

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



Academic Program and Course Description Guide

The introduction:

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

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

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

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

Concepts and terminology:

Academic Program Description :

The college is keen to provide high-quality education and training with the latest and multidisciplinary means to prepare pharmacists and pharmacy scientists with high scientific and professional capabilities and skills to be leaders in their specialties capable of spreading health culture and providing the best health care in society and developing scientific research for the welfare of society and human health. The academic program focuses on the development of intellectual, practical, clinical, applied and behavioral skills within the various stages of study to ensure a high level of competence for graduates.

The description of the academic program also provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies .

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities. It is derived from the description of the program.

Program Vision: An ambitious picture for the future of the academic program to be a sophisticated, inspiring, stimulating, realistic and applicable program .

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (semester, yearly, Bologna track) whether it is a requirement (ministry, university, college and scientific department) with the number of study units .

Learning Outcomes: A compatible set of knowledge, skills and values acquired by the student after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program .

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

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Academic program description form

Educational institution: Ministry of Higher Education and Scientific Research

University name: University of Basra

College/Institute: pharmacy college

The branch Scientific: Pharmaceutical chemistry

Name of the academic or professional program: Sciences in pharmacy.

Name of final degree: Bachelor's degree Sciences in pharmacy

School system: quarterly

Description preparation date: 28/05/2025

File filling date: 28/05/2025

Signature:



Head of Branch Name:

Dr. Leaqa Abdulredha Raheem

Date: 18/08/2025



Scientific Associate Name:

Date:

Check the file before

Division of Quality Assurance and University Performance Dr.Rana Hasan

Name of the Director of the Quality Assurance and University Performance Division:

the signature

Authentication of the Dean



1. See the program

Seeking college the pharmacy That the branch be distinguished at the local, Arab and international levels as an institution with a high academic level by providing a high-quality level of education that produces understanding pharmacists and reaching a leadership position in the field of scientific research related to natural resources, establishing a pharmaceutical laboratory and a consulting office, and opening postgraduate studies to increase the expertise of college graduates, as well as On developing the teaching and administrative staff.

2. Program message

The Pharmaceutical Chemistry Branch is one of the branches of the College of Pharmacy. It was established in 1999. The branch provides service to the college through teaching and scientific research to provide health institutions with pharmaceutical expertise and competencies and provide pharmaceutical consultations to state institutions.

3. Program Goals

9. Objectives of the academic program

Teaching pharmacy students subjects in pharmaceutical chemistry through an approved study plan, conducting research supported by the university and other parties outside the university in the field of specialization, cooperating with other parties in the field of providing pharmaceutical services, expertise and consultations, and attending conferences to enrich scientific research and acquire the necessary skills and expertise to develop this academic field.

The first stage

Chapter One: Analytical Chemistry

The first stage: In the first stage, the academic program focuses on intellectual skills and enhancing knowledge in the basic sciences that pave the way for pharmacy specialization. The first stage program also includes developing basic laboratory skills such as measuring weights and volumes, using laboratory tools, and performing the calculations required in later stages of study and within the work of the pharmacist.

Chapter Two: Organic Chemistry **I**

On its basis, the student studies organic chemistry, its theoretical foundations, and methods of separation and preparation.

The second stage

Chapter One: Organic Chemistry II

It studies organic chemical reactions and their mechanics.

Chapter Two: Organic Chemistry **III**

It studies organic cyclic compounds that are used in the pharmaceutical industry.

Third stage

The academic program in the third stage represents the first level of specialization in pharmaceutical sciences by linking the chemistry of the drug, its natural and non-natural sources, its mechanism of action, and basic drug doses and their characteristics.

Chapter One: Inorganic pharmaceutical chemistry

Which is concerned with preparing medicines that contain inorganic compounds.

Second semester: Pharmaceutical chemistry **I**

It is interested in studying the chemical and physical properties of drugs, as well as the biological processes of drug metabolism (disintegration) in the body.

The fourth stage

The academic program in the fourth stage focuses on the pharmacist's skills in dealing with patients in community and hospital pharmacy. These skills include intellectual skills, practical skills, behavioral and moral skills.

Chapter One: Pharmaceutical Chemistry **II**

Preparation, diagnosis and effectiveness of nervous system medications, analgesics and hormones.

Second semester: Pharmaceutical chemistry **III**

Preparing, diagnosing and studying the effectiveness of antibiotics and anti-cancer agents.

level five

The academic program in the fifth and final stage is based on including an advanced level of knowledge in advanced pharmaceutical sciences related to drug chemistry and drug management.

Chapter One: Pharmaceutical Chemistry **IV**

It studies modern methods for preparing medicines and ways to increase their effectiveness and solve the problems of some medicines and base them on polymeric materials.

Second chapter: Advanced pharmaceutical analysis. It studies the spectroscopic methods necessary to diagnose drugs in the laboratory as well as monitor them in the body.

4. Program accreditation

nothing

5. Other external influences

Practical part and seminars

6. Program structure

Program structure	Number of courses	Study unit	percentage	comments *
Enterprise requirements				
College requirements				

The requirements branch	10	36		
summer training				
Other				

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

7. Program description					
Credit hours		Name of the course or course	Course or course code	Seme ster	Year/level
practical	theor etical				
1	3	Analytical Chemistry	113	F1	First stage
1	3	Organic Chemistry I	1210	F2	
1	3	Organic Chemistry II	211	F1	Second stage
1	2	Organic Chemistry III	226	F2	
1	2	Inorganic Pharmaceutical Chemistry	311	F1	Third stage
1	3	Organic Pharmaceutical Chemistry I	326	F2	
1	3	Organic Pharmaceutical Chemistry II	412	F1	Fourth stage
1	3	Organic Pharmaceutical Chemistry III	427	F2	
0	2	Organic Pharmaceutical Chemistry IV	511	F1	Fifth stage
1	3	Advanced Pharmaceutical Analyses	5210	F2	

8. Expected learning outcomes of the programme
Knowledge
<ul style="list-style-type: none"> 1- Definition of methods of preparation of pharmaceutical chemical compounds 2- Introducing the methods of diagnosing chemical compounds by chemical and spectral methods 3 -Definition of methods of diagnosis and volumetric, quantitative and spectral separation 4- Knowledge of the pharmacological composition, side effects and mechanism of action of the drug. 5- Study of chemical and physical properties of medicines and drug metabolism. 6-Study of changing the effective groups of compounds in order to increase the effectiveness of pharmacological
Skills
<ul style="list-style-type: none"> 1 -Acquire the skills of preparing and manufacturing medicines. 2 -The student acquires the skill of dealing with laboratory equipment . 3 - Acquire the skills of knowing the effect of some types of additives on the properties of medicines and their effectiveness. 4 - Acquire the skills to increase the stability of pharmaceutical forms outside or inside the body. 5 - Acquire the skills of drug diagnosis, its mechanism of action and the side effects of the drug.
Value
<ul style="list-style-type: none"> 1 .Theoretical Debates 2 -Instructive Meditation 3 .Practice 4- Classroom Circles

9. Teaching and learning strategies
<ul style="list-style-type: none"> -Explanation of the scientific material from During the presentation and recitation - Interactive discussions - Brainstorming.

10. Evaluation methods
<ul style="list-style-type: none"> - Oral discussions, daily written tests, individual reports, as well as practical skills assessment . - Semester exams and end-of-semester exams, in addition to graduation projects.

