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

Al-huda University College

Course Description

Pharmacy Program

2026 - 2025

Course Description Form

1. Course Name:

Human biology

2. Course Code:

3. Semester / Year:

2024-2025

4. Description Preparation Date:

2024

5. Available Attendance Forms:

attendance

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

3

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

Name: Prof. Dr. Ismail Taha Ibrahim
Email: ismailtaha2018@Gmail.co

8. Course Objectives

Course Objectives	**to learn about cells, their types, biological processes, metabolic processes, chemi reactions, and their divisions (mitosis and meiosis). They also include learn about the importance of vital elements for life and how cells contribute to build the body of a living organism, including its various vital systems and genes.**

9. Teaching and Learning Strategies

Strategy	Brainstorming Interactive discussions Gaining skills in using books and modern teaching methods Gaining skills in analyzing results and conducting scientific research

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to Biolog	Introduction to Hun Genetics	Lectures	Written Exam
2	2	Cell and tissue struct and the function of th parts	Study of blo components, proteins, a blood types	Lectures	Written Exam
3	2	Study of immunity, types, and immune cel	Immunity	Lectures	Written Exam
4	2	Study of the respirat system, its parts, and	Respiratory system	Lectures	Written Exam

		process of gas exchan			
5	2	Study of the digest system, its parts, and supporting glands.	digestive system	Lectures	Written Exam
6	2	Study of the lympha system, its functio components, and lyn nodes.	lymphatic system	Lectures	Written Exam
Midterm					
8-9	4	A study of circulatory syst which includes the h and its parts, bl vessels and their typ arteries and veins their structures, blood pressure.	circulatory system	Lectures	Written Exam
10-11	4	Study of metaboli enzymes, gluc breakdown, the Kr cycle, and the respirat chain.	Study of metabolism	Lectures	Written Exam
12	2	Study of muscles nerves, their types, types of nerve impulse	Study of muscles nerves	Lectures	Written Exam
13-14	4	Study of carbohydra fats, proteins, vitam and minerals	Metabolism	Lectures	Written Exam
15	2	Study of genetic mate	Genome	Lectures	Written Exam

11. Course Evaluation
100 points 20 points for practical labs 20 points for the midterm exam, written exams, student interactions, and activities 60 points for the final exam

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Human Biology by Willy Cushwa
Main references (sources)	Human Biology by Douglas Wilkin and Jean Brainard
Electronic References, Websites	Resources for Cell Biology Flipped Course

13. Course Name:	
Principles of Pharmacy Practice	
14. Course Code:	
15. Semester / Year:	
2024-2025	
16. Description Preparation Date:	
2024	
17. Available Attendance Forms:	
In person	
18. Number of Credit Hours (Total) / Number of Units (Total)	
Number of units: 2	
19. Course administrator's name (mention all, if more than one name)	
Dr. Mohamed Farag Abdel Halim dr.farag@Gmail.com	
20. Course Objectives	
Course Objectives	1 Provide a brief overview of the ancient practice of pharmacy . 2 Study the numbers and abbreviations commonly used in medical prescriptions a their meanings . 3 Study the components of a standard prescription and units of measurement quantities and volumes in different systems . 4 Study the different measurement systems and the relationships between these systen 5 Study the methods and tools for measuring different weights and volumes . 6 Study how to prepare larger or smaller quantities of prescriptions . 7 Study the expression of concentrations and doses in different ways
21. Teaching and Learning Strategies A- Cognitive objectives 1 -The student will have a brief knowledge of the history of pharmacy practice . 2 -Student knowledge of the parts of a standard prescription . 3 -The student's knowledge of the units of measurement of doses, quantities, different volumes and their different systems . 4 Knowing the tools for measuring weights and volumes and how to use them to prepare larger or smaller quantities of medical prescriptions . B - Course specific skill objectives . 1 -Acquire the skill of reading medical prescriptions and understanding their abbreviations . 2 Acquire the necessary skill to prepare the required quantities of medical prescriptions . C- Emotional and value-based goals 1 .Enhance students' ability to understand and prepare medical prescriptions . 2 .Enhancing students' ability to think and analyze . 3 -Enhancing students' ability to ask objective questions and conduct scientific discussions . D - General and transferable skills (other skills related to employability and personal development) 1 .Acquire the skill of studying medical prescriptions and related matters . 2 .Acquire skill in using books and modern teaching methods . 3 .Gaining the skill to analyze scientific results and discussions .	

Strategy	Brainstorming Interactive discussions Gaining skills in using books and modern teaching methods Gaining skills in analyzing results and conducting scientific research

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Introduction to history of pharm practice and the basics pharmacy accounting	Pharmacy accounts	Lectures	Written Exam
2-3	4	Learn about the metric system and its units of measurement	Metric system	Lectures	Written Exam
3-4	4	Ability to understand prescriptions and medical orders Inside hospitals	Reading recipes	Lectures	Written Exam
5	2	Ability to calculate doses based on weight The patient's age and other factors and the solution Practical issues on this	Dosage calculation	Lectures	Written Exam
6	2	Ability to solve practical problems on the account Dosages and how to apply them in practice practical	Practical issues	Lectures	Written Exam
Midterm					
8-10	6	Learn how to express	Different methods	Lectures	Written Exam

		concentrations and .doses Percentage and power ratio Learn how to prepare prescriptions With different expressions of doses and concentrations	To express Doses		
10-12	6	Knowing the amount of preparation to prepare larger or smaller quantities based on the quantities mentioned in the recipe Medical	How to prepare different quantities From the recipes Medical	Lectures	Written Exam
12-15	6	Recognizing the differences between density and specific gravity and special size	Learn the methods Expressing density fluids	Lectures	Written Exam

23. Course Evaluation	
100 points 30 points for the midterm exam, written exams, student interactions, and activities 70 points for the final exam	
24. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Pharmaceutical calculations Howard C. Ansel2010
Main references (sources)	Remington: The science and practice of pharmacy David B. Troy. 2006
Electronic References, Websites	Physicochemical Principles of Pharmacy Roseane Santos2006

1. Course Name:
Analytical Chemistry-1
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
Theoretical lecture 3hr, practical 2hr, credit hour=4
7. Course administrator's name (mention all, if more than one name)
Dr. Maged Ahmed Al-SawyDr.maged.elsawy@Gmail.com
8. Course Objectives

Course Objectives	**1- Providing students with scientific expertise in the field of analytical chemis using various methods of neutralization reactions.** **2- Study the effect of acidity on various reactions.** **3- Qualitative analysis mechanism and its applications** **4- Detection of compounds by a number of methods using precipitation, oxidation-reduction titration and complex formation.**

9. Teaching and Learning Strategies	
Strategy	1-Theoretical lectures 2- Showing application videos to help understand the material. 3- Holding scientific sessions in the form of discussions 4- Using textbooks 5-Brain storming

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Weight, concentrati and electrolytes strong and weak	Review the basic conc of analytical chemistry	Lectures	Written Exam
2-3	6	Statistical data analysis Sedimentary gravimetric methods	Evaluation of gravime analysis methods	Lectures	Written Exam
4-5	6	Organic and inorga sediments	Scope of applications gravimetric analysis	Lectures	Written Exam
6	3	Acid-base balance And the acidity	Introduction to Volumetric Analysis Methods	Lectures	Written Exam

		calculation			
Midterm					
8-9	6	Chemical equilibri reactions	chemical equivalence	Lectures	Written Exam
10-11	6	Details of sediment roads	Different sediment methods	Lectures	Written Exam
12-13	6	Volumetric methods complex systems	Calculating pH in complex system	Lectures	Written Exam
14	3	Oxidation-reduction reactions	balance in the re system	Lectures	Written Exam
15	3	Various spectral methods	Spectral analysis	Lectures	Written Exam

11. Course Evaluation
100 points 20 points for practical labs 20 points for the midterm exam, written exams, student interactions, and activities 60 points for the final exam

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Fundamentals of Analytical Chemistry by Skoog and West
Main references (sources)	Fundamentals of Analytical Chemistry by Skoog and West

1. Course Name:
Mathematics and Biostatistics
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
3 Hours / 2 Units
7. Course administrator's name (mention all, if more than one name)
Prof. Dr. Faiq Hammad Antar Prof. Dr. Nazem Abdullah Abd
8. Course Objectives

Course Objectives	**Understand the basic concepts of descriptive and inferential statistics**. **Apply various statistical methods to health and biological data**. **Analyze and interpret data correctly**. **Use statistical software to analyze data**. **Develop critical thinking and problem-solving skills related to data**

9. Teaching and Learning Strategies

Strategy to encourage students to learn the basics of biostatistics and apply statistical methods.
Cognitive Objectives
Distinguish between types of statistical data (quantitative, qualitative, continuous, and discrete).
Understand the basics of probability distribution and its application in practical problems.
Understand basic mathematical concepts such as equations, functions, sequences, limits, differential and integral calculus.
Understand the basic principles of statistics such as the arithmetic mean, median, dispersion, and normal distribution.

Course Skill Objectives:

- Focuses on developing students' abilities to:
- Solve mathematical and statistical problems using organized and systematic steps.
- Graphically represent data using programs such as Excel or manual tools.
- Use statistical laws and equations in analysis and decision-making.

o Affective and Value-Based Objectives

Aims to enhance:

- Accuracy and discipline in calculations and analysis.
- Patience and focus in dealing with complex mathematical problems.
- Self-confidence in dealing with numbers and data.
- Emphasis on logical thinking and quantitative analysis as tools for understanding reality.

o General and Transferable Skills (other skills related to employability and personal development)
Empowering the student with the mathematical and statistical foundations necessary to analyze data, understand quantitative phenomena, and solve problems in a precise, scientific manner that supports their academic and professional specialization

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Mathematics: General concepts	concepts; coordinate graph in plane; inequal absolute value or magnitu function and their graphs; displacement function; sl and equation for lines.	Lectures	Written Exam
2	3	Limits and continuity	Limits; theorem of limits; li involving infinity; continuit	Lectures	Written Exam
3	3	Derivatives	Line tangent and derivati differentiation rules	Lectures	Written Exam
4	3	Integration	Indefinite integrals; rules indefinite integrals	Lectures	Written Exam
5	3	Biostatistics	General concepts of statist statistical methods; statist theory; applied statist statistical operations.		
6	3	Probability concepts	Properties of probability; theory and set notation (ba notation); count techniques- permutations combinations;		
Midterm					
7	3	Basic Concepts	Base Concepts in Biostatis with clinical application	Lectures	Written Exam
8	3	Frequency distributions	Frequency distributio Presentation of frequency	Lectures	Written Exam
9	3	measures of cen Tendency, mean	measures of central Tender mean	Lectures	Written Exam
10	3	The Median	The Median, The mood, relationship	Lectures	Written Exam
11	3		measures of dispersion variability	Lectures	Written Exam
12	3	The Range	The Range, The variance standard Deviation	Lectures	Written Exam
13-15	9	coefficient of Variati correlation analysis	coefficient of Variati correlation analysis	Lectures	Written Exam

11. Course Evaluation

100 points

30 points for the midterm exam, written exams, student interactions, and activities 70 points for the final exam	
12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	**An introduction to statistical in Ference and data**

1. Course Name:	
Democracy	
2. Course Code:	
3. Semester / Year:	
2024-2025	
4. Description Preparation Date:	
2024	
5. Available Attendance Forms:	
In person	
6. Number of Credit Hours (Total) / Number of Units (Total)	
1	
7. Course administrator's name (mention all, if more than one name)	
Dr.emad	
8. Course Objectives	
Course Objectives	**Understand the basic concepts of democracy (such as popular sovereign elections, separation of powers, and the rule of law)**. .**Know the types of democracy (direct, representative, participatory) and th historical development**

9. Teaching and Learning Strategies

1- Holding scientific sessions in the form of discussions
2- Using textbooks
3-theoretical lectures

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	The concept of democra	Definition of democracy	Lectures	Written Exam
2	1	The emergence democratic ideas	The emergence of democratic ideas	Lectures	Written Exam
3	1	Concepts of Democra in the Middle Ages	Democracy in the Middle Ages	Lectures	Written Exam
4	1	Differences in the conc of democracy	Different Concepts Democracy	Lectures	Written Exam
5	1	Characteristics of democratic systems	Characteristics democratic systems		
6	1	Conditions, components, and pillars of democracy	Conditions, compone and pillars of democra		
Midterm					
7	1	Direct and semi-direct democracy	Types of democracy	Lectures	Written Exam
8	1	The most important applications of democracy	Democracy Applications	Lectures	Written Exam
9	1	The concept of democracy in Islam	Democracy in Islam	Lectures	Written Exam
10	1	Majority-based systems	Majority-based systems	Lectures	Written Exam
11	1	Positives of democracy	Positives of democracy	Lectures	Written Exam
12	1	Disadvantages of democracy	Disadvantages of democracy	Lectures	Written Exam
13-15	3	The concept of shared democracy	Common Principles of Democracy	Lectures	Written Exam

11. Course Evaluation

100 points
30 points for the midterm exam, written exams, student interactions, and activities
70 points for the final exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	**1-Political Systems by Hamid Hanoun** **2- Democracy from the Greeks to the Postmodern World by Hashem Al-Milani**

1. Course Name:
Pharmaceutical calculation
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
In person
6. Number of Credit Hours (Total) / Number of Units (Total)
Number of units:4
7. Course administrator's name (mention all, if more than one name)
Dr.Mohamed Farag Abdel Halim dr.farag@Gmail.com
8. Course Objectives

Course Objectives	**1 Study how to calculate pharmaceutical ingredients in prescriptions** **2Study how to calculate doses for active ingredients and different quantities preparing different pharmaceutical forms.** **3 DStudy of the physical and biological parameters of pharmaceutical forms.** **4 studyHow to dilute or concentrate pharmaceutical solutions.** **5 studyHow to prepare osmotic solutions.** **6 Study how to prepare intravenous solutions In its various types**

9. Teaching and Learning Strategies

Strategy	**A- Cognitive objectives** -1 Student knowledgeHow to calculate quantities and volumes of pharmaceutical component 2 knowledgeStudent How to Calculate Doses of Active Ingredients. -3 KnowledgeThe student will be introduced to the main physical and biological parameters different pharmaceutical forms. -4 KnowledgeHow to dilute or concentrate pharmaceutical solutions and apply this in prepar various types of intravenous solutions. **for- Course skill objectives.** -1 AcquisitionSkill in accurately calculating doses and components of different pharmaceuti forms -2 Acquire the necessary skill toPreparing the required quantities of intravenous solutions **C- Emotional and value-based goals** 1- Enhancing students' ability toUnderstand dosage and concentration calculations. 2. Enhancing students' ability to think and analyze.

	3- Enhancing students' ability to ask objective questions and conduct scientific discussions. **D - General and transferable skills (other skills related to employability and perso development)** 1 acquisition Skill in studyIntravenous solutions and related matters 2 acquisitions Skill in use books and means education Modern 3 acquisition Skill in analysis Results and discussions Scientific

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Introduction to how dilute and concentrate Pharmaceutical preparations How to solve proble and applications ab dilution concentration Pharmaceuticals	Relief and concentratio Preparations Pharmacist	Lectures	Written Exam
2-3	6	Ability to calcu concentrations pharmaceutical substances	Practical issues on dilution and concentration calculations for pharmaceutical preparations	Lectures	Written Exam
4-5	6	Ability to understa how to prepare isoto solutions Osmosis	equal solutions Osmosis	Lectures	Written Exam
6	3	Learn how to prep electrolyte solutions And calculate th concentrations accord to milliosmoles milliosmoles. Mall and mu equivalent	Different methods To express Doses	Lectures	Written Exam
Midterm					
8-10	9	Learn how to prep standard solutions And preparing soluti of differ concentrations	Standard solutions	Lectures	Written Exam
10-12	9	Learn about prepar intravenous soluti	Intravenous solutions	a lecture	Written Exam

		their properties, and h to calculate th concentrations.			
13-15	9	Learn how to calcu the flow rate intravenous solutions.	Calculate the rate Syriac	a lecture And my work	Written Exam

11. Course Evaluation
100 points 20 points for practical exam 20 points for the midterm exam, written exams, student interactions, and activities 60 points for the final exam

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Pharmaceutical calculations Howard C. Ansel2010
Main references (sources)	Pharmaceutical calculations Stoklosa 2006

1. Course Title
Organic chemistry I
2. Course Code
3. Chapter / Year / semester
Second semester / academic year 2024-2025
4. Date of preparation of this description
2024
5. Presence /Online
Presence
6. Number of study hours (total) / Number of units / (total)
Number of units=4
7. Name of Course Supervisor (If more than one name is present, please also provide)
Dr. Kotaiba Fadil Nafe Delan qotebh987654321@gmail.com

Course Objectives of Organic Chemistry: 1	**Course objectives**
1. Understand the behavior, structure, and reactions of carbon-containing compounds 2. Analyze and classify the chemical and physical properties and preparation processes of alkanes, alkenes, alkynes, alcoholic substituents, ethers, alkyl halides, and study their stereochemistry, as well as their chemical reactions. 3. Developing new compounds and finding better ways to manufacture existing compounds. Many application areas, such as the pharmaceutical and cosmetic industries.	

