheses in research	• Tabular display of metadata.		Exams , reports, discussions
The eighth week	2Theoretical .	To reduce the possibility of the researcher making an error when testing the hypotheses, type 1 alpha error and type 2 beta error	• Frequency distribution table for quantitative data.		
Week nine	2Theoretical .	To employ the level of significance / degrees of freedom / examples using the statistical package	• Ascending and descending clustered frequency table.		Exams , reports, discussions
The tenth week	2Theoretical .	To know the inferential statistics of the monthly test	Measures of dispersion1		Exams , reports, discussions
Week eleven	2Theoretical .	To employ statistical hypotheses in research	Measures of dispersion2		Exams , reports, discussions
The twelfth week	2Theoretical .	z test	Measures of dispersion3		Exams , reports, discussions
The thirteenth week	2Theoretical .	T test	Monthly test		Exams , reports, discussions
The fourteenth week	2Theoretical .	F test	Statistical hypotheses/what are statistical hypotheses/null and alternative hypotheses		Exams , reports, discussions
The fifteenth week		Monthly exams	The chances of the researcher making an error when testing hypotheses/type 1 alpha error/type 2 beta error		

11. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily

written exams, reports etcor ,oral, monthly preparation, daily

12. Learning and Teaching Resources

(if any ,curricular books) Required textbo	Introduction to Statistics by Dr. Khashia Al-Rawi, University of Mosul 2000 - Principles of Statistics by Dr. Khashia Al-Rawi - Naim Thatmi Al-Muhammad - Muayyad Ahmed Al-Younes - Zulayd Khaled Al-Marai
Main references (sources)	From methodological books, help books, Internet, and scientific research
Recommended books and references (...scientific journals, reports)	Iraqi Scientific journals in basic specializations
Electronic References, Websites	Al-Muthanna University e-learning website https://agr.mu.edu.iq/