Full Name	Specialization		Date of first appointment: day, month, year	Date obtained The scientific title Day month year
	General	Private		
Prof. Dr. Shakir Abdel Salem Nehme	Chemistry	Inorganic chemistry	9/8/1977	11/30/2014
Prof. Dr. Raheem Jamil Muhaisen	Sciences in pharmacy	Pharmaceutical Chemistry	7/7/1999	8/22/2017
Prof. Dr. Hussam Hamza Salman Ghareeb	Chemistry	Organic Chemistry	1/8/2002	8/12/2019
Prof. Dr. Rita Sabah Elias Ruto	Sciences in pharmacy	Pharmaceutical Chemistry	3/30/1998	7/12/2020
Prof. Dr. Leaqa Abdul Redha Raheem Ayez	Sciences in pharmacy	Pharmaceutical Chemistry	10/17/1999	1/17/2021
Prof. Mazen Nazim Musa Maala	Pharmacy	Pharmaceutical Chemistry	8/24/1980	7/20/2022
Asst. Prof. Dr.. Heba Najeh Jassim Al-Saad	Pharmacy	Pharmaceutical Chemistry	7/27/2008	4/26/2023
lec. Badr Saleh Salem Saleh Al-Abdullah	Pharmacy	Pharmaceutical Chemistry	7/10/2006	4/5/2018
Asst. Prof. Maan Abdul Razzaq Suwayd Naeem	chemistry	Physical Chemistry	4/28/2019	4/28/2019
Asst. Prof. Mudar Najm Abdullah Hassan Effendi	chemistry	Organic Chemistry	12/18/2002	1/31/2021
Prof. Dr. Hussein Nasser Khalaf	chemistry	Analytical Chemistry	6/7/2002	10/11/2019
Lec. Sita Azad Aghward	Chemistry	Organic Chemistry	2/18/2003	1/6/2014
Asst. Prof. Irfan Abdul Razzaq	Chemistry	Analytical Chemistry	5/21/2001	3/23/2021
Lec. Athraa Fuad khudhair	Chemistry	Inorganic chemistry	2001	
Lec. Ruaa Salman	Pharmacy	Pharmaceutical Chemistry	7/30/2009	9/11/2021
Lec. Dr. Hanan Fouaad Mazal	Chemistry	Organic Chemistry	2003	22/04/2025
Lec. Dr, Ali Ganem	Chemistry	Organic Chemistry	1999	27/4/2025
Lec. Ali Khamas Muhammad	Pharmacy	Pharmaceutical chemistry	3/19/2007	2/6/2022
Assist. lec. Mustafa Muhammad Hussein	Pharmacy	Pharmaceutical Chemistry	10/26/2014	3/12/2021
Assist. lec. Mustafa Qusay	Pharmacy	Pharmaceutical Chemistry	9/21/2014	3/12/2021
Assist. lec.. Khaldoon Shakir	Pharmacy	Pharmaceutical Chemistry	7/23/2009	3/12/2021
Assist. lec. Lamiaa Hameed	Pharmacy	Pharmaceutical Chemistry	10/29/2008	6/20/2021

Assist.lec. Rawnaq Thamer	Chemistry	Analytical chemistry	2/18/2002	6/14/2022
Assist.lec. Israa Radi	Chemistry	Organic Chemistry	5/29/2000	11/10/202 2
Assist.lec. Jumana Najm	Chemistry	Analytical Chemistry	8/13/2002	1/23/2021
Ch. Zainab Asaad	Chemistry	Bachelor's	10/10/1999	11/6/2006
Ph. Abbas Mundher Nassir	pharmacy	pharmacy	14/12/2024	14/12/202 4
Ph.Zehraa Mohamed Funjan	pharmacy	Pharmacy	14/12/2024	14/12/202 4
Ph. Aliaa fyadh Omeer	pharmacy	pharmacy	14/12/2024	14/12/202 4

Professional development

Briefly describe Orienting new faculty members The process used to orient new, visiting, full-time and part-time faculty at the institution and department levels.

Professional development for faculty members

Planning for personal development. The academic program includes workshops, seminars, and discussion panels that focus on aspects of general societal behavior and pharmaceutical behavior in particular. The academic program includes students' participation in various sports, cultural, humanitarian, and community activities. The academic program includes special seminars in which students present scientific products.

It also briefly describes the academic and professional development plan and arrangements for faculty members, such as teaching and learning strategies, assessment of learning outcomes, professional development, and Developing communication skills, scientific discussions, etc.

11. Acceptance standard

Central admission, Ministry of Higher Education and Scientific Research for each of the following:

- My sixth scientific graduate
- The first ones from the medical institute
- The first in the first stage in the Faculty of Science
- The first in the first stage of the medical institute

12. The most important sources of information about the program

The website of the College of Pharmacy at the University of Basra in Arabic and English. The website of the University of Baghdad. The website of the Ministry of Higher Education and Scientific Research. The page of the College of Pharmacy at the University of Baghdad on social networking sites. The billboards installed in the corridors of the college.

13. Program development plan

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
1- Oral discussions in the hall and written tests. 2-Mid-semester and end-of-semester exams. 3-Laboratory reports	Educational lectures	Analytical chemistry	Evaluation of medications qualitatively and quantitatively A- Cognitive objectives 1- Identify the basic principles of analytical chemistry in its various aspects. 2- Correct and precise handling of chemical materials 3- Conducting practical experiments in analytical chemistry to detect various elements and compounds. 4- A Developing the student's ability to use glass tools, the usefulness of each tool and the method of using it, and teaching the student to use special tools for planning and the basic principles of planning technique.. 5- Study various methods of chemical reactions such as neutralization, oxidation, reduction, precipitation, and complex formation.	3 theoretical And 2practical	15
1. Course evaluation					
Theoretical and practical subjects are worth 50 marks, while only the theoretical courses are worth 30 marks and include written exams during lectures and attendance, in addition to semester and end-of-semester exams.					
2. Learning and teaching resources					
- Text book of organic pharmaceutical and medicinal chemistry, by Wilson and Gisvold -Inorganic pharmaceutical chemistry, by Block -Analytical chemistry by scogge -Organic chemistry by Morison					
There are many sources that can be relied upon on the Internet			Electronic references, Internet sites		

Course description form

Course Name:	Analytical Chemistry
Course Code:	113
Semester/Year: Annual	Season first
Date this description was prepared:	18/08/2025
Available attendance forms:	first stage
Number of study hours (total)/number of units (total):	45 hours first semester, 3 hours per week
Name of the course administrator (if more than one name is mentioned)	
Prof. Dr. Hussein Nasser Khalaf	hussain.khalf@uobasrah.edu.iq
Course objectives	<p>Laying the correct foundations and increasing the student's knowledge of pharmaceutical chemicals because of their impact on the study of Pharmaceutical sciences. The student learns how to detect organic and inorganic compounds in various types of chemicals and pharmaceutical products.</p> <p>Providing students with scientific experience in the field of analytical chemistry in various methods, including neutralization reactions and the effect of acidity on various reactions of simple and complex compounds, qualitative analysis and its importance in various fields of life and other sciences, and detection of compounds by a number of methods using sedimentation titration, complex formation titration, and oxidation titration And the reduction.</p> <p>Developing students' ability to handle chemicals and glassware in a safe manner..</p>
Teaching and learning strategies	<p>Course outcomes, teaching, learning and evaluation methods</p> <p>A- Cognitive objectives</p> <ol style="list-style-type: none"> 1- Identify the basic principles of analytical chemistry in its various aspects. 2- Correct and precise handling of chemical materials. 3- Conducting practical experiments in analytical chemistry to detect various elements and compounds. 4- Developing the student's ability to use glass tools, the usefulness of each tool and the method of using it, teaching the student to use Tools for plastering and the basic principles of plastering technology. 5- Studying various methods of chemical reactions such as neutralization, oxidation, reduction, precipitation, and complex formation. <p>B- The skills objectives of the course</p> <ol style="list-style-type: none"> 1- Acquiring the skill of diagnosing the type of substance that can be obtained when mixed with different chemicals. 2- Acquiring the skill of dealing with incendiary chemicals such as acids and bases 3 - Acquiring the skill in writing scientific reports. 4- Increasing the student's ability to work individually or in a group. <p>Teaching and learning methods</p>

- 1- Theoretical lectures in the classroom.
- 2- Educational laboratories.
- 3- Conduct scientific research.