Teaching and learning strategies					
Provide an overview of organic compounds, including their chemical structure, physical properties, and the types of bonds that form between their molecules or with other compounds, as well as their chemical reactions and various uses, especially in the pharmaceutical field.					
Course structure					
Evaluation Method	Learning Method	Unit or Topic Name	Required Learner Outcomes	Hours	Week
Oral and written exam	lecture	Introduction to Organic Chemistry	Introduction to Organic Chemistry	3	1
Oral and written exam	lecture	Alkanes and Methane	Understand the importance of alkanes and paraffins, saturated compounds in organic synthesis and other applications. Alkanes and Methane. Lecture, Oral and Written Exam	6	2-3
Oral and written exam	lecture	Alkenes 1 and 2	Review the chemical properties of alkenes, th uses, and the differences between them a saturated compounds. Alkenes 1 and 2. Lectu Oral and Written Exam	5	4-5
Oral and written exam	lecture	Alkynes and Dienes	Study the properties of unsaturated alker olefins, and dienes, and their importance in synthesis of organic compounds a pharmaceutical drugs. Alkynes and Dien Lecture, Oral and Written Exam	5	6-7
Oral and written exam	lecture	Stereochemistry 1 and 2	Stereochemistry Is a branch of chemistry concerned with the study of the spatial arrangements of atoms relative to each other in a molecule. It is crucial to the action of a drug due to its shape, and the drug molecule is an important factor in determining how it interacts with various biological molecules. Stereochemistry 1 and 2 Lecture, Oral and Written Exam	8	8-9
Oral and written exam	lecture	Alcohols	Alcohols are a type of organic compound t contain at least one hydroxyl (-OH) functio group attached to a saturated carbon atom. Th are used as a solvent for chemicals to prep pharmaceutical solutions. Alcohols. Lectu Oral and Written Exam	4	10

Oral and written exam	lecture	Ethers	Ether is the name for a type of orga compound that contains an ether functio group, which is an oxygen atom, attached to t alkyl groups and has wide pharmaceuti applications. Ethers. Lecture, Oral and Writ Exam	4	11
Oral and written exam	lecture	Alkyl Halides	Alkyl halides are important in chemical industry because they can be used as starting materials for a variety of reactions. These reactions include substitution, elimination, and addition reactions of nucleophilic groups. In general, alkyl halides are versatile building blocks of industrial chemistry due to their ability to participate in a wide range of reactions. Alkyl Halides Lecture, Oral and Written Exam	6	12-13
Oral and written exam	lecture	Cycloalkanes	Cycloalkanes are major components of lubricating oils and are used in chemical synthesis as solvents. Cyclopropane is a small ring also found in a large number of biologically active compounds, including natural products and pharmaceuticals. Cycloalkanes Lecture, Oral and Written Exam	4	14-15

11. Course Assessment

100 marks
20 marks Practical Labs
20 marks Midterm and Written Exams
60 marks Final Exam

12. Learning and teaching resources

Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomason learning; CA,USA; 2000	Textbooks and references
Organic Chemistry by Robert T. Morrison and Robert N. Boyd . *Organic Chemistry by McCurry; 5th ed. Thomason learning; CA,USA; 2000	references
Organic Chemistry by Janice Gorzynski Smith, 1st edition	references

1. Course Name
Histology
2. Course Code
3. Semester / Year / Semester
First Stage Second Semester / Academic Year 2024-2025
4. Date of preparation of this description
2024
5. In-Person / Online
In-Person
6. Number of Hours (Total) / Number of Units / (Total)
Number of Units:3
7. Course Administrator Name (if more than one name is also mentioned)
Dr. Ali Sami ismailtaha2018@Gmail.co
8. Course Objectives
Core Course Objectives Providing students with the necessary theoretical knowledge and technical skills in the field of Histology Study
9. Teaching and Learning Strategies

A . Presentation and Presentation **• Brainstorming** **• Interactive Discussions** - Acquire skills in the use of books and modern teaching aids - Acquire skill in analyzing results andscientific research	

10. Course Structure

Week	Hours	Units or Topic Name	Required Learner Outcomes	Units or Topic Name	Evaluation Method
1	2	Introduction to Knowledge Tissue	Introduction to Histology Describe the method of preparation Histology for Histological Examination and identify the different steps taken to prepare a sample Biopsy for imaging . Description of the functio of the species Various microscopes	Introduction t Knowledge Tissue	**Daily exam**

			Used in the science of Tissue .		
2	2	Cell and Installation and tissues	Histological properties of membrane Plasma, organelles Cellular Connections In its function. Description of membrane organelles and non-membrane of the cell	Cell and Installation and tissues	**Written exam**
3	2	Textile Properties	Identification of Histologi Properties for normal cells and death Cells Apoptos. Defining the different stag To divide and divide Reductive from the photos Microscopy. Distinctive features of the types of The four main tissues (Epithelium, Connective, Muscular, Nervous. Description of structural features Supplemental epithelial ce Like microvilli and cilia and communications from Cell to Cell .	Textile Properties	**Written exam**
4	2	Connective tissue	Classification of connecti tissue and its histological properties Home. Description of the two ma categories of connective tissue cells Description of the differer components of ECM and its characteristic Microscopy. A brief discussion of the characteristics of	Connective tissue	**Written exam**

			Special connective tissue Practical: Recognizing The Different Types of Fabric Connective under the microscope .		
5	2	Cardiac system Bowl	Description of the tissues the heart system and blood vessels. description Tissue and Function Laye different heart. Description of Heart Valv & System Delivery.	Cardiac syster Bowl	**Written exam**
6	2	Respiratory	Description of the part tiss Connector of the device respiratory (nasal cavity, Throat, larynx, trachea Pneumonia, bronchial Pneumatic (.	Respiratory	**Written exam**
7			Mid-term exam		
8	2	Lymphatic system	Histology study Lymphatic system and its functions and its components and lymph nodes	Lymphatic system	**Written exam**
9	2	Digestive	Description of Gastrointestinal Tissue and the oral cavity and the esophagus, stomac and intestines Fine and coarse .	Digestive	**Written exam**
10	2	Endocrine	Description of Histologic Features Main of the pituitary glan The hypothalamus, the gla Conifer	Endocrine	**Written exam**
11	2	Urinary	Description of Histologic Features Home & Public Function of the urinary system . Tissue Description and	Urinary	**Written exam**

			Function Kidneys, ureters and blad Urology and urethra		
12		Muscular system	Description of the device tissue Musculoskeletal system Structural.	Muscular syst	**Daily exam**
13	2	Nervous system	Description of Histologic Features Home & Public Function For the nervous system (th system Central Nervous and oceanic. Description of Brain Tissu and the cerebellum and spinal cord . Description of nerve tissu And licking the nervousne . nun	Nervous syste	**Written exam**
14	2	Reproductive	Description of ovarian tissue And the ovarian canal and uterus and tissue change during Menstrual cycle. Description of testicular tissue Conductive ducts and glands associated with it .	Reproductive	**Written exam**
15	2	Blood	Blood Tissue Description Its morphological characteristics. Mention of the different stages To make blood in the marrow bone. and cell types and factions	Blood	=

11. Course Evaluation

100 Degree
20 Degree Practical Laboratories
20 marks for mid-term exams, written exams , interactions and student activities

60 Final Exam	
12. Learning and Teaching Resources	
Basic Histology: Text & Atlas 11th Edition by Luiz Carlos Uchôa Junqueira	Course Books & References
Histology: A Text and Atlas with correlated cell and molecular biology, 7th ed by Wojciech P.M.H Ross.	reference
	Websites

1. Course Name:
combuter
2. Course Code:
3. Semester / Year:
2024-2025
4. Description Preparation Date:
2024
5. Available Attendance Forms:
In-Person
6. Number of Credit Hours (Total) / Number of Units (Total)
3hours / 2 credit
7. Course administrator's name (mention all, if more than one name)
Mamoon Salam Falyyih
8. Course Objectives

Course Objectives	• **Understanding the Importance of Computer Use** • **This course aims to teach students about the concepts of Artifi Intelligence and the Internet, as well as communication networks, th technologies, and classifications.** • **The course also aims to provide students with knowledge of Microsoft Off applications and how to use them effectively** **Encourage students to learn how to use the Internet and its websites correctly gain academic benefits.**
9. Teaching and Learning Strategies	
Strategy	**Strategy for encouraging students to learn computer use and its applications, especia some Microsoft Office applications.** **Strategy for teaching students how to use Internet browsers and websites correctly a securely.**

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Concepts of Hardw and Software with th components	Introduction Computer	Discussions Asking Questic	Presentation using a D Show + Computer Lab
2	3	Computer Portic Hardware Parts, Units, Memory Types	Computer Component	Discussions	Presentation using a D Show + Computer Lab
3	3	Basic CPU Compone and Operating Syst and Graphical U Interface GU	Computer Component	Discussions Asking Questic	Presentation using a D Show + Computer Lab
4	3	Computer netwo Basic; LAN, WA Concept of Internet	Introduction to Inter and Web Browsers	Application us a computer	Presentation using a D Show + Computer Lab

		its Applicatio connecting to internet			
5	3	World Wide Web; W Browsing softwar Search Engi Understanding UI Domain name; Address	Introduction to Inter and Web Browsers	Application us a computer	Presentation using a D Show + Computer Lab
6	3	Basics of electro mail; Getting an em account; Sending receiving ema Accessing sent ema Using Emails	Communications Emails	Application us a computer	Presentation using a D Show + Computer Lab
Midterm					
8	3	Creating shapes inserting pictures Spell Check Grammar Tools, Us Headers and Footers.	Word Processing	Application us a computer	Presentation using a D Show + Computer Lab
9	3	Introduction Spreadsheet Softwa Creating and Formatt Worksheets. Sorting Filtering Data, Us Formulas and Functio	Introduction Spreadsheet Software	Application us a computer	Presentation using a D Show + Computer Lab
10	3	Using Formulas Functions, Using Pi Tables for D Analysis, D Validation and Er Checking, D Visualization: Creat Charts and Graphs.	Spread Sheet	Application us a computer	Presentation using a D Show + Computer Lab
11	3	Software, Overview Popular Presentat Tools, creating a N Presentation, Us Templates and Them Inserting and Formatt Text and Imag Transition Animation Effects.	Presentation Software	Application us a computer	Presentation using a D Show + Computer Lab
12	3	Software, Overview Popular Presentat	Presentation Software	Application us a computer	Presentation using a D Show + Computer Lab

		Tools, creating a N Presentation, Us Templates and Them Inserting and Formatt Text and Imag Transition Animation Effects.			
13	3	Creating shapes inserting pictures Spell Check Grammar Tools, Us Headers and Footers.	Word Processing	Application us a computer	Presentation using a D Show + Computer Lab
14	3				

11. Course Evaluation
100 points 20 points for practical labs 20 points for the midterm exam, written exams, student interactions, and activities 60 points for the final exam

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Information and Communication Technology (2021)
Main references (sources)	TECHNOLOGY In ACTION (2020)
Electronic References, Websites	Microsoft Office 2019 Step by Step 1st Edition (2019)

13. Course Name:
Medical terminology
14. Course Code:
15. Semester / Year:
2024-2025
16. Description Preparation Date:
2024
17. Available Attendance Forms:
In person
18. Number of Credit Hours (Total) / Number of Units (Total)
Number of Credit Hours (Total)=1
19. Course administrator's name (mention all, if more than one name)
Dr.Ali samy
20. Course Objectives

Course Objectives	**Knowing common medical abbreviations.** **Selecting and defining medical terms from reliable sources.**
21. Teaching and Learning Strategies	
Strategy	1-Theoretical lectures 2- Showing application videos to help understand the material.

	3- Holding scientific sessions in the form of discussions 4- Using textbooks 5-Brain storming

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	1	Students will understand the basic knowledge medical terminology from prefix and suffix	Introduction and bo organization	Lectures	Written Exam
2	1	Students will be able to identify the most important terminologies for the respiratory system	Respiratory system pharmacy, pharmaceutics,…etc.)	Lectures	Written Exam
3	1	Students will be able to identify the most important terminologies for the urinary system	Urinary system	Lectures	Written Exam
4	1	Students will be able to identify the most important terminologies for the integumentary system	Integumentary system	Lectures	Written Exam
5	1	Students will be able to identify the most important terminologies for reproductive system	The Reproductive system		
6	1	Students will be able identify the m important terminolog for the gastrointesti	The gastrointestinal tract		

		system			
Midterm					
8	1	Students will be able identify the m important terms for Cardiovascular system	The heart a cardiovascular system	Lectures	Written Exam
9	1	Students will be able identify the m important terminolog for women's reproduct system	Gynecology,pregnancy and childbirth	Lectures	Written Exam
10	1	Students will be able identify the m important terminolog for the vision system	The eye	Lectures	Written Exam
11	1	Students will be able to identify the most important termsfor the nervous system	The nervous system a behavioral disorders	Lectures	Written Exam
12	1	Students will be able to identify the most important terminologies for the musculoskeletal system	Musculoskeletal systen	Lectures	Written Exam
13	1	Students will be able to identify the most important terms for the lymphatic and immune system	Lymphatic and immu system	Lectures	

23. Course Evaluation
100 points 15 points for practical labs 15 points for the midterm exam, written exams, student interactions, and activities 70 points for the final exam

24. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Medical Terminology: A Text/Workbook (4th Edition)
Main references (sources)	Introduction to Medical Terminology, 1st Edition

25. Course Name:
Anatomy
26. Course Code:
27. Semester / Year:
2024-2025
28. Description Preparation Date:
2024
29. Available Attendance Forms:
In person
30. Number of Credit Hours (Total) / Number of Units (Total)
Number of Credit Hours (Total)=1
31. Course administrator's name (mention all, if more than one name)
Dr.laith
32. Course Objectives

Course Objectives	**Learn the names and functions of the anatomy structures.** **Describe how the anatomy systems work together.** **Understand how abnormal anatomy can lead to disease.**

33. Teaching and Learning Strategies	
Strategy	1-Theoretical lectures 2- Showing application videos to help understand the material. 3- Holding scientific sessions in the form of discussions 4- Using textbooks 5-Brain storming

34. Course Structure

Week	**Hours**	**Required Learning Outcomes**	**Unit or subject name**	**Learning method**	**Evaluation method**
1	1	Students will understand the basic knowledge medical terminology from prefix and suffix	Introduction and bo organization	Lectures	Written Exam
2	1	Students will be able to identify the most important terminologies for the respiratory system	Respiratory system pharmacy, pharmaceutics,…etc.)	Lectures	Written Exam

3	1	Students will be able to identify the most important terminologies for the urinary system	Urinary system	Lectures	Written Exam
4	1	Students will be able to identify the most important terminologies for the integumentary system	Integumentary system	Lectures	Written Exam
5	1	Students will be able to identify the most important terminologies for reproductive system	The Reproductive system		
6	1	Students will be able identify the m important terminolog for the gastrointesti system	The gastrointestinal tract		
Midterm					
8	1	Students will be able identify the m important terms for Cardiovascular system	The heart a cardiovascular system	Lectures	Written Exam
9	1	Students will be able identify the m important terminolog for women's reproduct system	Gynecology,pregnancy and childbirth	Lectures	Written Exam
10	1	Students will be able identify the m important terminolog for the vision system	The eye	Lectures	Written Exam
11	1	Students will be able to identify the most important termsfor the nervous system	The nervous system a behavioral disorders	Lectures	Written Exam
12	1	Students will be able	Musculoskeletal systen	Lectures	Written Exam

		to identify the most important terminologies for the musculoskeletal system			
13	1	Students will be able to identify the most important terms for the lymphatic and immune system	Lymphatic and immu system	Lectures	

35. Course Evaluation
100 points 15 points for practical labs 15 points for the midterm exam, written exams, student interactions, and activities 70 points for the final exam

36. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Medical Terminology: A Text/Workbook (4th Edition)
Main references (sources)	Introduction to Medical Terminology, 1st Edition

13. Course Name
Human anatomy
14. Course Code
15. Semester / Year / Semester
First Semester Academic Year 2024-2025
16. Date of preparation of this description
2025
17. In-Person / Online
In-person
18. Number of Hours (Total) / Number of Units / (Total)
3 / 2
19. Course Administrator Name (if more than one name is also mentioned)
Prof. Dr. Ismail Taha M. B. Ch. B. Laith Adhoob
20. Course Objectives

Learn the names and functions of anatomical structures A description of how anatomical systems work together Understanding how abnormal anatomy can lead to illness	**Core Course Objectives**

21. Teaching and Learning Strategies

Lectures Discussions E-Classrooms	

22. Course Structure

Week	Hours	Units or Topic Name	Learning Method	Evaluation Method
1	1	**Introduction to Human Anatomy**	Lectures	Written exam
2	1	Axial structural device	Lectures	Written exam
3	1	skeletal system	Lectures	Written exam
4	1	Joints	Lectures	Written exam
5	1	muscles	Lectures	Written exam
6	1	Abdominal muscles and extremities	Lectures	Written exam
7	1	Mid-term exam	Lectures	Written exam
8	1	Cardiovascular system	Lectures	Written exam
9	1	Nervous system	Lectures	Written exam
10	1	Respiratory system	Lectures	Written exam
11	1	Digestive system	Lectures	Written exam
12	1	Urinary system	Lectures	Written exam
13	1	Endocrine system	Lectures	Written exam

14	1	Reproductive system	Lectures	Written exam
15	1	Encapsulation Device (Leather & Accessories)	Lectures	Written exam

23. Course Evaluation
100 Degree 20 Degree Practical Laboratories 20 marks for the mid-term exam and written exams 60 Final Exam

24. Learning and Teaching Resources	
Anatomy and Physiology for Healthcare by Paul Marshall et al.	Course Books & References
Atlas of Human Anatomy by Frank H. Netter	reference
Understanding anatomy & physiology [electronic resource] : a visual, auditory, interactive approach	reference

1. Course name	
Medical Physics	
2. Course code	
3. Chapter / Year / My semester	
the chapterAcademicthe secondAcademic yearAnd 2024 - 2025	
4. Date of preparation of this description	
2025	
5. In-person/online	
In-person	
6. Number of study hours (total) / Number of units / (total)	
4/3	
7. Name of course administrator (if there is more than one name, also mention it)	
Prof dr Faeq Hammad Antar	
8. Course objectives	
Aims The decision to identification The student With principles Physics Medical Private Spectrum waves electromagnetism, radiation ionizer And other ionizer And their interaction with The material vitality, Photography X-rays Siniya, Photography Sectional, Photography Medical, Diagnosis With waves above audio.	**Core subject objectives**
9. Teaching and learning strategies	
recitation And the show	

Discussions experiments Laboratory the line Inverted	

10. Course structure

Evaluation method	Learning method	Name of units or topic	Desired learner outcomes	Hours	week
Oral and written exam	Lectures	Absorption Principles dynamics Thermal and its applications and its laws	Absorption Principles dynamics Thermal and its applications and its laws	4	1-2
Oral and written exam	Lectures		identification the pressure and heat and units Their measurements	4	3 and 4
Oral and written exam	Lectures		law radiation, identification Kirchhoff; law Plank; law Winz; law Boltzmann	4	5 and 6
Midterm exam					
Oral and written exam	Lectures		Forces And its types, Forces Influential on body, sedimentation and its applications Medical	2	8
Oral and written exam	Lectures		physics The eye And the vision; light, lens, Spectrum electromagnetic and its applications Medical	2	9
Oral and written exam	Lectures		Concepts Energy, power, effort, law save Energy, change Energy in body, the job and energy, representation Food, ability and energy and their applications Medical	4	10-11
Oral and	Lectures		features sound, bezel hearing Human, waves above audio, ear humanity, Types Waves, intensity Waves,	8	12-15

written exam			resistance audio, impact waves on Materials, Devices Diagnosis, Impact Biologist		

11. Course Evaluation	
100 degrees 20 practical labs 20 marks for the midterm exam and written exams 60 Final Exam	
12. Learning and teaching resources	
Physics for Biology and Medical Students, 2nd ed. Paul Davidovits	Textbooks and references
Practical Physics by William Watson	reference
	reference

Second level

1. Course Title	
Organic chemistry II	
2. Course Code	
3. Chapter / Year / semester	
First semester / academic year 2024-2025	
4. Date of preparation of this description	
2025	
5.presence /Online	
Presence	
6. Number of study hours (total) / Number of units / (total)	
Number of study hours 3 theoretical and 2 practical no of unit 4	
7. Name of Course Supervisor (If more than one name is present, please also provide)	
Dr. Kotaiba Fadil Nafe Delan qotebh987654321@gmail.com	
8. Course objectives	
This course aims to provide students with the fundamentals of organic chemistry necessary for the study of pharmacy. The course will focus on understanding and interpreting patterns related to several important chemical groups, including: * Benzene and its derivatives * Aldehydes	**Course objectives**

* Ketones * Carboxylic acids and their derivatives * Amines and their derivatives * Phenols The study will cover the following aspects of each of these groups: * Shape and structure: Understanding the geometric dimensions and atomic arrangement of molecules. * Nomenclature: Learning the rules for naming organic compounds. * Bonding and hybridization: Exploring the types of chemical bonds and how atomic orbitals hybridize. * Stability: Estimating the stability of compounds. * Acidity and basicity: Understanding the acidic and basic behavior of compounds. * Solubility: Predicting the solubility of compounds in different solvents. * Reactivity: Studying the chemical reactions in which these compounds participate.	
Teaching and learning strategies	
Knowledge 1. Establishing a strong knowledge of organic chemistry: We prepare students to gain a deep and broad understanding of organic chemistry, which forms the cornerstone of their future learning in pharmaceutical chemistry. 2. Instilling a culture of laboratory safety: We emphasize that laboratory safety is a shared responsibility. Every student learns the importance of working with extreme caution to avoid accidents such as chemical spills, broken glassware, and fires. 3. Mastering basic chemical techniques: We enable students to identify diverse chemicals and train them in basic techniques covering simple chemical reactions. Skills 1. Critical thinking and problem-solving in the laboratory: You will enhance your ability to think critically to design experiments, interpret complex data, and troubleshoot laboratory problems effectively. 2. Accuracy and attention to detail: We will develop your meticulous attention to detail and meticulous precision, two qualities vital for performing organic chemistry procedures proficiently. 3. Effective communication skills: You will develop your written and oral communication skills to confidently and clearly present and discuss organic chemistry	

concepts.

4- Time Management and Organization: You will practice time management and organizational skills to cope with the intense workload and pace of the organic chemistry course.

Learning and Teaching Methods

1. Delivering scientific lectures

2. Using educational video and video models to facilitate a detailed visual experience of organic chemistry mechanisms. This will help students understand and learn the reaction rules more quickly.

- Conducting practical experiments

4. Preparing scientific research, individually or in groups

5. Assigning students homework

6. Assigning students to prepare seminars and discussions

Course structure

Evaluation Method	Learning Method	Unit or Topic Name	Required Learner Outcomes	Hours	Week
Scientific tests	lecture	Aromatic compounds	**Aromatic hydrocarbons (aren are hydrocarbons whose molecular structure includes at least a group of six carbon atoms, such as benzene, toluene, and ortho-, para-, xylene. Approximately 35 mill tons of these compounds produced annually. They obtained from the distillation coal tar and are used to prod many chemicals and polym including styrene, phenol, anili polyester, and nylon.**	12	1-4
Written exam	lecture	Carboxylic acid	**They are organic acids classified the presence of a carboxyl (COC functional group and are used many medical fields.**	9	5-7

Oral and written exam	lecture	**Amines**	**Amines are organic compou containing one or more nitro atoms bonded to carbon ato Large-molecular amines are v biologically active.**	6	8-9
Oral discussion	lecture	**Ketones and aldehydes**	**Ketones and aldehydes are used reagents, solvents, and start materials for the production other substances. Formaldehyde used to preserve biological samp and also to manufacture polym such as Bakelite. Ketones have l toxicity and can dissolve ma chemicals. Plant phen compounds are a vital nutrient humans and exhibit signific antioxidant activity, along w other health benefits.**	12	10-13
Oral and written exam	Lecture	Phenol compounds	**Plant phenolic compounds are vital human nutrient and exhi significant antioxidant activity addition to other health benefits.**	6	14-15

11. Course Assessment

100 marks

20 marks Practical Labs

20 marks Midterm and Written Exams

60 marks Final Exam

12. Learning and teaching resources

Organic Chemistry by Robert T. Morrison and Robert N. Boyd. *Organic Chemistry by McCurry; 5th ed. Thomason learning; CA,USA; 2000	Textbooks and references
Organic Chemistry by Janice Gorzynski Smith, 1st edition.	references
Organic Chemistry | ScienceDirect	references

13. Course Name
Microbiology-1
14. Course Code
15. Semester / Year / Semester
First Semester / Academic Year 2024 - 2025
16. Date of preparation of this description
2024
17. In-Person / Online
Came
18. Number of Hours (Total) / Number of Units / (Total)
Number of Units: 5
19. Course Administrator Name (if more than one name is also mentioned)
Prof. Dr. Ismail Taha Ibrahim ismailtaha2018@Gmail.com

20. Course Objectives	
Study the structure of bacteria and study the environment and its nutritional ne for growth and reproduction • Types of bacteria and sterilization methods Methods of infection, transmission of bacteria, diseases caused by them, and h they overcome the immune system • Study of antibiotics and how bacteria resist them	**Core Course Objectives**
21. Teaching and Learning Strategies	
A. Cognitive Objectives Lectures • Discussions • Electronic Classrooms • Research work	

22. Course Structure

Hours	Week	Required Learner Outcomes	Units or Topic Name	Evaluation Method	Learning Method
3	1	Study the history of microbiolog and the anatomy of the bacterial cell (Appendix Superficial, Capsule, Wall Bacterial cell **G+ve & G-ve** Cytoplasmic membrane Practical: Forms of bacteria	Introduction to Microbiology	examination	Lecture
3	2	Organ Function Knowledge Bacterial chemical and physical growth; Growth and reproduction of bacteria	Growth Requirements Bacterial	**Written exam**	Lecture

		Practical: Pigmentation of bacte			
3	3	Basic Knowledge For nucleic acids and genetic codes and types of Mutations c; Methods of transmission of gene material; Biotechnology Recombinant DNA Practical: Movement of bacteria Primate in bacteria	Drug Design With the help of Genetics in Bacteria	**Written exam**	Lecture
3	4	Primate in bacteria Practical: Spore Pigmentation and identify its locations	Primate in bacteria	**Written exam**	Lecture
3	5	For Sterilization:)Chemical Methods + Physical (Practical: Sterilization of Cultur	Sterilization and its methods	**Written exam**	Lecture
3	6	Chemotherapy (Antibodies) vitality and others (Practical: Isolation of Bacterial Isolates	Antibiotics	**Written exam**	Lecture
	7	Mid-Year Exam			
3	8	Pseudomonas bacteria Naiseria Practical: Diagnosing Isolates	Pseudomonas bacteria Naiseria	**Written exam**	Lecture
3	9	Staphylococcus bacteria And the rosary Practical: Representation Tests Dietary: Oxidase Screening Catalysts	Staphylococcus bacter And the rosary	**Written exam**	Lecture
3	10	Bacillus bacteria and Vibrillus cholera Practical: Representation Tests Dietary: Urize Screening	Bacillus bacteria and Vibrillus cholera	**Written exam**	Lecture
3	11	Clostridium Practical: Bacterial Interaction For the street	Clostridium	**Written exam**	Lecture
3	12	Diphtheria bacteria and love bacteria Youth and Listeria	Diphtheria bacteria an love bacteria Youth and Listeria	**Written exam**	Lecture

3	13	Bacteria of the intestinal family Practical: Diagnosing Bacteria Fermented and unfermented Lactose	Bacteria of the intestin family	**Written exam**	Lecture
3	14	Infectious Twist Bacteria and salmonella Practical: Bacterial Diagnosis Fermented and unfermented Lactose	Infectious Twist Bacte and salmonella	**Written exam**	Lecture
3	15	Tuberculosis and leprosy bacteri Practical: Inspection Test Antibiotic allergy Vitality	Tuberculosis and lepro bacteria	**Written exam**	Lecture

23. Course Evaluation
100 Degree **20 Degree Practical Laboratories** **20 marks for mid-term exams, written exams and activities** **60 Final Exam**

24. Learning and Teaching Resources	
-LiLLipincotts illustrated review microbiology, 2nd ed. -A color Atlas of microbiology by Ronald John Olds -Jawetz, Melnick, & Adelberg's. Medical Microbiology 26th ed.	Course Books & References
& -Bailey, Scott's Diagnostic Microbiology 14th ed. -Hugo and Russell's Pharmaceutical Microbiology; 8th. ed.	reference

25. Course Name	
Microbiology11	
26. Course Code	
27. Semester / Year / Semester	
Second Semester / Academic Year 2025 - 2024	
28. Date of preparation of this description	
2025	
29. In-Person / Online	
Came	
30. Number of Hours (Total) / Number of Units / (Total)	
Number of Units:5	
31. Course Administrator Name (if more than one name is also mentioned)	
Dr. Ali Sami Dr.maged.elsawy@Gmail.com	
32. Course Objectives	
Studying and providing students with information about parasitic viral diseases affecting the health of the	**Core Course Objectives**

Human beings and their most important causes, vectors, and ways to t and control them . Studying the basic information about the immune system, its compone and the method of work and discuss the most important disorders of the immune system the sources of imbalances that lead to For those disorders .	