Evaluation methods

- 1- Oral discussions in the hall and written tests
- 2-Mid-semester and end-of-semester exams.
- 3-- Laboratory reports.
- 4- Weekly or bi-weekly examinations in the laboratory.

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1	4	Review of important approved concepts in analytical chemistry: strong and weak electrolytes; Important units of weight and concentration. - evaluation Analysis methods	Review of elementary concept important to analytical chemistry: strong and weak electrolytes; important weight and concentration units - The evaluation of analytical data: Definition of terms.	Educational lectures	1- Oral discussions in the hall and written tests. 2-Mid-semester and end-of-semester exams. 3-Laboratory reports
5-2	10	Introduction to weight analysis: statistical analysis of data; Data rejection, regression analysis methods, sedimentation methods and weight factor.	An introduction to gravimetric analysis: Statistical analysis of data; rejection of data; precipitation methods; gravimetric factor.		
6	4	Scope of applications of gravimetric analysis: inorganic precipitation agents; Organic precipitation agents.	The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents.		
7-8	5	Introduction to volumetric analysis methods: volumetric calculations. Acid-base balance and pH calculations.	An introduction to volumetric methods of analysis: Volumetric calculations; acid-base equilibria and pH calculations.		
9	3	Buffer solutions and a study of the neutralization standard in simple solutions	Buffer solutions: Theory of neutralization titrations of simple system.		
10-11	5	Study of the neutralization standard in complex and precipitated solutions	<i>Theory of neutralization titrations of complex system; Precipitation titrations.</i>		
12	4	Calculations of the acid function for complex systems, volumetric methods based on the complex system.	Calculation of pH in complex system; Volumetric methods based on complex system.		

13-14	6	Equilibrium theory in the titration of complexes and sedimentation systems.	Theory of neutralization titrations of complex system; Precipitation titrations.		
15	4	Study of Spectroscopy Methods: Introduction to Optical Analysis Methods; Methods based on radiation absorption.	Spectrophotometric analysis: An introduction to optical methods of analysis; Methods based on absorption of radiation.		
Course evaluation					
Distribution is as follows: 40 degrees quarterly and practical exam and daily exams for the first semester 60 Score of the end of the first semester exam (first semester final).					
Learning and teaching resources					
- Fundamentals of Analytical Chemistry by Stook and West, 9 Edition.					
Electronic references, Internet sites			There are many sources that can be relied upon on the Internet		

Course description form

Course Name:	Organic Chemistry II
Course Code:	211
the chapter/the year:	First chapter
Date this description was prepared:	18/08/2025
Available attendance forms:	Second stage
Number of study hours (total)/number of units (total):	45 hour First semester, 3 An hour a week
Name of the course administrator (if more than one name is mentioned)	
Prof. Dr. Hussam Hamza Salman	husam.salman@uobasrah.edu.iq
A.M.D. Mudher Najm Abdullah	madher.abdulla@uobasrah.edu.iq
Course objectives	
The private and government sectors have qualified pharmacists who have medical skills in the field of manufacturing medicines from organic compounds and methods Diagnosis Prepared medicines, calculating their concentration and expiry date, as well as knowing the characteristics of pharmaceutical compounds, as well as conducting research in the field of providing pharmaceutical services, expertise and	

consultations, and attending conferences to enrich scientific research and acquire the skills and expertise necessary to develop this academic field.-Y

Teaching and learning strategies

A- Knowledge Objectives

- 1 - Increase knowledge of the basic principles of organic chemistry
- 2 -Study of chemical reaction methods
- 3 -Conducting practical experiments to detect different groups of chemical compounds
- 4 - Proper handling of chemicals and glassware.

B- Course Skill Objectives

- 1 -Acquire skill on how to detect and identify chemical compounds.
- 2 -Acquire skill on how to write practical reports.

Teaching and learning methods

- 1 .Theoretical lectures
- 2 .Conduct practical experiments
- 3 .Scientific research
- 4 -Methodological and supportive books
- 5 -Scientific discussions and seminars.

Evaluation methods

- 1 .Mid-term exams and final exams
- 2 .Daily oral and written exams
- 3 .Practical laboratory exams
4. Laboratory reports

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1-4	10	Aromatic HCs (including,benzene, substitution Compensators on the ring Arenes and their derivatives,	Aromatic Hydrocarbons (Includes benzene, electrophilic aromatic substitution, arenas and their derivatives).	a lecture	Daily oral tests and examinations Weekly and monthly editorial half of the class And the final exam the chapter.
5-7	12	. Carboxylic acids (their properties and interactions)	2- Carboxylic acids: properties, reactions and carboxylic derivatives.		
8-9	5	Primary and secondary amines	Amines I and II.		
10-13	12	Aldehydes and ketones (also include aldol and glycine condensates); Classification, interactions and properties.	Aldehydes and ketones (Include also aldol and Claisen condensation); Classification, reaction and properties.		
14-15	5	Phenols	Phenols		

Course evaluation

Distribution is as follows

30 degrees quarterly and practical exam and daily exams for the first semester70Score of the end of the first semester exam(ultimate).

Learning and teaching resources	
1-Organic Chemistry by Robert T. Morrison and Robert N. Boyd.	
2- Organic Chemistry by McCurry; 5th ed.; Thomason learning; CA, USA 2000	
Electronic references, Internet sites	

Course Name:	Inorganic Medicinal and Pharmaceutical Chemistry
Course Code:	311
the chapter/the year:	First chapter
Date this description was prepared:	18/08/2025
Available attendance forms:	third stage
Number of study hours (total)/number of units (total):	30 hourFirst semester,3An hour a week
Name of the course administrator (if more than one name is mentioned)	
Prof.Dr. Raheem J. Mahesein	Raheem.mahesein@uobasrah.edu.iq
Lect. . Roaa Salman Pune	Roaa.Salman@uobasrah.edu.iq
lec. Ali Khamas Muhammad	ali.khamas@uobasrah.edu.iq
Course objectives	<p>It includes review of the principles of inorganic chemistry that apply to medicinal or pharmaceutical chemistry Shedding light on the biological role of trace elements and inorganic compounds, studying the biological and pathological effects of the necessary (essential) elements of the body, and studying the toxicological and therapeutic effects of non-essential elements of the body. Study of the atomic structure of radioactive isotopes and the therapeutic, therapeutic and medical effects of various types of radiation Atomicity.</p> <p>Studying the biological and therapeutic effect of inorganic compounds in treating diseases of the digestive system and their various pharmaceutical uses.</p>
Teaching and learning strategies	<p>A- Knowledge Objectives</p> <ol style="list-style-type: none"> 1 -Knowing the methods of manufacturing some compounds and medicines 2 -How to deal with chemical compounds 3 -Conducting practical experiments for the manufacture and purification of vehicles <p>B- Course Skills Objectives</p> <ol style="list-style-type: none"> 1 -Acquire skill in the use of different methods in the manufacture and preparation of medicines 2 - Acquire skill in how to deal with chemical compounds 3 -Acquire skill in writing practical reports <p>Teaching and learning methods</p> <ol style="list-style-type: none"> 1 -Theoretical lectures

- 2 -Conducting scientific experiments
- 3 -Seminars
- 4 -Daily duties
- 5 -Written exams
- 6 -Methodological and supportive books

Evaluation methods

- 1 -Oral exams
- 2 -Written exams
- 3 -Scientific reports
- 4- Laboratory practical exams

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Weekly, monthly, daily, written exams and a final exam the chapter.	Lectures Use PowerPoint to present the lecture And the blackboard	Atomic and molecular structure/ Complexation.	The concept of atoms, bold, complexes or chelates	6	1-3
		Essential and trace ions: Iron, copper, sulfur, iodine. And essential ions: fluoride, bromide, lithium, gold, silver and mercury.	Essential trace ions: iron, copper, sulfur, iodine Non-essentials (fluorine, bromine, lithium, gold, silver, mercury) with the highest concentration	5	2-5
		gastrointestinal agents: acidifying agents.	Inorganic compounds used in the treatment of digestive disorders	4	6-7
		Topical agents.	Topical medications	2	8
		Dental agents.	Inorganic compounds used in dental treatment	1	9
		Radiopharmaceutical preparations and Radio opaque and contrast media.	Radiopharmaceutical preparations (radioactive preparations)	6	12-10

Course evaluation

Distribution is as follows

40 degrees quarterly and practical exam and daily exams for the first semester 60 Score of the end of the first semester exam (first semester final).