33. Teaching and Learning Strategies

A. Cognitive Objectives Presentation and Presentation ● Interactive Discussions ● Brainstorming ● Research and Induction 2. Acquire skills in the use of books and modern teaching methods. 3. Acquire skill in analyzing results and scientific discussions	

34. Course Structure

Week	Hours	Required Learner Outcomes	Units or Topic Name	Learning Method	Evaluation Method
1	3	- Introduction to Parasitology and the Most Important Parasites that infect humans and its classification - The most important barriers Chemical, physical and immunological Immediate immune response and the late	Introduction to Parasites	Lectures	**Written exam**
2	3	Description of Amoeba Pathoge Textile) Practical: View slides Ready for Amoeba Nurse Examination Microscope + Slideshow Data show Description of intestinal flagella And the whips of the reproducti system and textile whips and cilia Practical: Ready-made slides fo Whips are examined with a microscope + Slideshow with a Data show	Amoeba	Lecture	**Written exam**

3	3	Malaria, Life Cycle and pathology Practical: Ready-made slides fo Plasmodium microscopy + Comparison between different types For hematopoietic diseases with malaria and feline disease Practical: Ready-made slides fo Plasmodium and feline disease parasites Microscopic Examination + Presentation Data show chips -	Malaria parasites - Blood flagella	Lecture	**Written exam**
4	3	Tapeworms are cyclical Her life and pathology Practical: Ready-made slides fo Tapeworm eggs examined Microscope + Slideshow With a data show device - Tapeworms in pigs and tapeworms in cows Practical: Ready-made slides fo Tapeworms in cows Pigs and larvae are examined w a microscope + a slide show wit data show device - Dwarf tapeworm Practical: Ready-made slides fo Dwarf tapeworms Microscopic Examination + Presentation Chipset with device Data show	Tapeworms	Lecture	**Written exam**
5	3	Hemochosomiasis and urinary tracts, Classification, Forms and Cycle Life, pathology, diagnosis Treatment Practical: Ready-made slides fo Schistosomal worm eggs The larvae are examined with a microscope +	Schistosomiasis	Lecture	**Written exam**

		Slideshow with a Data show			
6	3	Ascaris worms and worms The hook, its description and its shapes and its life cycle Practical: Ready-made slides fo Ascaris worm eggs The larvae are examined with a microscope + Slideshow with a device Data show Diseases and Treatment	Worms/ Parasites	Lecture	**Written exam**
7	2	Pinworms and worms Cylindrical Shapes and Cycle Her life, her diseases and her wa Diagnosis and treatment Practical: Ready-made slides fo Pinworm eggs The cylinder is examined with a microscope. + Data show - Elephantiasis and Trachnyla worms, its forms, its life cycle, Pathology, Diagnostic Methods Treatment Practical: Slideshow with a devi Data show about worms Causes of elephantiasis and Trajenella -	Pin worms And the worms Cylindrical Elephant worms	Lecture	**Written exam**
8		Cytokines, their definition and their families and its functions: Specialized Immunology, B and T Cells - Integration in the immune response Both non-specialized and specialized response	Cytokines Specialized Immunology	Lecture	**Written exam**
9	4	Antibodies: their types, forms, precise and basic structures, and function - Definition of hypersensitivity reactions	Antibodies - Hypersensitivity	Lecture	**Written exam**

		and the mechanics of sensing reactions Type I, II and Up To IV - Definition of tumors and their causes, and the mechanical that leads to the growth of Tumors How Tumors Escape From Immune response, delusional Strategies used in therapy	and immune tumors		
10	2	Endurance and autoimmunity - Mechanical accompanying damage Causing the Breaking of the Possibility Presence of autoantibodies	Autoimmune	Lecture	**Written exam**
11	3	- Composition of viruses: basic infectious, genetic material, outer envelope - Describe the different stages of reproduction Viruses and the most important substances that Produced during the reproductic process	Viruses are synthesized and reproduced	Lecture	**Written exam**
12	3	The one-step curve of growth Viruses **,** Isolation Methods Viruses and the most important mutations Genetics - Description of the most important DNA viruses Human pathogenic hosts with Description of the most important diseases that Causes and Diagnosis Methods and its treatment	Virus Isolation DNA viruses	=	=
13- 14	6	Description of RNA viruses is more important Human pathogenic hosts with Description of the most	RNA viruses		

		important diseases that Causes and Diagnosis Methods and its treatment			

35. Course Evaluation
100 Degree **20 Degree Practical Laboratories** **20 marks for mid-term exams, written exams , interaction and surprise exams** **60 Final Exam**

36. Learning and Teaching Resources	
-Medical Microbiology 24th ed. 2007 by E. Jawetz - Medical parasitology, 5th ed. By Dr. D.R. Arora & Dr. Brij Bala Arora. 2018 - Lab manual for practical virology and parasitology - Atlas of Helminthes and Protozoa. alif	Course Books & References

urse Name 1
ysical pharmacy-I
urse code .1
ysical pharmacy-I 1 / 218 PPp1/Physical pharmacy practical - I
ar /Course
26 – 2025/ 1st course
te this description was prepared .2
25/7
In-person/online .3
person
(Number of study hours (total)/number of units/(total) .4
eatrically 3 hrs weekly/ practical 2 hrs weekly / 4 units
(The name of the course supervisor (if there is more than one name, also mention it .5
ay Abed Hazzaa sorri.Abd1100p@copharm.uobaghdad.edu.iq hammed munaem Aftan m.muneam@uoalhuda.edu.ia
Course Goals .6

1 - The study of physical pharmacy provides knowledge of mathematical processes and variable and steady states physical and chemical and work to apply them in the development of pharmaceutical dosage forms 2 - It provides the basis for understanding the chemical and physical phenomena that control the behavior of pharmaceutical products, allowing rational decisions to be made on dosage form	**e basic objective course**

Teaching and learning strategies 7	
A - Cognitive Objectives	

1 - Presentation 2 - Discussions 3 - Laboratory Experiments 4 - Flipped Classroom **B. General and transferable skills (other skills related to employability and personal development)** 1-Acquire skill in using books and modern teaching aids 2-Acquire skill in analyzing scientific results and discussions	

Course Structure8

Evaluation method	Learning method	Subject name	Required Learner Outcomes	Hrs	Week
Oral and written exams	Lectur	states of matter and bonds	Understanding the differences in binding strengths and how they relate to different types of molecules	6	2-1
Oral and written ex	Lectur	Crystalline, and non-crystalline solid state, intermediate states phase equilibrium and thermal analysis of materials	Know the properties of crystalline and no crystalline solid states and the properties of intermediate matter Understand phase equilibria and phase transitions between the three main states of matter	6	4-3
Oral and written exams	Lectur	-Non-electrolyte solutions oth ideal and real - solutions	-Understand the properties of solutions of non-electrolyte substances -Define ideal and non-ideal solutions and their properties using Raoul's law	6	6-5
Oral and written exams	Lectur	-Non-electrolyte solutions -Ideal and real solutions -Properties depending on the number of	identify and describe the four aggregate properties of non-electrolytic solutions -recognize the important properties of electrolyte solutions -Compare and contrast the bulk properties electrolyte and non-electrolyte solutions	6	7-8

		particles in the non-electrolyte solution Electrolytic - solutions			
Oral and written exams	Lectur	Ionic equilibrium and the theory of pigeons and bases	Explain Brunstedt's theory, the theory of Lewis, and the definition of the four types of solvents	6	9-10
Oral and written exams	Lectur	ton Equilibrium Equation	Identify the concept of acid-base balance	6	12-11
Oral and written exams	Lectur	Buffer solutions	Definition of buffer solutions and their efficiencies and their equations	9	15-13

Course Evaluation9	
100 points 20 points labs 20 points midterm and written exams 60 points final exam	
Learning and teaching references10	
tin's Physical Pharmacy and Pharmaceutical Sciences: Physical Chemical and Biopharmaceutical Principles in the Pharmaceutical Sciences, 6th Edition	Course books and references
tin's Physical Pharmacy and Pharmaceutical Sciences: Physical Chemical and Biopharmaceutical Principles in the Pharmaceutical Sciences, 6th Edition	Course books and references
rence AT, Attwood D. FASTtrack: Physical Pharmacy. Pharmaceutical Press; 2008 Almoazen H. Felton L.: Remington: Felton LA. Essentials of pharmaceutics. 2012	Course books and references

37. Course Name
Physiology 1
38. Course Code
39. Semester / Year / Semester
First Semester Academic Year 2024-2025
40. Date of preparation of this description

2025

41. In-presence / Online

In presence

42. Number of Hours (Total) / Number of Units / (Total)

3h theoretical & 1h practical (total: 52h)

43. Course Administrator Name (if more than one name is also mentioned)

Prof. Ismail Taha Ibrahim ismailtaha2018@gmail.com
M.B.Ch.B. Layth Adhoob Hamid alanbarylaith@gmail.com

44. Course Objectives

1. Studying the ways in which vital substances are transported to and from the living cells of the body 2. Studying the functions of the urinary system and its importance of regulating pressure 3. Studying the functions of the respiratory system and its importance in regulating the level of oxygen and acidity of the blood 4. Mechanism study of muscle contraction 5. Study of the mechanism of formation and transmission of nerve impulses	**Core Course Objectives**

45. Teaching and Learning Strategies

1. Theoretical and practical lectures + scientific research and supporting books
2. Using YouTube to show the jobs of some members
3. Using some diagrams from outside the prescribed curriculum to explain the mechanisms of action of some tissues.
4. Periodic exams, which are either pre-agreed or surprised.

46. Course Structure

Week	Hours	Required Learner Outcomes	Units or Topic Name	Learning Method	Evaluation Method
1-2	6	Study of Material Transport Methods Vitality to and from the living cells of the body	**Transport system**	Lectures + Videos	Daily exam
3-6	12	Study of urinary system function and its importance in regulating pressure	**Renal system**	Lectures + Videos	Daily exam
7-9	12	Studying the functions of the respiratory system and its importance in regulating blood acidity	**Respiratory system**	Lectures + Videos	Daily exam
10-12	6	Mechanism study of muscle contraction	**Physiology o Nervous system**	Lectures + Videos	Daily exam
13-14	6	Study of the mechanism of formation and transmission of nerve impulses	**Muscle**	Lectures +	Daily exam

			contractio n	Videos	

47. Course Evaluation	
100 Degree 20 Degree Practical Laboratories 20 Marks for the mid-term exam and written exams 60 Final Exam	
48. Learning and Teaching Resources	
• Ganong's Review of Medical Physiology • Principles of medical physiology	Course Books & References
Research gate, up to date	reference
Electronic References, Websites, etc	reference

49. Course Name	
Physiology 2	
50. Course Code	
51. Semester / Year / Semester	
Second Semester Academic Year 2024-2025	
52. Date of preparation of this description	
2025	
53. In presence / Online	
In **presence**	
54. Number of Hours (Total) / Number of Units / (Total)	
3h theoretical & 1h practical (total: 52h)	
55. Course Administrator Name (if more than one name is also mentioned)	
Prof. Ismail Taha Ibrahim ismailtaha2018@gmail.com M.B.Ch.B. LAYTH ADHOOB HAMID alanbarylaith@gmail.com	
56. Course Objectives	
6. Study of the mechanism of action and regulation of the digestive system 7. Study of blood function, immunity and ABO system 8. Study of the mechanism of action and regulation of the endocrine system	**Core Course Objectives**
57. Teaching and Learning Strategies	
1. Theoretical and practical lectures + scientific research and supporting books 2. Using YouTube to show the jobs of some members 3. Using some diagrams from outside the prescribed curriculum to explain the mechanisms of action of some tissues.	

4. Periodic exams, which are either pre-agreed or surprised.	

58. Course Structure

Week	Hours	Required Learner Outcomes	Units or Topic Name	Learning Method	Evaluation Method
1-6	28	Study of the mechanism of action and regulation of the digestive system	**Digestive system regulation**	Lectures + Videos	Daily exar
7	3	Study of blood function, immunity and ABO system	**Physiological function of Blood**	Lectures + Videos	Daily exar
8-13	22	Study of the mechanism of action and regulation of the endocrine system	**Physiological study of Endocrine system**	Lectures + Videos	Daily exar

59. Course Evaluation

100 Degree
20 Degree Practical Laboratories
20 marks for the mid-term exam and written exams
60 Final Exam

60. Learning and Teaching Resources

• Ganong's Review of Medical Physiology • Principles of medical physiology	Course Books & References
Research gate, up to date	reference
Electronic References, Websites, etc	reference

1. Course name
Computer Science is a semester course in the Department of Pharmacy, offered to first-year students in the second semester and to second-year students in the first semester.
2. Course code
3. Semester/Year
Second stage\ Semester one
4. Date of preparation of this description:
24-7-2025

5. In-person/Online:
System attendance
6. Number of study hours / Number of units
3hours / 2 cridet
7. Name of the course supervisor (if there is more than one name, also mention it):

10. Course structure

Weeks	Hours	Required learning outcomes	Name of units or topic	Learning method	Evaluation method
first	3	Security and Networking	What is a network? Types of networks. Basic network components	Presentation using a Data Show + Computer Lab	Discussions and Asking Questions
second	3	Security and Networking	Network Security basics, understanding network	Presentation using a Data Show + Computer Lab	Discussions

9. Teaching and learning strategies

- **Strategy for encouraging students to learn computer use and its applications, especially some Microsoft Office applications.**
- **Strategy for teaching students how to use Internet browsers and websites correctly and securely.**

Internet, as well as communication networks, their technologies, and classifications.

- **The course also aims to provide students with knowledge of Microsoft Office applications and how to use them effectively.**
- **Encourage students to learn how to use the Internet and its websites correctly to gain academic benefits.**

third	**3**	**E-Commerce**	**Concepts of Electronic banking services these include online banking: ATM and debit card services**	**Presentation using a Data Show + Computer Lab**	**Discussions and Asking Questions**
Fourth	**3**	**Computer Troubleshooting**	**Identifying and solving common hardware and software problems**	**Presentation using a Data Show + Computer Lab**	**quiz using computer**
Fifth	**3**	**Computer Troubleshooting**	**Basic troubleshooting techniques and tools for diagnosing and resolving issues**	**Presentation using a Data Show + Computer Lab**	**quiz using computer**
Sixth	**3**	**Artificial intelligent**	**Introduction to Al: Definition of Al, History of Al, Al Techniques and Approaches**	**Presentation using a Data Show + Computer Lab**	**quiz**
Seventh	**Midterm Exam**				
eighth	**3**	**Artificial intelligent**	**Key Characteristics of Al, Benefits of Al, Challenges and Ethical considerations**	**Presentation using a Data Show + Computer Lab**	**quiz**
Ninth	**3**	**The Role of Al in Modern Smartphones**	**: Al-Driven Mobile Technologies, Virtual Assistants (Siri, Google Assistant, Alexa)**	**Presentation using a Data Show + Computer Lab**	**quiz**
tenth	**3**	**Applications and Tools of Al: Overview of Al**	**Applications in Various Industries, Education and Healthcare and Transportation, Marketing and Advertising, Finance, Robotics and Automation Technologies**	**Presentation using a Data Show + Computer Lab**	**quiz**
eleventh	**3**	**AI and society**	**How AI affects social. AI and international relations and the future of humanity**	**Presentation using a Data Show + Computer Lab**	**quiz**

twelfth	**3**	**Future of AI**	**Future trends in AI, Recent research and emerging technologies**	**Presentation using a Data Show + Computer Lab**	**quiz**
thirteenth	**Final Exam**				

11. Course Evaluation
Very Good
12. Learning and teaching resources
Information and Communication Technology (2021)
TECHNOLOGY In ACTION (2020)
Microsoft Office 2019 Step by Step 1st Edition (2019)
Ahmed Banafa, Introduction of AI 1st Edition (2024)

61. Course Name
Crimes of the Baath regime in Iraq
62. Course Code
63. Semester / Year / Semester
The first semester of the second phase of the academic year 2024-2025
Date of preparation of this description .64
7/7/2025
65. In-Person / Online
Came
66. Number of Hours (Total) / Number of Units / (Total)
Number of Hours: 1 Number of Units:1
67. Course Administrator Name (if more than one name is also mentioned)
Assoc. Prof. Dr. Emad Abdullah Mansi
68. Course Objectives
Core Course Objectives

Documenting the crimes of the Baath regime according to the Iraqi Criminal Court Law
Statement of the investigation and truth system in revealing the crimes of the search party

69. Teaching and Learning Strategies

Teaching and Learning Strategies: Presentation and Presentation , Interactive Discussions , Brainstorming

A. Cognitive Objectives

1. It aims to enable the student or researcher to understand the political, legal and humanitarian backgrounds of these crimes, and to analyze them in a historical and human rights context.
2. Understand the ideological and political background of the regime
3. Analyzing the security and repressive structure of the regime

B . Skill objectives of the course.

1- It focuses on developing the student's abilities in analysis, criticism, research, and documentation, and is essential to understanding these crimes within a scientific and legal context.
2- Analysis of historical and legal texts and documents:

• Acquire the skill of reading and analyzing official documents, human rights reports, and decisions of international courts.
• Interpret Baathist policies through letters, statements, and security records.

3 . Academic Research and Scientific Documentation:

• Conduct systematic research on crimes and violations.
• Use reliable and archival sources to document violations.
• Ability to write scientific and human rights reports.

C. Emotional and value goals

It focuses on building the student's human attitudes, values, and attitudes towards issues of justice, rights, and historical violations

d. General and qualifying skills transferred (other skills related to employability and personal development)

Political and Legal Analysis Skills

The ability to analyze authoritarian regimes from a political and intellectual perspective.