Learning and teaching resources

1-Inorganic Medicinal and Pharmaceutical Chemistry by Block, Roche Soine and Wilson, latest edition

2-Wilson and Gisvold;

Textbook of Organic medicinal and pharmaceutical chemistry; Delgado JN, Remers WA, (eds); latest edition

Electronic references, Internet sites

Course Name:	Organic Pharmaceutical Chemistry II
Course Code:	412
The chapter/the year:	Season first
Date this description was prepared:	18/08/2025
Available attendance forms:	Fourth stage
Number of study hours (total)/number of units (total):	45hourFirst semester,3An hour a week
Name of the course administrator (if more than one name is mentioned)	
Prof. Dr. Rita Sabah Elias	Rita.elias@uobasrah.edu.iq
Assit.Prof. .Dr. Hiba Najeh Jassem	hiba.jassem@uobasrah.edu.iq
Course objectives	<p>This course is devoted to the discovery and development of new compounds for the treatment of diseases and allows the translation of the structural formula of the drug into a therapeutic effect. In addition .It focuses on the methods of preparation of certain pharmaceutical compounds</p> <p>-Includes a study of the relationship between the chemical composition of compounds and efficacy (such as some drugs used in the treatment of sympathetic system disorders And drugs used in the treatment of disorders of the adrenal system.</p> <p>-The study of drug kinetics within the organism includes the mechanisms of absorption, metabolism and excretion</p> <p>Preparing students to know the chemical structures of compounds and their relationship to the vital activities of the human body.</p>
Teaching and learning strategies	<p>Course Outcomes and Methods of Teaching, Learning and Assessment</p> <p>A- Knowledge Objectives</p> <ol style="list-style-type: none"> 1 -How to deal with chemical compounds 2 -Knowing the methods of manufacturing some compounds and medicines 3 -Conducting practical experiments for the manufacture and purification of vehicles <p>B- Course Skills Objectives</p> <p>Acquire skill in preparing compounds and medicines</p> <ol style="list-style-type: none"> 2 -Acquire skill in the use of different methods in the manufacture and preparation of medicines 3 -Acquire skill in how to deal with chemical compounds <p>Teaching and learning methods</p> <ol style="list-style-type: none"> 1 -Theoretical lectures 2 -Conducting scientific experiments 3 -Daily duties 4 -Written exams 5 -Methodological and supportive books

Evaluation methods
 -Oral exams
 2 -Written exams
 3 -Scientific reports
 4- Laboratory practical exams

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1-4	13	Medicines used to treat cholinergic system disorders	Cholinergic agents, cholinergic receptors and their subtypes. - Cholinergic agonists; stereochemistry and structure-activity relationships (SAR); products; cholinesterase inhibitors. -(Cholinergic blocking agent; structure-activity relationships (SAR); Solanaceous alkaloid and analogues; synthetic cholinergic blocking agents and products; ganglionic blocking agents (neuromuscular blocking agents).	Lectures	Daily oral and written Daily oral and written exams, semi-semester written exams and end-of-semester exams
5-7	10	Analgesic drugs and the relationship of the chemical composition with the effectiveness of morphine, benzomorphan and other compounds.. Analgesic compound receptor, anti-allergic and anti-inflammatory compounds	Analgesic agents (SAR of morphine, SAR of meperidine type molecules; SAR of methadone type compounds; N-methylbezomorphans, antagonist type analgesics in benzomorphans). - Analgesic receptors, endogenous opioids; Products; Antitusive agents; Anti-inflammatory analgesic).		
8-11	8	Adrenergic system drugs, adrenaline receptor, effect of drugs on the epinephrine system, adrenaline receptor inhibitor	Adrenergic agents (Adrenergic neurotransmitters); Adrenergic receptors; Drugs affecting Adrenergic neurotransmission; Sympathomimetic agents; Adrenergic receptor antagonists		
12-14	10	Central nervous system depressants (depressants): benzodiazepine,	CNS depressant; Benzodiazepine and related compounds Barbiturates; CNS depressant with skeletal muscle relaxants		

		and related compounds Barbureate, antispasmodics -Central nervous system stimulants	properties; Antipsychot Anticonvulsa -CNS stimula		
15	4	Steroidal and non-steroidal hormones	Steroidal & nonsteroidal hormones		

Course evaluation

Distribution is as follows:

40 degrees
A quarterly and practical exam and daily exams for the first semester
60 Score of the end of the first semester exam (first semester final).

Learning and teaching resources

.Wilson and Gisvold Textbook of Organic Medicinal and Pharmaceutical Chemistry; Delgado JN, Remers WA, (Eds.); 10th ed., 2004.

Foye's Principles of Medicinal Chemistry (Thomas L. Lemke and Dav Williams)

Electronic references, Internet sites

Course Name:	Organic Pharmaceutical Chemistry IV
Course Code:	511
The chapter/the year:	Season first
Date this description was prepared:	18/08/2025
Available attendance forms:	Fifth stage
Number of study hours (total)/number of units (total):	30 hour First semester, 2 An hour a week
Name of the course administrator (if more than one name is mentioned)	
Prof. Dr. Leaqa Abdulredha Raheem	leaqa.raheem @uobasrah.edu.iq
Assis.Prof. Mazin Nadham Mousa	mazin.Mousa@uobasrah.edu.iq

Course objectives

Study of pharmaceutical preparations, their properties, preparation and medical uses.

- Studying the use of computers in drug design
- To learn about the latest methods used in designing and developing medicines.

Teaching and learning strategies

- Course outcomes and teaching, learning and evaluation methods

A- Cognitive objectives

- 1- Study some advanced and modern topics in the field of drug design and development.
- 2 - Identify the approved strategies to increase the effectiveness of used medications by converting them into primary medications that are not subject to metabolism or change. Chemical, which is later transformed into an effective drug inside the body.
- 3-Learn how to use drug design programs for drug discovery and development.

B - Skills objectives for the course:

- 1- Learn about the work of drug design programs
- 2- Focus on educating students on how to benefit from the acquired skills in developing the scientific and academic aspect.

C- Teaching and learning methods:

- 1-Giving theoretical lectures
- 2- Interact with students and give them the opportunity to ask questions and discuss them
- 3-Homework
- 4-Written exams

Evaluation methods:

- 1-Daily oral evaluation
- 2-Written exams
- 3-Viewing students' scientific reports

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1	6	The basics of the prodrak concept, the breaking of covalent bonds, the type of effective group, the types of prodrak.	Basic concept of products; Covalent bonds (cleavable); Products of functional groups; Types of products.	Lectures	a For daily test and exam Weekly And the monthly Editorial For half the semester And the final exam the chapter.
2	6	Drug release system, Prodrak polymer, structural structure of the polymer and type of attachment to the polymer structure	Chemical delivery systems; Polymeric products; Types and structure of polymers; Cross-linking agents.		
3	4	The drug is released into the tissue concerned	Drug targeting.		

		with the problem			
4	4	Graduation Project	Project.		
5	5	Combinatorial chemistry for research, peptides and compounds with linear structures.	Combinatorial chemistry; Peptides and other linear structures; Drug like molecules; Support and linker; Solution-phase combinatorial chemistry.		
6	5	Purification and diagnosis of analgesic compounds	Detection, purification and analgesics; Encoding combinatorial libraries; High-throughput screening; Virtual screening; Chemical diversity and library design.		

Course evaluation

Distribution is as follows:

30 degrees A quarterly and practical exam and daily exams for the first semester 70 Score of the end of the first semester exam (first semester final).

Learning and teaching resources

Wilson and Gisvold Textbook of Organic Medicinal and Pharmaceutical Chemistry; Delgado JN, Remers WA, (Eds.); 10th ed., 2004.

Electronic references: Internet sites

Second semester courses

Course Name:	Organic Chemistry I
Course Code:	1210
The chapter/the year:	Chapter 2
Date this description was prepared:	18/08/2025
Available attendance forms:	first stage
Number of study hours (total)/number of units (total):	45 hour First semester, 3 An hour a week
Name of the course administrator	Assit.Prof. Dr. Madher Najm Abdullah
	madher.abdulla@uobasrah.edu.iq

Course objectives

Teaching the basics of organic chemistry, which examines the study of chemical compounds and the discovery of compounds with multiple properties and applications that contribute fundamentally to the development of various sciences, industries, and technology. Teaching the student about organic compounds in simplest form, which is that organic compounds contain...

Two atoms and hydrogen, such as alkanes, alkenes, and alkynes, and the difference between them in that they saturated or unsaturated compounds and the difference in their effectiveness.

Their chemical reactions, in addition to the principles of stereochemistry and the properties of aromatic compounds.

Teaching and learning strategies

Course outcomes and teaching, learning and evaluation methods

A- Cognitive objectives

1- Study of other organic compounds that contain an oxygen atom in addition to carbon and hydrogen, such as alcohols, ethers, and ethers.

Cyclones and their various chemical reactions.

2 - Study of the stereochemistry of organic compounds

3 - Study of alkyl halides, their reactions, and the mechanics of their reactions

4- -Introduction to simple cyclic compounds

5- - Studying the types of glassware and some of the devices that will be dealt with throughout the years of study

6 - Study and understand methods of analyzing elements in organic compounds.

7 - Studying various purification methods for organic compounds, such as the process of filtration, extraction, recrystallization.

B- The skills objectives of the course

1- Obtaining knowledge of the basic principles of organic chemistry.

2- Studying the methods of chemical reactions.

3- Understanding the types of reactions that can occur with chemicals when mixed.

4- Acquire the skill of dealing with various chemicals.

5- Acquiring the skill in writing scientific reports.

Teaching and learning methods

1 -Theoretical lectures in the classroom.

2- Educational laboratories.

3- Conduct scientific research.

4- Various office research.

Evaluation methods

1- Oral discussions inside the hall and written exams.

2-Mid-term exams and end-of-semester exams.

3-- Laboratory reports-

4-Weekly or bi-weekly examinations in the laboratory.

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1		Introduction to organic chemistry	Introduction.	1-Use PowerPoint to present the lecture and the blackboard	Exam Oral and written
2-3	6	Alkane and example of methane	Alkanes and methane.		
4-5	5	Alkenes type 1 and type 2	Alkenes I and II		
6-7	5	Alkynes and dienes	Alkynes and dienes.		
8-9	8	Stereochemistry 1 and 2	Stereochemistry I & II		
10-11	8	Alcohols and ethers	Alcohols and ethers.		
12-13	6	Alkyl halide	Alkyl halides.		
14-15	4	Cycloalkanes	Cycloalkanes.		

Course evaluation

Distribution is as follows:

40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

- 1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd.
- 2- Organic Chemistry by McCurry; 5th ed. Thomson learning; CA, USA; 2000.

Course Name:	Organic Chemistry III
Course Code:	226
The chapter/the year:	Chapter 2
Date this description was prepared:	18/08/2025
Available attendance forms:	Second stage
Number of study hours (total)/number of units (total):	30 hour First semester, 2 An hour a week
Name of the course administrator (if more than one name is mentioned)	
Prof. Dr. Hussam Hamza Salman	hussam.salman@uobasrah.edu.iq
Lect. Athraa F. Khudhair	athraa.khudhair@uobasrah.edu.iq

Course objectives					
Teach students the principles of heterocyclic chemistry including basic principles, properties and species and reactions of heterocyclic compounds Which are considered the foundations of the study of pharmacy (such as study of pyrrole compounds; Furan, thiophene, pyridine, quinoline and isoquinoline)It enables students to apply these principles in complex interactions involving heteroatoms					
Teaching and learning strategies					
Course Outcomes and Methods of Teaching, Learning and Assessment					
A- Knowledge Objectives					
1 - Increase knowledge of the basic principles in the chemistry of heterogeneous rings.					
2 -Study the methods of chemical reactions of heterocyclic rings.					
3 -Conducting practical experiments to detect the components of heterogeneous rings.					
4 -Correct handling of chemicals and glassware during diagnosis and identification Heterogeneous rings.					
B- Skill objectives of the course.					
1 -Acquire skill on how to identify heterogeneous episodes.					
2 - Acquire skill on how to detect heterogeneous rings.					
3 - Acquire skill on how to write practical reports.					
Teaching and learning methods					
1 -Theoretical lectures					
2 -Conducting practical experiments					
3 -Scientific Research					
4 -Methodological and supportive books					
5 -Scientific discussions and seminars					
Evaluation methods					
1 .Mid-term exams and final exams					
2 .Daily oral and written exams					
3 .Homework					
4 .Daily Reports					
5 .Practical laboratory exams					
6 .Laboratory Reports					
Course structure					
The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1	5	The heterocyclic system, its types, general structure, properties, abundance in nature, and medicinal compounds.	Heterocyclic system: Classes of heterocyclic systems; general structures; properties; Occurrence in nature and in medical products.	1-Use PowerPoint to present the lecture and the blackboard	Daily tests and Exams Semi-quarterly Written and final exam the chapter.
2	3	Heterocyclic compounds such as pyrrole, thiophene	Five-membered ring heterocyclic compounds: pyrrole; furan and thiophen.		

3	2	Sources of pyrrole, furan, and thiophene	Source of pyrrole, furan and thiophen.		
4	5	Study of the effectiveness and turnover of electrophilic substitutes in pyrrole and furan rings	Electrophilic substitution in pyrrole, furan and thiophen: Reactivity and orientation.		
5	4	Hexagonal heterocyclic ring, including its structure, properties, and interactions, such as pyridine	Six-membered ring heterocyclic compounds: Structure & reactions of pyridine.		
6	6	Compounds of saturated heterocyclic rings	Saturated five-membered heterocyclic compounds.		
7	5	Pentagonal and hexagonal heterocyclic rings containing two and three heteroatoms	Heterocyclic of five & six member rings with two & three heteroatoms.		

Course evaluation

Distribution is as follows:

40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd, latest edition. 2- Organic Chemistry by J. McMurry, latest ed., Thomson learning, CA, USA. 3_ An introduction to the chemistry of heterocyclic compound by Acheson, RM latest ed.

Electronic references, Internet sites

Course Name	Organic Pharmaceutical Chemistry I
Course Code:	326
The chapter/the year:	Second semester
Date this description was prepared:	

18/08/2025

Available attendance forms:

Third stage

Number of study hours (total)/number of units (total):

45 hour First semester, 3 An hour a week

Name of the course administrator (if more than one name is mentioned)

Prof. Dr. Raheem Jameel Mahesein

Raheem.mahesein@uobasrah.edu.iq

Lect. Roaa Salman Pune

Roaa.Salman@uobasrah.edu.iq

Lect. Ali Khamas Muhammad

ali.khamas@uobasrah.edu.iq

Course objectives

-Shedding light and enabling students to understand the journey of medicine inside the body (absorption, distribution, metabolism, and removal of the drug) and the role of medicinal chemistry in the discovery and development of preparatory therapeutic agents.

-Study of the metabolism of chemical compounds and medicines

- Study of factors affecting the metabolism of drugs in the body

- Study the effect of vacuum derivatives on metabolism in the body.