Understanding International Humanitarian Law and Human Rights Treaties

70. Course Structure

Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Exam Test	Lectures	Definition of Al-Jarima-e-Lagha In other words,	Species Al-Germs Al-Dawlia	2	1-2

Semester Exam	Lecture	. Violations of Rights The human	Fundamental Rights and human dignity	2	3-4
Semester Exam	Lecture	Psychological Crimes Monuments	Levels of Investigat Confusion	2	5-6
Semester Exam	Lecture	Violations of Iraqi laws	Antakat haaqooq al-insaaan	2	7-8
Exam Format	Lecture	Decisions on System Violations of the Regime	The coup against the regime	2	9-10
Exam Format	Lecture	Environmental Crimes	War Pollution and the Use of Internationally Prohibited Weapons	4	11-14

71. Course Evaluation	
100 Degree **30 marks for the mid-term exam and written exams** **70 Final Exam**	
72. Learning and Teaching Resources	
United Nations Reports Condemning the Baath Regime - Human Rights Violations for the Period 1991-2003	Course Books References
Archive of the Political Prisoners Foundation	reference

1. Course Title
Organic chemistry III
2. Course Code
3. Chapter / Year / semester
second semester / academic year 2024-2025
4. Date of preparation of this description
2025
5.presence /Online

Presence
6. Number of study hours (total) / Number of units / (total)
Number of study hours: theoretical 2 hr practical 2hr
7. Name of Course Supervisor (If more than one name is present, please also provide)
Dr. Kotaiba Fadil Nafe Delan qotebh987654321@gmail.com
8. Course objectives

The main objective of studying heterocyclic compounds is to understand their chemical a physical properties and their diverse applications in various fields, especially in pharmaceutical and pharmaceutical industries. Heterocyclic compounds are orga compounds containing a carbon ring with one or more non-carbon atoms (such as nitrog oxygen, or sulfur). Studying these compounds includes understanding how heteroato affect the properties of the ring, such as its stability, reactivity, and ability to form bonds Heterocyclic Compounds 2- Saturated and Unsaturated Heterocyclic Compounds The study will cover the following aspects of each of these groups: * Shape and Structure: Understanding the geometric dimensions and atomic organizatior molecules. Nomenclature: Learning the rules used to name organic compounds. Bond and Hybridization: Exploring the types of chemical bonds and how atomic orbi hybridize. Studying the stability of compounds and estimating the stability of compoun Acidity and Basicity: Understanding the acidic and basic behavior of compounds. 3- Stu of heterocyclic tricyclic compounds 4- Study of heterocyclic tetracyclic compounds 5- Study of heterocyclic pentagonal, hexagonal, and heptacyclic compounds	**Course objectives**
Teaching and learning strategies	
Knowledge 1. Establishing a strong knowledge of organic chemistry: We prepare students to gain a deep and broad understanding of organic chemistry, which forms the cornerstone of their future learning in pharmaceutical chemistry. 2. Instilling a culture of laboratory safety: We emphasize that laboratory safety is a shared responsibility. Every student learns the importance of working with extreme caution to avoid accidents such as chemical spills, broken glassware, and fires. 3. Mastering basic chemical techniques: We enable students to identify diverse chemicals and train them in basic techniques covering simple chemical reactions. Skills 1. Critical thinking and problem-solving in the laboratory: You will enhance your ability to think critically to design experiments, interpret complex data, and troubleshoot laboratory problems effectively. 2. Accuracy and attention to detail: We will develop your meticulous attention to detail and meticulous precision, two qualities vital for performing organic chemistry	

procedures proficiently.

3. Effective communication skills: You will develop your written and oral communication skills to confidently and clearly present and discuss organic chemistry concepts.

4- Time Management and Organization: You will practice time management and organizational skills to cope with the intense workload and pace of the organic chemistry course.

Learning and Teaching Methods

1. Delivering scientific lectures

2. Using educational video and video models to facilitate a detailed visual experience of organic chemistry mechanisms. This will help students understand and learn the reaction rules more quickly.

- Conducting practical experiments

4. Preparing scientific research, individually or in groups

5. Assigning students homework

6. Assigning students to prepare seminars and discussions

Course structure

Evaluation Method	Learning Method	Unit or Topic Name	Required Learner Outcomes	Hours	Week
Scientific tests	lecture	Hetero-cyclic compounds	The study of heterocyclic compou is to understand their chemical physical properties and their dive applications in various fie especially in the pharmaceutical pharmaceutical industr Heterocyclic compounds are orga compounds containing a carbon r with one or more non-carbon ato (such as nitrogen, oxygen, or sulfu	10	1-4
Written exam	lecture	Heterocyclic tricyclic compounds	Heterocyclic and tetracy compounds are a class of orga compounds that contain a ring three or four atoms and include least one heteroatom.	12	5-7

Oral and written exam	lecture	Heterocyclic pentagonal compounds	**Heterocyclic compounds organic compounds that contai ring of five atoms and include or more non-carbon ato (heteroatoms), such as nitrog oxygen, or sulfur. Th compounds include pyrrole, fur and thiophene.**	5	8-9
Oral discussio n	lecture	Heterocyclic compounds	**Pyridine: A six-membered r containing one nitrogen atom. Pyran: A six-membered r containing one oxygen atom. Thiopyran: A six-membered r containing one sulfur atom. These compounds are used in manufacture of medicin pesticides, dyes, and oth products.**	12	10-13
Oral and written exam	lecture	Heterocyclic pharmaceutical compounds	**• Penicillins and cephalospori Antibiotics containing heterocyc compounds.**	5	14-15

11. Course Assessment

100 marks

20 marks Practical Labs

20 marks Midterm and Written Exams

60 marks Final Exam

12. Learning and teaching resources

John A. Joule and Keith Mills, Heterocyclic Chemistry, Fifth Edition, A John Wiley & Sons, Ltd., Publication, 2018	Textbooks and references
Fundamentals of Heterocyclic Chemistry: Importance in Nature and in the Synthesis of Pharmaceuticals 1st August 9, 2010 .	references
Valentina Noemi Madia , Davide Ialongo Davide Ialongo Heterocyclic Compounds in Medicinal Chemistry 2023	references

urse Name 1
ysical pharmacy-II
urse code
ysical pharmacy-II 2 / 225 PPp2/Physical pharmacy practical - II
ar /Course
26 – 2025/ 2nd course
e this description was prepared
25/7
In-person/online .73
person
(Number of study hours (total)/number of units/(total) .74
eatrically 3 hrs weekly/ practical 2 hrs weekly / 4 units
(The name of the course supervisor (if there is more than one name, also mention it .75
ay Abed Hazzaa sorri.Abd1100p@copharm.uobaghdad.edu.iq hammed munaem_Aftan_m.muneam@uoalhuda.edu.ia
Course Goals .76
e basic objective course 1 - The study of physical pharmacy provides knowledge of mathematical processes and variable and steady states physical and chemical and work to apply them in the development of pharmaceutical dosage forms 2 - It provides the basis for understanding the chemical and physical phenomena that control the behavior of pharmaceutical products, allowing rational decisions to be made on dosage form
Teaching and learning strategies 7
1-Presentation 2-Discussions 3-Laboratory experiments 4-Flipped classroom
Course Structure8

Evaluation method	Learning method	Subject name	Required Learner Outcomes	Hrs	Week
Oral and written exams	Lectures	-About solubility, types of solvents, solubility of gases -Solubility of substances and liquids and ideal and true solubility	-Studying the concepts of solubility and factors affecting it in general and factors affecting the solubility of gases particular - Studying the factors affecting the mixin of liquids with each other. Understanding ideal and real solubility o solids and the factors affecting it	6	2-1

		of solids			
Oral and written exams	Lectures	-Solubility of salts a weak electrolytes -Solute distribution among heterogeneo liquids	-Study the things that affect the solubility of different types of solids -Learn the methods used to extract substances from liquids and how to preserve substances	6	4-3
Oral and written exams	Lectures	-Kinetics / Velocity and Order of reactic -The effect of temperature on the speed of reactions a the stability of pharmaceuticals	-Study the factors that affect the solubility of different types of solids -Learn the methods used to extract substances from liquids and how to preservet he substances.	6	6-5
Oral and written exams	Lectures	-Surface tension phenomenon -Distribution coefficient and wetting	-To understand the phenomenon of surfa tension and its applications in pharmacy -To understand the mechanics of adsorpt on liquid and solid surfaces	6	7-8
Oral and written exams	Lectures	Electrical properties surfaces and zeta coefficients	To understand the electrical properties surfaces and the factors that affect them	9	9-11
Oral and written exams	Lectures	-Colloidal solutions their types -properties and applications in pharmacy -Viscosity and - Newton's law of flo Thixotropy	-To understand the difference between different types of colloidal solutions and their kinetic properties -To understand the phenomenon of viscosity and differentiate between fluids that follow Newton's law of flow and tho that do not and their practical application in pharmacy -To understand and define several concep related to viscosity	9	12-15
Course Evaluation9					
100 points 20 points labs 20 points midterm and written exams 60 points final exam					
Learning and teaching references10					
tin's Physical Pharmacy and Pharmaceutical Sciences: Physical Chemical and Biopharmaceutical Principles in the Pharmaceutical Sciences, 6th Edition				Course books and	

	references
tin's Physical Pharmacy and Pharmaceutical Sciences: Physical Chemical and Biopharmaceutical Principles in the Pharmaceutical Sciences, 6th Edition	Course books and references
orence AT, Attwood D. FASTtrack: Physical Pharmacy. Pharmaceutical Press; 2008 .Almoazen H. Felton L.: Remington: Felton LA. Essentials of pharmaceutics. 2012	Recommended supporting books and references (scientific journals, reports ....)

77. Course Name
Medicinal Drugs and Plants I
78. Course Code
79. Semester / Year / Semester
Second Semester Second Stage / Academic Year 2024-2025
e of preparation of this description .80
7/7/2025
81. In-Person / Online
Came
82. Number of Hours (Total) / Number of Units / (Total)
Number of Hours: 3 Number of Units: 3
(mentioned Course Administrator Name (if more than one name is also .83
M. M. Susan Monem Chastity sawsanmuneam@uoalhuda.edu.iq
84. Course Objectives
Core Course Objectives 1- The objectives are focused on identifying the sources of natural drugs and providing the student with ba knowledge about natural substances and their medicinal uses 2- Distinguish between drugs of plant, animal or mineral origin. 3- Identifying Plant Classification Methods: Classifying medicinal plants according to the plant family according to the type of active ingredient and identifying the scientific and common names of plants. 4- Study preservation and storage methods to ensure that effectiveness is maintained. 5- Distinguishing Fraud and Similarity in Drugs: Studying methods of examining and evaluating the qua of drugs and distinguishing between original, adulterated or counterfeit drugs.
85. Teaching and Learning Strategies
Teaching and Learning Strategies: Presentation and Presentation, Interactive Discussions, Seminars, Brainstorming, Problem Solving **A. Cognitive Objectives** 1. Understanding the student's method of using natural drugs in folk and modern medicine 2 - Knowledge of the methods of collecting, drying and storing drugs 3. Knowledge of the medicinal drug hardener and how to collect it 4. Understand the traditional methods of extracting active substances from

plants

B . Skill objectives of the course.

1. Acquire knowledge of the natural substances that make up the medicine and know the methods of cultivating, collecting and storing them in the appropriate ways to preserve the active substance.
2. Characterization of dried plant specimens using morphological and microscopic characteristics.
2. Using a microscope to examine drug slides and determine their anatomical characteristics.
3. Prepare vegetable slices and test them in a laboratory.
4. Use basic extraction methods (e.g., soaking, boiling, alcohol extraction...) to prepare extracts from plant drugs

C. Emotional and value goals

1 Enhancing the student's respect for the natural healing heritage :

• Developing an appreciation for medicinal plants as part of the scientific and cultural heritage in traditional and folk medicine.

2. Instilling ethical values in dealing with natural drugs:

• Commitment to honesty and scientific honesty in distinguishing between genuine and counterfeit drugs.

• Avoid promoting or dealing with unreliable or low-quality products.

3. Develop a sense of responsibility towards the safe use of drugs:

• Recognize the importance of proper use of medicinal plants and avoid poisoning or drug interactions.

4. Promote attention to the environment and medicinal plants:

• Adopting positive attitudes towards the conservation of rare medicinal plants and not contributing to their depletion or extinction.

5. Encourage scientific curiosity and love of research:

• Motivating the student to explore the benefits of new plants and study their properties in a systematic scientific manner.

6. Developing a professional sense and belonging to the specialty of pharmacy:

• Recognize the role of the pharmacist as a reliable scientific source in the field of phytotherapy and natural drugs.

7. Mutual respect and teamwork in the laboratory:

• Promote collaboration, discipline and teamwork during practical lessons

d. General and qualifying skills transferred (other skills related to employability and personal development)

1 – Acquire scientific and professional skills:

• Mastering the knowledge of natural drugs and their active substances.
• Skill in extracting and analyzing plant ingredients.
• Ability to evaluate quality and detect adulteration in raw materials.
• Understand the basics of manufacturing herbal products according to pharmaceutical standards.

2. Personal and developmental skills:

• Critical thinking and solving pharmaceutical problems.
• Research and scientific writing skills.
• Effective scientific communication with colleagues and patients.

• A desire for continuous learning and follow-up of scientific developments. 3. Labor Market Skills: • Use of analytical devices (TLC, HPLC, GC-MS). • Work in multidisciplinary teams. • Ability to innovate and entrepreneur in natural products. • Understand the basics of marketing and good manufacturing practices.	

86. Course Structure

Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Exam Test	Lectures	General Introduction: The Scope of Irrigation Science, Basic Definitions and Principles, Natural Sources of Medicines, Medicines Raw, Official and Formal	A general description pharmacology and a histor overview that shows beginning of the use medicinal plants in treatment of diseases and definition and classification chemical properties of pl groups In addition to the methods of collection, extraction, drying, isolation, quality control of the resulting active substances, morphological and biological properties, and purification methods used in the pharmaceutical manufacturing process	4	2-1
exam	Lecture	Natural Prod Classification	Explains the beginning of use of medicinal plants in treatment of diseases, defines and classifies chemical properties of pl groups	2	2
Daily exam	Lecture	Naming and classify plants. Raw D Production: Cultivati Collection, Drying, Storage.	Definition and classificatior chemical properties of pl groups In addition to collecti extraction, drying and isolat	5	4-3

			methods		
Semester Exam	Lecture	deterioration of raw natu products.	Distinguishing Fraud Similarity in Drugs: Study methods of examining evaluating the quality of dr and distinguishing betw original, adulterated counterfeit drugs.	1	4
Semester Exam	Lecture	Chemistry of Natu Pharmaceutical Products.	Chemical composit description of raw mater used in the manufacture medicines	3	5
Semester Exam	Lecture	Quality Control: Natu Product Evaluati Macroscopic Evaluati Physical Evaluati Chemical Evaluati Biological Evaluati Spectral Evaluation	Evaluation and Qua Assurance of Active Substan	4	7-6
Exam Format	Lecture	Phytochemical research herbal products: extract of plant material, separat and isolation of compone characterization of isola compounds.	Extraction of medicinal plan	4	8-7
Exam Format	Lecture	Separation Techniq Introduction, Separation Classification Mechanis Based on Technology Ty Paper Chromatography, T Film Chromatography, Exchange Chromatograp Gel Filtrat Chromatography, Colu Chromatography, Chromatography, H Performance Liq Chromatography, Electrophoresis, Synthe Chromatography.	Separation Technique	15	12-8

Exam Format	Lecture	Traditional plant medici as a source of r medicines. Biolysica Guided Segmentation	Biolysically-Guided Segmentation	3	13
Exam Format	Lecture	Medicinal Plant Tis Culture: Plant Tissue Cult Laboratory, Sterilizat Techniques Application of plant tis culture, environmental biological control, pl growth regulators.	Tissue culture of medici plants: introduction and histo	4	15-14