.It also enables students to understand the concept of the relationship between structural structure and bioactive and its application in the design and synthesis of new compounds or derivatives.

Teaching and learning strategies

Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives

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

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

3 - Know the types of metabolism of drugs inside the body

4 - Know the factors that affect metabolism

B – Course Skills Objectives

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 modifications in the chemical composition of the drug in order to develop it and overcome weaknesses in its performance within the body.

3 - Acquire skill on how to write practical reports

Teaching and learning methods

1 -Theoretical lectures

2 -Conducting practical experiments

3 -Scientific Research

4 -Methodological and supportive books

Evaluation Methods

1 .Semi-semester exams and semester exams

2 .Daily oral and written tests

3 .Practical laboratory exams

4 .Laboratory reports

Course structure					
The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1	4	Distribution of medications in the body	Drug distribution.	Lectures and power point	Daily and weekly exams with semi-semester and end-of-semester written exams..
2	3	Acidic qualities–Al-Qaeda Pharmaceuticals	Acid-base properties.		
3	3	Statistical calculations of biological effectiveness	Statistical prediction of pharmacological activity.		
4	2	Quantitative chemistry of the relationship of chemical structure with biological activity	QSAR models.		
5	1	Computational Chemistry	Molecular modeling (Computer aided drug design).		
6	1	Binding forces between the receptor and the structural structure of a drug	Drug receptor interaction: force involved.		
7	2	The relationship of drug stereochemical properties with biological activity	Steric features of drugs.		
8	1	The relationship of optical isomers with biological activity	Optical isomerism and biological activity.		
9	1	Positional formula calculations for compounds	Calculated conformation.		
10	1	The quantitative relationship of three-dimensional structures with their biological effectiveness	Three-dimensional quantitative structure activity relationships and databases.		
11	1	Compounds that are identical to drugs that differ from it by one or more atoms, which are called isosterisms	Isosterism.		
12	1	The physical and chemical connection between drugs and the receptor	Drug-receptor interaction and subsequent events.		
13	22	Drug storage in general: places of biological	General pathways of drug metabolism: Sites of drug		

		transformation of drugs, the role of cytochrome monooxygenase in metabolism, oxidation reactions, reduction reactions, and decomposition reactions. The second phase of metabolism	biotransformation; Role of cytochrome P450 monooxygenases in oxidative biotransformation; Oxidative reactions; Reductive reactions; Hydrolytic reactions; Phase II reactions.		
14	2	Factors that affect drug metabolism	Factors affecting drug metabolism.		

Course evaluation

Distribution is as follows:

40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd, latest edition. 2- Organic Chemistry by J. McMurry, latest ed., Thomson learning, CA, USA. 3_ An introduction to the chemistry of heterocyclic compound by Acheson, RM latest ed.

2-Foye's Principles of Medicinal Chemistry (Thomas L. Lemke and Dav Williams), An Introduction to Medicinal Chemistry (Graham L. Patrick).

Electronic references, Internet sites

Course Name	Organic Pharmaceutical Chemistry III
Course Code:	427
the chapter/the year:	Second semester
Date this description was prepared:	18/08/2025
Available attendance forms:	Fourth stage
Number of study hours (total)/number of units (total):	45 hour First semester, 3 An hour a week
Name of the course administrator (if more than one name is mentioned)	
Pro. Dr. Rita Sabah Elias	Rita.elias@uobasrah.edu.iq
Assis. Prof..Dr. Hiba Najeh Jassim	hiba.jassem@uobasrah.edu.iq

Course objectives

To enable students to understand the mechanisms of action of medicine, including antibacterial, antifungal and antiviral compounds, at the molecular level, and the role of medicinal chemistry in the discovery and development of prepared therapeutic compounds. It also enables students to understand the concept of the relationship between structure and activity and its application in the design and preparation of new chemotherapy drugs and hormone derivatives with potential biological activity.

- Study of the biological work of some neurotransmitters within the human body
- The study of drug kinetics within the organism includes the mechanisms of absorption, metabolism and excretion
- Study the relationship between the chemical composition of compounds and efficacy (e.g. antibiotics, anticancer and sulfonamide)
- Preparing students to know the chemical structures of compounds and their relationship to the biological activities the human body

Teaching and learning strategies

Course Outcomes and Methods of Teaching, Learning and Assessment

A- Knowledge Objectives

- 1 -Knowing the methods of manufacturing some compounds and medicines
- 2 -How to deal with chemical compounds
- 3 -Conducting practical experiments for the manufacture and purification of vehicles

B- Course Skills Objectives

- 1- Acquire skill in the use of different methods in the manufacture and preparation of medicines
- 2 - Acquire skill in how to deal with chemical compounds
- 3 -Acquire skill in writing practical reports

Teaching and learning methods

- 1 -Theoretical lectures
- 2 -Conducting scientific experiments
- 3 -Seminars
- 4 -Daily duties
- 5 -Written exams
- 6 -Methodological and supportive books

Evaluation methods

- 1 -Oral exams
- 2 -Written exams
- 3 -Scientific reports
- 4 -Laboratory practical exams

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
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1-6	18	Beta-lactam antibiotics such as penicillin, beta-lactamase inhibitors such as cephalosporin and monobactam. -Aminoglycoside, chloramphenicol, and tetracycline. Also, macrolides, antivirals, their types and applications	β -Lactam antibiotics (Penicillins); β -Lactamase inhibitors; Cephalosporins and Monobactams. Aminoglycosides and - Chloramphenicol; Tetracyclines; Macrolides; Lincomycins and Polypeptides; Antiviral agents (properties of viruses, viral classification, products).	Lecturers	Daily oral and written exam, mid-term written exam and end-of-semester exam
7-8	4	Sulfonamide compounds, their names, mechanism of action, resistance, toxicity, and side effects. The effect of protein binding on the distribution of drugs in the body	Sulfonamides (chemistry, nomenclature, mechanism of action, resistance, toxicity, side effects, metabolism, protein binding, distribution and SAR); products; Sulfones.		
9-15	23	Anti-cancer drugs: alkylating drugs, anti-biologicals, antimetabolites, plant compounds and other compounds.	Anti-neoplastic agents: Alkylating agents; Antimetabolites; Antibiotics; Plant products; Miscellaneous compounds.		

Course evaluation

Distribution is as follows:

40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

1- Organic Chemistry by Robert T. Morrison and Robert N. Boyd, latest edition. 2- Organic Chemistry by J. McMurry, latest ed., Thomson learning, CA, USA. 3_ An introduction to the chemistry of heterocyclic compound by Acheson, RM latest ed.

Electronic references: Internet sites

Course Name:	Advanced Pharmaceutical Analyses
Course Code:	5210
The chapter/the year:	Second semester
Date this description was prepared:	18/08/2025