87. Course Evaluation
100 Degree **20 Practical Lab Grades (including Daily Exams, Homework, Seminars, Interactive Questions, Student Participation, and Weekly Reports)** **20 marks for the mid-term exam and written exams** **60 Final Exam**
88. Learning and Teaching Resources

Pharmacognosy 9th edition Varro E.Tyler, Lynn R.Brady.	Course Books & References
Phamacognosy 16th edition Trease &Evans.	reference
Thin layer chromatography 2nd edition Egon stahl. 1990	reference

Third level

89. Course Name
Inorganic Pharmaceutical Chemistry
90. Course Code
91. Semester / Year / Semester
First Semester Academic Year 2024-2025
description Date of preparation of this .92
2025
93. In-Person / Online
In-person
94. Number of Hours (Total) / Number of Units / (Total)
Number of Hours: 3 theoretical Hours 2 practical 1hr/ Number of Units: 4
95. Course Administrator Name (if more than one name is also mentioned)
Assoc. Prof. Dr. Maher Ahmed Abd maher.ahmed@uoanbar.edu.iq

96. Course Objectives

Core Course Objectives

1. Highlight the biological and pharmacological role of elements, ions, and inorganic compounds
2. Study the biological and pharmaceutical effects of the body's essential elements, and study the toxic and therapeutic effects of non-essential elements of the body.
3. Study of the atomic composition of radioisotope elements and the biological, therapeutic and medical effects of atomic radiation types.
4. . Study of the biological and therapeutic effect of inorganic compounds in the treatment of gastroinergic diseases and their various pharmacological uses

97. Teaching and Learning Strategies

1. Theoretical lectures

2- Conducting practical experiments

3- Scientific Research

4- Supporting books

5. Scientific discussions and seminars

6- Educational videos

7- Daily duties

8 - Acquiring skills in the use of books and modern teaching methods
9 - Acquire skill in analyzing results and scientific discussions

98. Course Structure

Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Oral and Written Exam	Lectures	Compositional formula of atoms Molecules/Complexes	Understand the molecular and structural formulas that represent chemical compounds.	6	1-3
Oral and Written Exam	Lectures	Intrinsic and non-essential elements	Distinguish between essential and non-essential elements in biological systems and know the importance of elements present in low concentrations for vital functions.	5	2-5
Oral and Written Exam	Lectures	Inorganic compounds Used in the treatment of Gastrointestinal disorders	To identify the main inorganic compounds used in the treatment of gastroinergic disorders and to understand the mechanisms of action and the possible side effects associated with these compounds	4	5-6

Midterm					
Oral and Written Exam	Lectures	Inorganic compounds used in topical treatment	Identification of inorganic compounds used in the form of are commonly used in topical treatments and evaluate the effectiveness of these Vehicles and security considerations in leather applications.	2	9
Oral and Written Exam	Lectures	Inorganic compounds Used in the treatment of Dental	Learn about the inorganic compounds used in Dental treatments and restoration materials and understanding their role in Prevention and treatment of dental conditions.	1	10
Oral and Written Exam	Lectures	Radioactive preparations	Definition of Radiopharmaceuticals and Their Applications in Medicine Nuclear Production, Naming and Use. Her Clinical	6	11-12
Oral and Written Exam	Lectures	Inorganic compounds used in Radioactive preparations	Exploration of specific inorganic compounds used in Synthesis of radiopharmaceuticals and understanding of their properties, stability and importance in diagnostic and therapeutic procedures	6	13-15

99. Course Evaluation

100 Degree
20 Degree Practical Laboratories
20 marks for the mid-term exam and written exams
60 Final Exam

100. Learning and Teaching Resources

Inorganic Medicinal and Pharmaceutical Chemistry by Block, Roche Soine and Wilson, latest edition Wilson and Gisvold; Textbook of Organic medicinal and pharmaceutical chemistry; Delgado JN, Remers WA, (eds); latest edition	& Course Books References
Scientific Journals, Reports, etc.	reference
Electronic References, Websites, etc	reference

101. Course Name

Medicinal Drugs and Plants II
102. Course Code
103. Semester / Year / Semester
Second Semester Second Stage / Academic Year 2024-2025
te of preparation of this description .104
7/7/2025
105. In-Person / Online
In-Person
106. Number of Hours (Total) / Number of Units / (Total)
Number of Hours: 3 Number of Units: 3
(Course Administrator Name (if more than one name is also mentioned .107
M. M. Susan Monem Chastity sawsanmuneam@uoalhuda.edu.iq
108. Course Objectives
Core Course Objectives 6- The objectives are focused on identifying the sources of natural drugs and providing student with basic knowledge about natural substances and their medicinal uses 7- Distinguish between drugs of plant, animal or mineral origin. 8- Identifying Plant Classification Methods: Classifying medicinal plants according to the pl family or according to the type of active ingredient and identifying the scientific and comm names of plants. 9- Study preservation and storage methods to ensure that effectiveness is maintained. 10- Distinguishing Fraud and Similarity in Drugs: Studying methods of examining and evaluat the quality of drugs and distinguishing between original, adulterated or counterfeit drugs.
109. Teaching and Learning Strategies
Teaching and Learning Strategies: Presentation and Presentation, Interactive Discussions, Seminars, Brainstorming, Problem Solving **A. Cognitive Objectives** 1. Understanding the student's method of using natural drugs in folk and modern medicine 2 - Knowledge of the methods of collecting, drying and storing drugs 3. Knowledge of the medicinal drug hardener and how to collect it 4. Understand the traditional methods of extracting active substances from plants **B . Skill objectives of the course.** 1. Acquire knowledge of the natural substances that make up the medicine and know the methods of cultivating, collecting and storing them in the appropriate ways to preserve the active substance. 2. Characterization of dried plant specimens using morphological and microscopic characteristics. 2. Using a microscope to examine drug slides and determine their

anatomical characteristics. 3. Prepare vegetable slices and test them in a laboratory. 4. Use basic extraction methods (e.g., soaking, boiling, alcohol extraction...) to prepare extracts from plant drugs **C. Emotional and value goals** 1 . Enhancing the student's respect for the natural healing heritage : • Developing an appreciation for medicinal plants as part of the scientific and cultural heritage in traditional and folk medicine. 2. Instilling ethical values in dealing with natural drugs: • Commitment to honesty and scientific honesty in distinguishing between genuine and counterfeit drugs. • Avoid promoting or dealing with unreliable or low-quality products. 3. Develop a sense of responsibility towards the safe use of drugs: • Recognize the importance of proper use of medicinal plants and avoid poisoning or drug interactions. 4. Promote attention to the environment and medicinal plants: • Adopting positive attitudes towards the conservation of rare medicinal plants and not contributing to their depletion or extinction. 5. Encourage scientific curiosity and love of research: • Motivating the student to explore the benefits of new plants and study their properties in a systematic scientific manner. 6. Developing a professional sense and belonging to the specialty of pharmacy: • Recognize the role of the pharmacist as a reliable scientific source in the field of phytotherapy and natural drugs. 7. Mutual respect and teamwork in the laboratory: • Promote collaboration, discipline and teamwork during practical lessons **d. General and qualifying skills transferred (other skills related to employability and personal development)** 1 – Acquire scientific and professional skills: • Mastering the knowledge of natural drugs and their active substances. • Skill in extracting and analyzing plant ingredients. • Ability to evaluate quality and detect adulteration in raw materials. • Understand the basics of manufacturing herbal products according to pharmaceutical standards. 2. Personal and developmental skills: • Critical thinking and solving pharmaceutical problems. • Research and scientific writing skills. • Effective scientific communication with colleagues and patients. • A desire for continuous learning and follow-up of scientific developments. 3. Labor Market Skills: • Use of analytical devices (TLC, HPLC, GC-MS). • Work in multidisciplinary teams. • Ability to innovate and entrepreneur in natural products.	

• Understand the basics of marketing and good manufacturing practices.					
110. Course Structure					
Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Exam Test	Lectures	General Introduction: The Scope of Irrigation Science, Basic Definitions and Principles, Natural Sources of Medicines, Medicines Raw, Official and Formal	A general description pharmacology and historical overview t shows the beginning of use of medicinal plants the treatment of diseas and the definition a classification of chemi properties of plant groups In addition to the methods of collection, extraction, drying, isolation, quality control of the resulting active substances, morphological and biological properties, and purification methods used in the pharmaceutical manufacturing process	4	1-2
exam	Lecture	Natural Prod Classification	Explains the beginning of use of medicinal plants the treatment of diseas and defines and classif the chemical properties plant groups	2	2
Daily exam	Lecture	Naming and classify plants. Raw D Production: Cultivati Collection, Drying, a Storage.	Definition and classificat of chemical properties plant groups In addition to collecti extraction, drying a isolation methods	5	3

Semester Exam	Lecture	deterioration of n natural products.	Distinguishing Fraud a Similarity in Drugs: Study methods of examining a evaluating the quality drugs and distinguish between original, adultera or counterfeit drugs.	1	4
Semester Exam	Lecture	Chemistry of Natu Pharmaceutical Product	Chemical composit description of raw materi used in the manufacture medicines	3	5
Semester Exam	Lecture	Quality Control: Natu Product Evaluati Macroscopic Evaluati Physical Evaluati Chemical Evaluati Biological Evaluati Spectral Evaluation	Evaluation and Qua Assurance of Act Substances	4	6-7
Exam Format	Lecture	Phytochemical resea of herbal produc extraction of pl material, separation a isolation of componer characterization isolated compounds.	Extraction of medici plants	4	8
Exam Format	Lecture	Separation Techniq Introduction, Separat and Classificat Mechanisms Based Technology Type, Pa Chromatography, T Film Chromatography, Exchange Chromatography, C Filtration Chromatography, Colu Chromatography, G Chromatography, H Performance Liq Chromatography, Electrophoresis, Synthesis	Separation Technique	15	9-12

		Chromatography.			
Exam Format	Lecture	Traditional pl medicines as a source new medicin Biolysically-Guided Segmentation	Biolysically-Guided Segmentation	3	13
Exam Forma t	Lecture	Medicinal Plant Tiss Culture: Plant Tiss Culture Laborato Sterilization Techniques Application of plant tiss culture, environmer and biological cont plant growth regulators.	Tissue culture of medici plants: introduction a history	4	14-15

111. Course Evaluation

100 Degree
20 Practical Lab Grades (including Daily Exams, Homework, Seminars, Interactive Questions, Student Participation, and Weekly Reports)
20 marks for the mid-term exam and written exams
60 Final Exam

112. Learning and Teaching Resources

Pharmacognosy 9th edition Varro E.Tyler, Lynn R.Brady.	urse Books & References
Phamacognosy 16th edition Trease &Evans.	reference
in layer chromatography 2nd edition Egon stahl. 1990	reference

urse Name 1
rmaceutical Technology I
urse code .113
ClPT1
ar /Course
6 – 2025/ 1st course
e this description was prepared .114
5/7
In-person/online .115
person
(Number of study hours (total)/number of units/(total) .116
atrically 3 hrs weekly/ practical 2 hrs weekly / 4 units
(The name of the course supervisor (if there is more than one name, also mention it .117
ay Abed Hazzaa sorri.Abd1100p@copharm.uobaghdad.edu.iq hammed munaem_Aftan_m.muneam@uoalhuda.edu.ia
Course Goals .118

Cognitive objectives	**The basic objective course**
- Study the theoretical foundations of the techniques of preparing solutions and suspensions in terms of raw materials, formulations, preparation methods, stability, storage and uses. - Study and practice the skills necessary for pharmaceutical formulations such as solutions of all kinds (simple solutions (oral and topical), syrups, elixirs, sprites, aromatic water). - Distinguish between different liquid dosage forms in terms of physical properties, appearance, preparation methods, suitability of a particular drug compound and stability. - Select the appropriate liquid dosage form for a drug compound according to the physicochemical properties of the drug.2 Skills - Mixing solutions and preparing them for compounding in the pharmacy - Prepare suspensions as part of automated preparations in the pharmacy - Proper use of basic tools and glassware commonly used in improvised compounding - Affective skills - Practicing the role of the pharmacist in providing safe and effective medications - Practicing how to dispense these doses - Use learned knowledge and skills to provide alternatives when needed - Proper use of resources	

Teaching and learning strategies 8

1-Presentation

2-Discussions

3-Laboratory experiments

4-Flipped classroom

Course Structure8

Evaluation method	Learning method	Subject name	Required Learner Outcomes	Hrs	Week
Oral and written	Lectures	-Solutions (into body cavity, oral and external use). -Solutions:	Introduction to pharmaceutical Technology, Pharmaceutical solutions; definition,	6	1-2

exams		preparation of oral and external solution -Carminative mixture for infants Carminative mixture for adults -Iodine Solutions	classification of pharmaceutical solution method of preparation of solution Solubility, expression of solubility, water as a solvent Methods of preparation of purified water		
Oral and written exams	Lectures	Syrups: Preparation techniques and quali evaluation. Syrups: sugar-based syrup and sugar free syrup +quiz	Types of water Examples of solutions Injectables Oral solutions Rectal solutions Mouth wash Vaginal solutions Ophthalmic solutions Topical solutions Aromatic water Aqueous solutions containing aromatic principles; aromatic waters; methods of preparations; stability. Syrups: Types of syrups, sugar as sweetener Components of syrups Method of preparation Calculation of preservative concentration Stability of sugar-based syrups Artificial syrups Examples of syrups	6	3-4
Oral and written exams	Lectures	Spirits and elixir: Preparation techniqu and evaluation: 1)Aromatic spirit of ammonia 2)Spirit of camphor 3)spirit of anise 4)Phenobarbital elix 5)Pediatric paracetamol elixir .	Elixirs and Spirits Preparation of solutions using mixed solvent systems; spirits, and elixirs. Specification Uses Collodions	6	5-6
Oral and written	Lectures	Suspensions: classification	Coarse dispersion; suspensions. Definition, reason for suspension Routes of administration of suspensio	6	7-8

exams		Suspensions: diffusible and in diffusible solid preparation suspension: Boric acid suspension Bismuth carbonate suspension Phenacetin suspension Aspirin suspension	specification Coarse dispersion. Rate of sedimentation Factors affecting sedimentat Sedimentation volume, degree sedimentation		
Oral and written exams	Lectures		Flocculation Method to control flocculation Mid-term exam	9	9-11
Oral and written exams	Lectures	1) Preparation Suspensions contain precipitate form liquid: Tincture of tolu balsam suspension 2) Suspensi containing poo wettable solid: Calamine suspensior Compound Sulphur lotion 3) Dispersions of oi in inhalation 4) Suspensions prepared by chemical reaction	Colloidal dispersions; Definition particle size range classification lyophilic; lyophobic, amphiphilic Methods of preparations Polymers and SAA Examples-To understand and defin several concepts related to viscosity	9	12-15
				Course Evaluation	9
100 points 20 points labs 20 points midterm and written exams 60 points final exam					
				Learning and teaching references	10
Ansel's Pharmaceutical Dosage Forms and Dr Delivery Systems Eleventh Edition				Course books and	

	references
Drugs.com USPNF.com	electronic references, websites
Physiochemical Principles of Pharmacy Alexender T Florence, David Attwood 4th Edition Chapter 10 (2006) 5th Edition Chapter 11(2011)	Recommended supporting books and references (scientific journals, reports ....)