Available attendance forms:
Fifth stage
Number of study hours (total)/number of units (total):
45 hour First semester, 3 hour a week
Name of the course administrator (if more than one name is mentioned)
Prof.Dr. Leaqaa Abdulredha Raheem leaqaa.raheem@uobasrah.edu.iq
Assis.Prof Dr. Maan Abdul Razzaq Suwaid maan.suwaid@uobasrah.edu.iq
Assis. Prof, Dr. Madher N. Abdulla madher.abdulla@uobasrah.edu.iq
Course objectives
Study of spectroscopic methods used to identify and characterize organic compounds, including UV, IR, mass and nuclear magnetic resonance spectroscopy; It enables students to understand the applications of these techniques in the qualitative and quantitative analysis of organic compounds.
Teaching and learning strategies
<p>Course Outcomes and Methods of Teaching, Learning and Assessment</p> <p>A- Knowledge Objectives</p> <ol style="list-style-type: none"> 1- The use of ultraviolet spectroscopy in the diagnosis of organic and pharmaceutical compounds: This technique is used to identify the presence of double bonds in Organic compound, and knowledge of the existence of succession, as well as identification of the type of bonds, and the presence of active groups, as this technique is useful in identifying the presence of chromophore groups such as (N = N, O=C, C = C and oxchrome such as (X, NH, OH and their locations in molecule of the organic compound 2- The use of infrared spectrum in the diagnosis of organic and pharmaceutical compounds: in a way that 3- determines the type of active aggregates and the type of compensated aggregates, and if there is any 4- factor that reduces Stability and other influencing factors. Know the areas of absorption of common active groups and its applications in organic chemistry. This technique is useful in identifying the existence of effective aggregates as groups [C-O-C EXT.... OH, NH₂, O=C, NO.] It is also useful to identify the type of organic compound Aliphatic or aromatic, and also It is useful in identifying the type of C-C mono, bilateral, triple . . 3 -The use of nuclear magnetic resonance spectroscopy in the diagnosis of organic and pharmaceutical compounds: It is considered a precise and highly specific technique for chemical composition through Study of the proton H₁ as well as . C¹³ 5- The use of mass spectroscopy in the diagnosis of organic and pharmaceutical compounds: 6- The main purpose of this technique is to determine the molecular weight of the organic compound, <p>It is also useful in identifying the presence of some isotopes, as well as identifying the presence of active groups in the organic compound. It is one of the important techniques that help by knowing the preferred location of breakdown by knowing the chemical composition of the compound, whether it is a prepared compound or extracted from plants such as: hydrocarbon compounds, aldehydes and ketones, carboxylic acids and their derivatives, amines, alcohols and phenols.</p> <p>-5 The use of all these spectra in the identification of an unknown organic compound, where the procedure</p>

of the above four techniques helps in reaching the exact composition of between Probability set.

B – Skills objectives of the course:

- 1 -Knowing the formulation of some unknown organic compounds from the reality of their spectra.
- 2 -Acquiring skill on how to identify effective groups in chemical and pharmaceutical compounds.
- 3 -Acquiring skill on how to infer the conditions affecting the type of compensated groups, whether they are pull or pushing electrons and others
- 4 -Acquire the skill on how to link the results obtained from the application of various spectral methods and how write practical reports.

Teaching and learning methods

- 1 Theoretical lectures covering all aspects of each method
- 2 Conducting reports and research on the applications of the mentioned methods on chemical compounds and pharmaceutical preparations
- 3 Presentation of application videos to help understand the material and gain skill
- 4 -Use of methodological and supporting books
- 5 Holding scientific sessions in the form of discussions or seminars

Evaluation Methods

- 1 Semi-semester exams and final exams
- 2 -Daily oral and written exams
- 3 Seminars
- 4 -Practical laboratory exams
- 5 -Laboratory reports

Course structure

The week	hours	Required learning outcomes	Name of the unit or topic	Learning method	Evaluation method
1	6	Study of visible and ultraviolet spectroscopy of compounds and interpretation of absorption within those regions. Rules for calculating the highest or optimal absorption values for the ultraviolet region for different systems. Taking examples, problems and solutions.	UV/visible spectroscopy; Sample handling and instrumentation; Characteristic absorption of organic compounds; Rules for calculation of lambda max and application; Application of UV/visible; spectroscopy; Problems and solutions.	Lectures	Daily oral and written exam, mid-term written exam and end-of-semester exam
2	14	Infrared spectroscopy, the boundaries of absorption regions, and the factors that	Infra-Red spectroscopy (theory and H-bonding effect; Sampling techniques and interpretation		

		affect absorption, with models mentioned	of spectra; Characteristic group frequencies of organic compounds; Application of IR spectroscopy; Problems and solutions.		
3	12	proton magnetic resonance spectroscopy plus carbon 13	H1-Nucleomagnetic Resonance (NMR) and C13-NMR spectroscopy; Introduction, the nature of NMR absorption, chemical shifts and factors affecting them, information obtained from NMR spectra, more complex spin-spin splitting patterns, application of H1-NMR spectroscopy; C13-NMR spectroscopy: introduction and characteristics, DEPT C13-NMR spectroscopy.		
4	11	Mass spectrometry represents weight spectroscopy and the rules it relies on to break down the parent compound into small compounds or fragments	Mass spectroscopy: Introduction and interpreting Mass spectra; interpreting Mass spectra fragmentation patterns, Mass behavior of some common functional groups.		
5	2	Elemental analysis includes the proportion of the element in the molecule	elemental microanalysis CHNSO		

Course evaluation

Distribution is as follows:

40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

1. Spectrometric Identification of Organic Compounds by Silverstein, Bassler and Morrill;
2. Applications of absorption spectroscopy of organic compounds by Dyer JR.
3. Organic Chemistry by McMurry; 5th; Thomason learning CA, USA 2000.

Electronic references: Internet sites

Academic Program Description Form

University Name: Basrah

Faculty/Institute: Pharmacy collage

Scientific Branch: Clinical Laboratory Sciences

Name of the academic or professional program: Pharmaceutical Sciences

Name of final degree: Bachelor of Science in Pharmacy

Academic system: semester

File Completion Date: 18/ 8/ 2025

Signature:

Head of Department: Dr. Eiman Ali Saeed

Date: 20\8\2025

Signature:

Scientific Associate: Dr. Karamallah Shakir

Date: 20\8\2025



The file is checked by: Dr. Rana Hassan Shamkhi

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

Program vision

The Clinical Laboratory Sciences Branch aims to: Preparing specialized graduates with scientific competence and practical experience, who have the ability to absorb and apply all modern technologies in the field of laboratory medical diagnosis. The branch also seeks to distinguish itself scientifically as an institution with a high academic level by providing a high-quality educational level that produces qualified pharmaceutical competencies, which pushes the branch and then the College of Pharmacy to reach a leadership position in the field of academic scientific research.

Program mission

The clinical laboratory sciences branch's teaching staff has undertaken the task of teaching in the clinical laboratory sciences specializations for primary and postgraduate studies to provide health and academic institutions with pharmaceutical expertise and competencies, in addition to providing scientific consultations and laboratory evaluation in all branches of clinical laboratory sciences, such as histology, anatomy, human cell biology, pathology, Clinical biochemistry, immunology, pathogenic bacteria, parasites, and viruses to help doctors diagnose and make accurate treatment decisions.

Program objectives

Clinical laboratory sciences include a number of scientific specializations that support and support the pharmaceutical specializations, as follows:

The first stage :

**First semester **

Human biology: Studies of the functional systems of the human body (eg nervous system,digestive, respiratory system, muscular system, reproductive system...) and the nuclei of cell structures. This science is closely related to other sciences such as cell biology,Immunity,Hematology and microbiology.

**Second Semester **

Histology: interested in studying the histological structure of the human body and the microscopic

anatomy of cells and tissues. It is based on examining a thin slice (section) of tissue under a light microscope or an electron microscope. Histology is an essential tool of biology and medicine.

Anatomy: Human anatomy is one of the basic medical sciences, concerned with studying the shape and structure of living organisms as well as their parts. Whether they are members or tissues. Anatomy is related to nature. With embryology, And comparative anatomy, and evolutionary biology.

The second stage:

**First semester **

Medical microbiology 1: This lesson is concerned with pathogenic bacteria by identifying pathogenic bacterial species and studying them from a morphological standpoint, their most important diagnostic characteristics, their pathogenicity, the techniques used in laboratory cultivation, methods of diagnosing them and studying their drug sensitivity, in addition to methods of prevention and treatment.

**Second Semester **

Medical Microbiology2: This lesson includes three important specializations in medical microbiology: virology, parasitology, and immunology. The study of viruses and parasites means the types of pathogenic ones and the study of their characteristics and diagnostic characteristics, their life cycles, pathogenesis, methods of infection, stages of infection and methods of laboratory diagnosis, then prevention and treatment. While immunology is concerned with studying the components of the immune system, the types of immune response, their mechanisms of action, and their role in confronting various pathogens.