1. Course Name
Biochemistry I
2. Course Code
3. Semester / Year
First / Third
4. Date of preparation of this description
2024
5. Available Forms of Attendance
In-person
6. Number of study hours(total)
Theoretical 3h practical 2hr no of credit 4
7. The name of the course administrator (if more than one name is mentioned).
Teaching assisstant. Mohammed Dhafi
8. Course Objectives
• Provide students with the principles of biochemistry of important biomolecules and prepare them to discuss the metabolism of these molecules. **• Providing students with the necessary technical skills in the field of biochemistry.**
9. Teaching and Learning Strategies

Presentation and Presentation **Interactive Discussions** **Brainstorming** **Research and Induction**	**Strategy**

10. Course Structure

Evaluation Method	Learning Method	Name of Unit or Topic	Required Learning Outcomes	Hours	The week
Theoretical Exam and Classroom Activities	Lectures and Discussions Reports	Introduction to Large Molecules In chemistry Life	Knowledge of what biochemistry studies and the description of molecules Big Matter	3	1
=	=	Amino acids	Amino acid composition; classification; properties; Shapes	3	2
=	=	Amino acids	Chemical reactions; Neutral ion point calculation; non-protein amino acids; Clinical	3	3
=	=	Peptides	Peptide bonds; Installation and Function of Some Peptides in the Human Body	3	4

=	=	Proteins	Primary composition; Quadrilateral structure: types and strengths of bonds Association: classification based on function and nature Chemical and nutritional value	3	5
=	=	Proteins	Determining the Arrangement of Amino Acids in the Initial Synthesis of proteins; determination of the nitrogen end and the end Carboxylation	3	6
term exam-Mid					7
=	=	Carbohydrates	Chemistry, classification and importance of carbohydrates; Stereochemistry of monosaccharides; Physiological	3	8
=	=	fats	Importance of fats and their classification; fatty acids and Nomenclature of saturated and unsaturated ones ; Effect of free radicals on tissues The effect of antioxidants fat preservation in	3	9

=	=	Enzymes	Synthesis of enzymes named and classified; How Enzymes Work: Reactant Communication Models With enzyme;necessary companions for the action of some enzymes;applications Clinical Enzymes	3	10
=	=	Enzyme kinetics	General Principles: Factors Affecting the Speed of Reaction In the presence of the enzyme (concentration, pH, temperature); the Mickles-Minten equation and the straight line equation derived from it; what it Its definition and means	3	11
=	=	Enzyme inhibitors	Inhibitory, competitive and non-competitive; and inhibition is non-reversible; kinetics of each of these inhibitors and the method of distinguishing Inhibition Mechanics	3	12
			The effect of the available concentration of reactants in the process of regulating		

=	=	Regulation of enzymes	The Role of Enzymes in the Presence of Enzymes in Sites of a particular cell or in certain tissues and cells in facilitating organization; Best for targeting regulation; regulation of enzyme quantity; regulation of Enzyme action by reverse or non-reverse changes Inverse enzyme synthesis	3	13
=	=	Endocrine system diversity	Basic principles of endocrine hormone action; Types and mechanisms of action of endocrine hormones; Production and Transportation Steps and hormone storage	3	14
=	=	Hormone action	Roles of stimulation, hormone formation and release, and generation signaling, and effector response in the physiological processes regulated by The role of G protein-binding receptors in the transmission of hormonal signals; Coordination of the action of hormones and their	3	15

			effect on physiological outputs; Hormone on Cells		

119. Course Name
Physiology of Diseases
120. Course Code
121. Semester / Year / Semester
First Semester Third Academic Year 2024 - 2025
e of preparation of this description .122
2025
123. In-Person / Online
In person
(Number of Hours (Total) / Number of Units / (Total .124
Theoretical hr: 3 practical 2hr credit=4
125. Course Administrator Name (if more than one name is also mentioned)
Prof. Dr. Ismail Taha Al-Bayan
126. Course Objectives
Core Course Objectives To provide students with the theoretical and practical knowledge and technical skills necessary in the field of studying and understanding the science of disease physiology.
127. Teaching and Learning Strategies
Lectures Discussions E-Classrooms Research work

128. Course Structure

Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Theoretical Exam	Lectures	Introduction to pathology, its relationship to related scienc terminology used, histopathological changes	Introduction to pathology, its relationship to related sciences, terminology used, histopathological changes	3	1
Theoretical Exam	Lectures	Disruption of water and electrolyte distribution, acido and alkalosis	Disruption of water and electrolyte distribution, acidosi and alkalosis	3	2
Theore	Lectures	Physiology of cardiovascular disorders	Physiology of cardiovascular disorders	3	3

tical Exam					
Theoretical Exam	Lectures	Physiology of Respiratory Disorders	Physiology of Respirat Disorders	3	4
Theoretical Exam	Lectures	Urinary system disord kidney failure, stor congenital diseases	Urinary system disorders, kid failure, stones, congenital disea	3	5
Theoretical Exam	Lectures	Gastrointestinal disord diarrhea, Crohn's, irrita bowel syndrome	Gastrointestinal disord diarrhea, Crohn's, irritable bo syndrome	3	6
term exam-Mid					
Theoretical Exam	Lectures	Disorders of the liver, gallbladder, pancreas, salivary glands	Liver disorders, gallbladder, Pancreas, salivary glands	3	8
Theoretical Exam	Lectures	Endocrine disorders, autoimmune, diabetes, metabolic syndrome	Endocrine disorders, autoimmune, diabetes, metabolic syndrome	3	9
Theoretical Exam	Lectures	Physiology of Diseases the Nervous System	Physiology of Diseases of the Nervou System	3	10
Theoretical Exam	Lectures	Physiology of reproductive disorders	Physiology of reproductive disorders	3	11
Theoretical Exam	Lectures	Hematology	Hematology	3	12
Theoretical Exam	Lectures	Physiology of Skin, Musculoskeletal Diseas	Physiology of Skin, Musculoskeletal Diseases	3	13
Theoretical Exam	Lectures	The Falsification of Malignant and Benign Cancers	The Falsification of Malignant and Benign Cancers	3	14

Theoretical Exam	Lectures	Cellular and histologica changes, degeneration, necrosis, atrophy, metaplasia	cellular and histological changes, Degeneration, necrosis, atrophy, metamorphosis	3	15

129. Course Evaluation
100 Degree 20 Degree Practical Laboratories 20 marks for the mid-term exam and written exams 60 Final Exam

130. Learning and Teaching Resources	
Study guide for understanding pathophysiology, 7th Ed, 2021 Pathophysiology of disease, An introduction to clinical medicine, 6th Ed, 2010	Course Books & References
McCance & Huether's Pathophysiology, 9th Ed, 2022	reference
	reference

131. Course Name
Pharmaceutical Organic Chemistry-1
132. Course Code
133. Semester / Year / Semester
Second Semester / Academic Year 2025 - 2024
134. Date of preparation of this description
2024
135. In-Person / Online
In-Person
136. Number of Hours (Total) / Number of Units / (Total)
Number of Units: 4 theoretical=3hr practical 2 hr
137. Course Administrator Name (if more than one name is also mentioned)
Dr. Maged Ahmed El-Sawy Dr.maged.elsawy@Gmail.com
138. Course Objectives
Core Course Objectives 1. Highlight the concept of the drug journey within the body such as absorption 2. Distribution, metabolism and removal of medication out of the body 3 Study of the metabolism of drugs 4 Study of factors that affect drug metabolism within the body

5-Study of the effect of stereo chemistry on the metabolism of drugs in the body

6-Study of Drug Metabolic Interactions

139. Teaching and Learning Strategies

A. Cognitive Objectives

1. The student's knowledge of all the factors that the drug encounters inside the body (chemical, physical, and biological).

2. The student's knowledge of traditional and modern methods of drug design.

3. Knowing the types of metabolism of drugs within the body

4. Knowing the factors that affect metabolism

B . Skill objectives of the course.

1. Acquire the skill of studying the chemical composition of the drug and the consequent factors affecting the drug inside the body.

2. Acquire the necessary skill to make changes in the chemical composition of the drug in order to develop it and overcome weaknesses in its performance within the body.

C. Emotional and value goals

1. Enhancing students' ability to predict the effectiveness and fate of the drug in the body.

2Enhance students' ability to think and analyze

3. Enhance students' ability to ask objective questions and discuss

d. General and qualifying skills transferred (other skills related to employability and personal development)

1. Acquire skill in studying the chemical composition of the drug and its related effects and effects inside the body**.**

2. Acquire skills in the use of books and modern teaching methods.

3. Acquire skill in analyzing results and scientific discussions

Course Structure

Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Written Exam	Lectures	Drug distribution	Introducing the Drug Journey Inside the body	6	1-2
Written Exam	Lecture	Demonstrating the Effect of P Drugs	Demonstrating the Effect of P Drugs	6	3-4
Written Exam	Lecture	Drug Design With the help of Computer	Basic Knowledge Pharmaceutical Design	3	5
Written Exam	Lecture	Participation Powers In interactions Drug receptors	Strong Effect and Bonds Response to medications	3	6
Written	Lecture	Effect of the stereochemistry of	Effect of the stereochemistry of	3	7

Exam		drug on the interaction with receptor	drug on the interaction with receptor		
Written Exam	Lecture	Equal substitutions For atoms inside Drug Molecules	Effect of equal substitutions of atoms within drug molecules	3	8
Written Exam	Lecture	Drug biotransformation sites	Drug biotransformation sites	3	9
Written Exam	Lecture	The role of cytochrome P450 Biotransformation of the drug	The role of cytochrome P450 in Biotransformation of the drug	3	10
Written Exam	Lecture	Oxidative reaction in metabolism	Study of the oxidation of compou containing a benzene ring Oxidation of olefins Oxidation at allelic carbon atoms Oxidation at carbon atoms α carbonyl and amines Other oxidative biotransformat pathways	6	11-12
Written Exam	Lecture	Reduction reactions and hydrolysis	Reduction reactions and hydrolysis	6	13-14
Written Exam	Lecture	Phase II reactions of metabolism Active Metabolites	Phase II reactions of metabolism Active Metabolites	6	15

Course Evaluation

100 Degree
20 Degree Practical Laboratories
20 marks for the mid-term exam and written exams
60 Final Exam

Learning and Teaching Resources

Course Books & References
Wilson and Gisvold Textbook of Organic medicinal and Pharmaceutical chemistry12th edition (201 Lippincott-Raven Publishers, New York.

reference
W.O. Foye, Principle of Medicinal Chemistry, 7th edition (2012), Lipincott Williams & Wilkins, Lond

reference
G. Patrick, An Introduction to Medicinal Chemistry, 5th edition (2013), Oxford University press, UK.

140. Course Name

Pharmacology-1

141. Course Code

142. Semester / Year / Semester 3

Second Semester / Academic Year 2025 - 2024

143. Date of preparation of this description

2024

144. In-Person / Online

In-Person

145. Number of Hours (Total) / Number of Units / (Total)

Number of Units:3, theoretical lecture: 3 practical=2

146. Course Administrator Name (if more than one name is also mentioned)

Prof. Dr. Ismail Taha @Gmail.comismailtaha2018

147. Course Objectives

Core Course Objectives

1. Highlight the concept of the drug journey within the body such as absorption

- 2Distribution, metabolism and removal of medication out of the body

3 . The study of the ANS nervous system in two parts.

4. Study of antibiotics, their types and field

5. Study of antifungals, protozoa, tuberculosis and worms

148. Teaching and Learning Strategies

A. Cognitive Objectives

- Introduction to pharmacology and general pharmacokinetics

Drug receptor interaction and pharmacodynamics

- -Study of the autonomic nervous system (ANS)

and the cholinerg-adrenergic system

- Study of antibiotics and their types
- Study of antifungal drugs,

anti-protozoan drugs, and

- Study of anti-anthelmintic drugs
- Acquire skills in the use of books and modern teaching aids
- Acquire skill in analyzing results and scientific discussions

149. Course Structure

Week	Hours	Required Learner Outcomes	Units or Topic Name	Learning Method	Evaluation Method
1	3	Introduction to pharmacology and the journey of medicine Inside the body	Drug distribution	Lectures	**Written exam**
3	3	Introduction to Pharmacy Students By drug receptor reaction	Pharmacodynamics	Lecture	**Written exam**

		and pharmacodynamics			
4	3	Introduction to Pharmacy Students In the nervous system Involuntary (ANS), and the cholinergic system, and the adrenergic system	ANS	Lecture	**Written exam**
5	3	Definition of Gold B Pharmacy with Fundamentals Counter Therapy for microbes.	Antibiotics	Lecture	**Written exam**
6-9	9	Types of antibiotics Beta-Lactam and others Antibiotics Inhibitor of wall synthesis Cell - Inhibitors of protein synthesis - Quinolone and antifolate and urinary tract disinfectants	Types of antibiotics	Lecture	**Written exam**
10	3	Introducing pharmacy students to medicines Antifungal	Antifungals	Lecture	**Written exam**
11-12	3	Definition of Pharmacy with Medicines Anti-protozoa	Antiprotozoa	Lecture	**Written exam**
13	3	Introduction to Anti-Drug Drugs For worms	Antihelmintics	Lecture	**Written exam**
14	3	Study ofanti-tuberculosis drugs	Anti-tuberculosis	Lecture	**Written exam**

150. Course Evaluation

100 Degree

10 Activities, Interaction and Surprise Exams

20 marks of the mid-term exam

70 Final Exam	
151. Learning and Teaching Resources	
Pharmacology (Lippincott Illustrated Reviews Series) Seventh, International Edition Paperback – Big Book, 9 October 2018 by Karen Whalen PharmD BCPS (Author)	Course Books & References
British Pharmacopoeia ● **Pharmacopoeia in the United States**	reference
Electronic References, Websites	reference

1 Course Name
Pharmaceutical Technology II
152. Course code
Year /Course
2026 – 2025/ 2nd course
153. Date this description was prepared
2025/7
154. In-person/online
In-person
155. Number of study hours (total)/number of units/(total)(
Theatrically 3 hrs weekly/ practical 2 hrs weekly / 4 units
156. The name of the course supervisor (if there is more than one name, also mention it(
Suray Abed Hazzaa sorri.Abd1100p@copharm.uobaghdad.edu.iq m.muneam@uoalhuda.edu.ia_Mohammed munaem Aftan__
157. Course Goals
The basic **objective** **1 Cognitive Objectives** - Understand the theoretical bases of the technology for the preparation of emulsion, powder, capsule and semi-solid dosage forms with respect to raw materials, formulations, preparation methods, irrigation, stability, storage and uses. - Learn and practice the skills necessary for the rapid compounding of powder, capsule and semi-solid dosage forms. - Recognize the different liquid dosage forms in relation to their physiological dosage forms. Characteristics, appearance, methods of irrigation and suitability of a pharmaceutical compound for RZE and stability. - Choosing the appropriate liquid dosage form for a drug compound. - Different solid and semi-solid dosage forms applicable to improvised compounds - Identify the causes of incompatibility and compounding of medications.

- Skill Objectives
- Mix and irrigate powder and capsule dosage forms in pharmaceutical formulations
- Mixing and irrigation of semi-solid preparations
- Utilize the basic materials and glassware used in pharmaceutical formulations
- Identifying incompatibilities in pharmaceutical formulations

Emotional Skills

- Practicing the pharmacist's role in providing safe and effective medications
- Practice how to dispense these doses
- Use the knowledge and skills learned to provide alternatives when needed
- Proper use of resources

Teaching and learning strategies 7

1-Presentation
2-Discussions
3-Laboratory experiments
4-Flipped classroom

Course Structure8

Evaluation method	Learning method	Subject name	Required Learner Outcomes	Hrs	Week
Oral and written exams	Lectures	Emulsion	• Define the pharmaceutical emulsions • Distinguish between the different types of pharmaceutical emulsions based on their physical state • Differentiate between the different types of pharmaceutical emulsions based on their intended uses. • Compare and contrast emulsification theories: surface tension, oriented wedge, and	6	1-2

			Interfacial film. Compare and contrast various types of emulsifying agents • Identify the methods and techniques employed in preparing of stable pharmaceutical emulsions. Identify the factors that affect the stability of emulsion, such as temperature and environmental conditions.		
Oral and written exams	Lectures	Suppositories and Inserts	•Compare and contrast various suppository and insert, in terms of physical appearance, size and shape •Describe the advantages of suppositories and inserts. •Identify and explain physiologic factors that influence the drug absorption from rectal suppository administration •Identify and explain the Physicochemical factors of the drug and suppository/insert base as these influence absorption Compare and contrast the various classes of suppository bases Describe the three methods of suppository preparation	6	3-4
Oral and written exams	Lectures	Semi- solid dosage forms	Differentiate between the various types of semisolid bases on the basis of	6	5-6

			physical and chemical properties. List the criteria for the selection of a semisolid base to treat a topical affliction. Describe the methods to incorporate (an) active ingredient(s) into a semisolid base. Explain the difference between an ointment, a cream, and a gel. Compare and contrast an ophthalmic ointment base and a topical ointment base for application to the skin.		
Oral and written exams	Lectures	Powders and Granules	Differentiate a powder from a granule. Explain how a drug's powder particle size influences the pharmaceutical dosage forms which will be used to administer it. Define micrometrics, the angle of repose, levigation, spatulation, and trituration. Compare and contrast the various types of medicated powders, e.g., bulk, divided. Provide examples of medicated powders us in prescription and nonprescription product	6	7-8
Oral and written exams	Lectures	Capsule	Differentiate between hard and soft gelatin capsule. Understand the advantages and disadvantages of each type of capsule Identify the excipients used for both	6	9-10

			type of capsules Recognize the compendial requirement of capsules Understand appropriate method compounding a packaging and storage capsules		
Oral and written exams	Lectures	Aerosols and Foams	Define aerosols Understand the types and applications of aerosols Identify the main advantage of aerosols Define foams Explore the types and applications of foams Identify the main advantage of foams Differentiate between aerosols and foams	6	11-12
Oral and written exams	Lectures	Physicochemical drug interactions and incompatibilities	This topic discusses the drug interactions from a physicochemical rather than a pharmacological or pharmacodynamic viewpoint. Sometimes the interaction is beneficial and sometimes not. In reading this topic, you should appreciate that there are several causes of interactions and incompatibilities, which include: ● pH effects ● Change of solvent ● Cation_–_anion interactions ● Salting-out and salting-in ● Chelation ● Ion-exchange interactions ● Adsorption to excipients and contain	6	13-15

Course Evaluation -9	
100 points 20 points labs 20 points midterm and written exams 60 points final exam	
Learning and teaching references10	
Ansel's Pharmaceutical Dosage Forms and Dr Delivery Systems Eleventh Edition	Course books and references
Drugs.com USPNF.com	electronic references, websites
Physiochemical Principles of Pharmacy Alexender T Florence, David Attwood 4th Edition Chapter 10 (2006) 5th Edition Chapter 11(2011)	Recommended supporting books and references (scientific journals, reports ....)

1. Course Name
Biochemistry-II
2. Course Code
3. Semester/Year
Second/Third Year
4. Date of preparation of this description
2024
5. Available Forms of Attendance
In-person
6. Number of study hours (total) Number of units (total)
4/5

7. Name of the course leader.) If more than one name mentioned)

Teaching assistant. Mohammad Dafi

Course Objectives

To provide students with the knowledge of cellular metabolism of carbohydrates, amino acids and lipids, and its impact on disease states.

Provide students with the necessary technical skills in the field of biochemistry.

9. Teaching and Learning Strategies

Strategy	**Presentation and recitation** **Interactive discussions** **Brainstorming**

10. Course Structure

Week	Hours	RequiredLearning Outco	Module name topic	Learning method	Assessment method
1	1	Discuss the application of laws of thermodynamics to biological systems and correlation between en absorbing and energy relea reactions and the functio of ATP as an "en currency" for cells. adenosine triphosphate (A as the "energy currency" cells	Bioenergy	Lectures discussions and reports	Theoretical examina and classroom activit

2	2	Explain what is meant anabolic, catabolic, anab and catabolic metab pathways and common metab pathways; a brief descrip of metabolism at the at the tissue and organ le and at the subcellular; how to regu the flow of metabo through metabolic pathways; describe how metab fuelling is provided in both and fasted states. feeding and fasting.	Overview metabolism fuelling Metabolism	=	=
3	3	Describe the pathway regulation of glycolysis how it can occurring under anaer conditions; explain differences between the roles of glucokinase hexokinase in glycol describe the reaction pyruvate dehydrogenase and its regulation.	glycolysis oxidation of Pyruvate	=	=
4	3	describe the reactions of citric acid cycle and the reactions that lea the production of redu equivalents.	citric acid cycle	=	=
5		explain the importance vitamins in this cycle; exp how the cycle provides a path for amino acid catabolism a pathway for for synthesis; explain how regulated by this cycle			

	3	Describe the four pro complexes involved respiratory chain elec transport; understand respiratory chain elec transport generates generates ATP thro oxidative phosphorylation through oxida phosphorylation; list exam of common toxins that in electron transport or oxida phosphorylation and identify their sites action.	The respiratory c and oxida phosphorylation	=	=
6	3	describe the structure glycogen and its importanc a store of carbohydrates; describe synthesis and breakdown glycogen and how processes are regula describe the different types of glyco storage diseases.	Glycogen metabo	=	=
7	3	explain the importance gluconeogenesis in glu homeostasis glucose homeostasis; desc the pathway gluconeogenesis, and how glycolysis gluconeogenesis are regul reciprocally reciprocally; explain how concentration of of plasma glucose maintained within ce limits in nutritional and fasting state	Gluconeogenesis blood glucose con	=	=

8	3	Describe the per phosphate pathway and importance. describe the uronic pathway and its importance explain the consequences consuming large amounts fructose; describe the structure and physiolo significance of galactose. Explain the consequences genetic defects of gluco deficiency. phosphate dehydrogenase, the uronic acid pathway. metabolism of fructose galactose.	The per phosphate path and other pathv for metabolising hexose	=	=
9	1	Nomenclature of intermed of the citric acid cycle and glycolysates that precursors to certain ar acids; explain the key rol transaminases in amino acid metabol explain the process by whi 4-hydroxyproline, hydroxyproline hydroxylysine selenocysteine in s proteins; explain the synth of of some amino acids assimilating free ammonia; explain synthesis of some amino ac amino acids using other ar acids.	Biosynthesis amino acids Non-essential ar acids from Nutritionally	=	=

10	2	Describe protein metabol its roles, speed limiters, cellular protein catal pathways; outline the ce roles of transaminases glutamate dehydrogenase glutaminase in human nitrogen metabol elucidate the cycle of synthesis and regulation and its metabolic defects.	catabolism of prot and nitrogenisatio amino acids Amino acids	=	=
11	1	Identify pathways for catabolism of carb structures of amino acids and labe key metabolic fates; dis clinically important metal disorders associated with clinically important metal disorders associated with catabolism of the of amino acids.	Catabolism of ca structures of ar acids amino acids	=	=
12	1	Discuss the involvement amino acids in a variety of in a variety of biosynt processes other than pro synthesis protein synthesis.	Conversion of ar acids into Specialty products	=	=
13	1	Describe the structure nomenclature of porphy discuss the heme synthesis catabolism pathway. Explain the causes and ger clinical picture of different porphyrins.	Porphyrins and Pigments	=	=
14	3	Describe the processes which fatty acids transported fatty acids are transporte the blood, activated transported to mitochondria to oxidise them; describ pathway	fatty acid oxidatio	=	=

		beta-oxidation; describe reactions of ketone b formation and describe conditions associated their excessive formation. pathological condit associated with exces formation of ketone bodies			
15	3	Describe the acetyl acetylase reaction and mechanisms by which activity is regulated to co the rate of fatty acid synthe explain the synthesis of l chain fatty acids and identify the cofa required; explain the synth of of polyunsaturated fatty ac	fatty biosynthesis and Eicosinoids	=	=

11. Course Assessment

Mid-term exam 15 marks
Pop quizzes and homework assignments 5 marks
Practical part 20 marks
End of Semester Exam 60 marks

12. Learning and Teaching Resources

Required textbooks) Methodolog any (	Harper's Illustrated Biochemistry, 32 ed.
Main References) Sources)	Lippincott Illustrated Reviews: Biochemistry, 7thed. Lehninger Principles of Biochemistry, 8thed.

158. Course Name	
Medicinal Drugs and Plants III	
159. Course Code	
160. Semester / Year / Semester	
Second Semester Third Stage Academic Year 2024 - 2025	
161. Date of preparation of this description	
7/7/2025	
162. In-Person / Online	
In-Person	
163. Number of Hours (Total) / Number of Units / (Total)	
Number of Hours: 2 Number of Units:2	
164. Course Administrator Name (if more than one name is also mentioned)	
Dr. Mohamed Faraj Abdel Halim dr.farag@gmail.com	
165. Course Objectives	
This course aims to study the chemistry of other natural products, especially alkaloids and antibiotics. It also includes the study of phytotherapy techniques and tissue culture used in the production of natural products.	**Core Course Objectives**
166. Teaching and Learning Strategies	
Teaching and Learning Strategies: Presentation and Presentation, Interactive Discussions, Seminars, Brainstorming, Problem Solving **A. Cognitive Objectives** 1. Understand the relationship between chemical composition and pharmacological effect of the active ingredient 2 - Enhancing the practical aspect: Training students to distinguish plant parts under the microscope. 3. Preparation of simple extracts and laboratory experiments. 3. Knowledge of the chemical composition of drugs 4. Understand the traditional methods of extracting active substances from plants and introduce the student to the types of active substances extracted from	

medicinal plants, such as: • Alkaloids, Antibiotics, etc. 5- Distinguishing medicinal plants according to their chemical content and medicinal use. 6- Identify plants that contain toxic compounds and identify ways to use them carefully. 7- Knowing the sources, methods of extraction, and storage of plant drugs in a way that maintains their effectiveness. 8- Distinguishing adulteration in natural drugs and knowing the methods of testing purity and quality. **B . Skill objectives of the course.** It focuses on training the student practically on the basic skills: 1. Characterization of dried plant specimens using morphological and macroscopic characteristics. 2. Using a microscope to examine drug slides and determine their anatomical characteristics. 3. Prepare vegetable slices and test them in a laboratory. 4. Use basic extraction methods (e.g. soaking, boiling, alcohol extraction...) to prepare extracts from plant drugs. 5. Apply simple chemical tests to determine the presence of some active compounds. 6. Distinguish between genuine and counterfeit or counterfeit drugs using analytical skills **C. Emotional and value goals** 1 . Enhancing the student's respect for the natural healing heritage: • Developing an appreciation for medicinal plants as part of the scientific and cultural heritage in traditional and folk medicine. 2. Instilling ethical values in dealing with natural drugs: • Commitment to honesty and scientific honesty in distinguishing between genuine and counterfeit drugs. • Avoid promoting or dealing with unreliable or low-quality products.	

3. Develop a sense of responsibility towards the safe use of drugs: • Recognize the importance of proper use of medicinal plants and avoid poisoning or drug interactions. 4. Promote attention to the environment and medicinal plants: • Adopting positive attitudes towards the conservation of rare medicinal plants and not contributing to their depletion or extinction. 5. Encourage scientific curiosity and love of research: • Motivating the student to explore the benefits of new plants and study their properties in a systematic scientific manner. 6. Developing a professional sense and belonging to the specialty of pharmacy: • Recognize the role of the pharmacist as a reliable scientific source in the field of phytotherapy and natural drugs. 7. Mutual respect and teamwork in the laboratory: • Promote collaboration, discipline and teamwork during practical lessons **d. General and qualifying skills transferred (other skills related to employability and personal development)** 1- Scientific and Professional Skills: • Mastering the knowledge of natural drugs and their active substances. • Skill in extracting and analyzing plant ingredients. • Ability to evaluate quality and detect adulteration in raw materials. • Understand the basics of manufacturing herbal products according to pharmaceutical standards. 2. Personal and developmental skills: • Critical thinking and solving pharmaceutical problems. • Research and scientific writing skills. • Effective scientific communication with colleagues and patients. • A desire for continuous learning and follow-up of scientific developments. 3. Labor Market Skills: • Use of analytical devices (TLC, HPLC, GC-MS). • Work in multidisciplinary teams. • Ability to innovate and entrepreneur in natural products.	

• Understand the basics of marketing and good manufacturing practices.					
167. Course Structure					
Evaluation Method	Learning Method	Units or Topic Name	Required Learner Outcomes	Hours	Week
Test Exam	Lectures	Alkaloids: Introduction, physical and chemical properties, pyridine alkaloids, piperidine alkaloids, tropane alkaloids.	Describe the chemical structures and physical and chemical properties of naturally derived by-products used in the biosynthesis process of compounds	5	1-3
Test Exam	Lecture	Alkaloids: quinolin alkaloids tropane, isoquinoline alkaloids, imidazole alkaloids, indole alkaloids.	Phytochemistry characterization of the structures of secondary metabolites used in the study of active substances	5	3-5
Daily exam	Lecture	Alkaloids: steroid alkaloids, lupinan alkaloids, alkaloid amines, purine alkaloids.	Phytochemistry characterization of the structures of secondary metabolites used in the study and composition of active substances	4	6-7
Semester Exam	Lecture	Antibiotics: natural sources, biosynthesis pathways, isolation and purification.	Antibiotics	6	8-10
Exam Format	Lecture	Phytotherapy: Introduction, principles,	Phytotherapy: Introduction,	10	11-15

		and use of medicinal plants in selected healthcare systems. The most important natural products and plant compounds used in pharmacy and medicine.	the most important natural products and plant compounds used in pharmacy and medicine.		

168. Course Evaluation

100 Degree

20 Practical Lab Grades (including Daily Exams, Homework, Seminars, Interactive Questions, Student Participation, and Weekly Reports)

20 marks for the mid-term exam and written exams

60 Final Exam

169. Learning and Teaching Resources

Robbers JE, Speedie MK, Tyler VE (Eds.); Pharmacognosy and Pharmacobiotechnology; the latest edition.	Course Books & References
Michael Heinrich, Joanne Barnes; Fundamentals of Pharmacognosy & Phytotherapy.	reference
Pharmacognosy 9th edition Varro E.Tyler, Lynn R.Brady.	reference

170. Course Name

Ethics

171. Course Code

172. Semester / Year / Semester

Third Stage Second Semester / Academic Year 2024-2025

173. Date of preparation of this description

2024

174. In-Person / Online	
In-Person	
175. Number of Hours (Total) / Number of Units / (Total)	
Number of Units:1	
176. Course Administrator Name (if more than one name is also mentioned)	
Prof. Dr. Ismail Taha Ibrahim ismailtaha2018@Gmail.co	
177. Course Objectives	
This course provides an overview of the ethical issues facing practicing pharmacists in order to Enable the student to understand the basic concepts of ethics that shape the pharmacist's relationship with patients, colleges and other health workers in order to provide their pharmaceutical services in a Good	**Core Course Objectives**
178. Teaching and Learning Strategies	
Presentation and Presentation **Brainstorming** **Interactive Discussions**	

179. Course Structure

Week	Hours	Required Learner Outcomes	Units or Topic Name	Learning Method	Evaluation Method
1	1	**History and Definition Pharmacy Ethics**	Introduction to **Pharmacy Ethics**		
1-	1	**Principles and Code of Ethics Pharmacy**	**Code of Ethics Pharmacy**	Lectures	**Written exam**
3	1	**Definitions and Examples of Ethical Considerations**	**Ethical Considerations Pharmacy**	Lecture	**Written exam**

		Pharmacy			
4	1	**Definitions and Examples of Ethical Considerations Other Pharmacy**	**Ethical Considerations Pharmacy**	Lecture	**Written exam**
5	1	**How to Build Considerations Professionalism**	**Considerations Professionalism**	Lecture	**Written exam**
6	1	**Types of Decisions Ethics**	**Resolutions Ethics**	Lecture	**Written exam**
7		Mid-term exam			
8	1	**Understand how to play Ethics plays an important role before Conducting a research study**	**Ethics Research**	Lecture	**Written exam**
9	1	**Definition of non-use The Right Medication**	Usage **is not The Right Medication**	Lecture	**Written exam**
10-13	3	**Application of considerations Ethics and some Clinical Cases The most important ethical problems In Pathological Conditions**	**Ethical Problems In Pathological Conditions**	Lecture	**Written exam**

180. Course Evaluation

100 Degree

30 marks for mid-term exams, written exams , interactions and student activities

70 Final Exam

181. Learning and Teaching Resources

Robert J. Cipolle, Linda M. Strand, Peter C. Morley. Pharmaceutical Care Practice: The Clinician's Guide	Course Books References
1- Course notes in medical ethics and low 2-Compelling_Ethical_Challenges_in_Critical_Care_and_Emergency_Medicine	reference