The third stage

**First semester **

Pathology: A microscopic study of diseased tissues and an important tool in anatomical pathology, or what is known as pathological anatomy of tissues, and a description of the basic concepts of diseases at the cellular level.

Biochemistry 1: This lesson is concerned with explaining the mechanism of action of enzymes, or what are known as biochemical catalysts, the metabolism of glucose, fats, amino acids, and energy

generation. It also includes a description of the structure of DNA and what it smells like.toFrom genetic information.

**Second Semester **

Biochemistry2: Interested in studying bioenergy and its roleATP and metabolic processes of different food sources. The work of the endocrine system, hormones, nucleotide metabolism, DNA structure, and transcription and translation processes also diversified.

The fifth stage

First semester

Clinical chemistry: This lesson is concerned with liver function, kidney function disorders, cellular metabolism of carbohydrates, plasma lipids and lipoprotein. The lesson includes everything relatedQHypothalamic glands, adrenal glands, pituitary glands, and thyroid function tests.

Laboratory training: This lesson is intended to teach students how to acquire practical skills in the field of hematology, biochemistry, medical microbiology, serology, and how to conduct analyzes for each disease case, including drawing blood samples, examining urine samples, bacterial culture, and writing clinical reports according to the results obtained from these tests. Condition.

Program accreditation

nothing

Other external influences

The practical aspect of academic subjects, seminars with a variety of content, and graduation projects.

Program structure				
comments *	percentage	Study unit	Number of courses	Program structure
				Enterprise requirements
				College requirements
		32	10	The requirementsbranch
				summer training
				Other

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

Program description					
Credit hours		Name of the course or course	Course or course code	Seme ster	Year/level
practical	theor etical				
2	3	Human Biology	111	F1	First stage
2	2	Histology	127	F2	
2	1	Human Anatomy	127		
2	3	Microbiology I	212	F1	Second stage
2	3	Microbiology II	227	F2	
2	3	Pathology	315	F1	Third stage
2	3	Biochemistry I	314		
2	3	Biochemistry II	329	F2	
2	3	Clinical Chemistry	514	F1	Fifth stage
2	0	Laboratory Training	515		
2	0	Laboratory Training		F2	

Expected learning outcomes of the programme
<p>Knowledge</p> <p>1- The student gain the ability to understand modern and advanced scientific knowledge in clinical laboratory sciences. In addition to their understanding of the various principles and basics of these sciences.</p> <p>2- That students have the ability to understand the sciences related to pharmacy, including medical, biological and chemical sciences.</p> <p>3- Students gain experience in diagnosing diseases through laboratory tests and pathological analyses.</p>
<p>Skills</p> <p>1- Acquiring the skill of appropriate medical diagnosis for minor medical conditions and linking it scientifically to their pharmaceutical, life and chemical expertise.</p> <p>2- Training students to conduct medical laboratory analyses and writing medical reports that contribute to diagnosis.</p> <p>3- Training and qualifying students to work with the necessary skills on advanced diagnostic devices and to be influential and effective in health institutions..</p>
<p>Values</p> <p>1- Theory Lectures: It uses illustrations, scientific diagrams, and presentation techniques, such as using PowerPoint or smart screens.</p> <p>2- Practical Laboratories: It focuses on conveying the practical aspect of academic subjects through practical experiments, models, and scientific atlases.</p> <p>3- Seminars, written and oral examinations, writing scientific reports and homework.</p>

Teaching and learning strategies
<p>1- Clarification and scientific explanation material through presentation and recitation theoretical and practical lectures.</p> <p>2- Interactive discussions with students during the presentation of the scientific material.</p> <p>3- Graduation projects for the completed stages and their discussion.</p>

Evaluation methods

- 1- Monthly and quarterly written exams.
- 2- Surprise quizzes, in addition to homework.
- 3- Writing scientific reports and providing seminars.
- 4- Scientific discussion during the lesson and evaluating the individual practical skills of the students inside the laboratory.

1. Faculty						
Faculty Members						
Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Biology	Medical mycology			⊗	
Professor	Biology	Immunity			⊗	
Professor	Chemistry	Pharmaceutical chemistry			⊗	
Professor	Pharmacy	Clin. Lab. Sciences			⊗	
Professor	Biology	Bacteriology			⊗	
Professor	Biology	Immunity			⊗	
Assist. prof.	Biology	Immunity			⊗	
Assist. prof.	Biology	Microbiology			⊗	
Assist. prof.	Biology	Medical microbiology			⊗	
Assist. prof.	Biology	Biotechnology			⊗	
Assist. prof.	Biology	Biotechnology			⊗	
Assist. prof.	Biology	Biology			⊗	

Assist. prof.	Food sciences	Human nutrition			⊗	
Assist. prof.	Biology	Tissue culture			⊗	
Assist. prof.	Biology	Human Genetics			⊗	
Lecturer	Biology	Parasitology			⊗	
Lecturer	Chemistry	Clinical chemistry			⊗	
Lecturer	Biology	Medical microbiology			⊗	
Lecturer	Biology	Microbiology			⊗	
Lecturer	Biology	Microbiology			⊗	
Lecturer	Biology	Microbiology			⊗	
Lecturer	Chemistry	Biochemistry			⊗	
Lecturer	Biology	Histology			⊗	
Lecturer	Pharmacy	Pathology			⊗	
Lecturer	Chemistry	Biochemistry			⊗	
Lecturer	Pharmacy	Clinical chemistry			⊗	
Lecturer	Pharmacy	Clinical chemistry			⊗	
Assist. lecturer	Biology	Histology			⊗	
Assist. lecturer	Biology	Mycology			⊗	
Assist. lecturer	Pharmacy	Clinical chemistry			⊗	
Assist. lecturer	Pharmacy	Clinical chemistry			⊗	
Assist. lecturer	Chemistry	Biochemistry			⊗	
Assist. lecturer	Veterinarian	Pathology			⊗	

Professional development

Participation in workshops, scientific seminars and conferences.

Professional development for faculty members

- 1-Participation in the workshops and the seminars scientific and the discussion inside and outside the college.
- 2-Participation in postgraduate/MA and PhD discussions.
- 3-Participation in in-person and online scientific conferences.
- 4-Publishing scientific research.

Acceptance standard

Central Admission / Ministry of Higher Education and Scientific Research.

The most important sources of information about the program

- Scientific books approved by the Ministry of Higher Education and Scientific Research.
- Scientific research available in libraries or the Internet.

Program development plan

Program skills chart

Learning outcomes required from the programme													Essential or optional ?	Course Name	Course Code	Year/level
Value				Skills				Knowledge								
C4	C3	C 2	C1	B4	B3	B2	B 1	A4	A3	A2	A1					
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Human Biology		The first stage /
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Histology		
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Human Anatomy		
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Microbiology 1		The second stage /
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Microbiology 2		
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Pathology		The third stage /
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Biochemistry I		
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Biochemistry II		
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Clinical Chemistry		The fifth stage /
/	/	/	/	/	/	/	/	/	/	/	/	/	Basic	Lab. Training		

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
1- Oral discussions in the hall and written tests. 2-Mid-semester and end-of-semester exams. 3-Laboratory reports	Educational lectures Theory and practical	Reviving a human being	A study in the science of human life Study of cell structure Study of the nature and structure of tissues, bones and cartilage Nervous system (central and peripheral). nutrition Digestive system (mouth, esophagus, stomach) Digestive system (intestines) Excretory and respiratory system Human genetics (chromosomes and semi-lethal genes) Skin Blood circulation Immunity (inflammation, immunity, blood, immunity to disease)	3 theory 2 practical	15

Course evaluation

Theoretical and practical subjects are worth 50 marks, while only the theoretical courses are worth 30 marks and include written exams during lectures and attendance, in addition to semester and end-of-semester exams.

Learning and teaching resources

1- A text book of Human biology by j.k. INGLIS. 2- Human Biology by Sylvia & Windelspecht-

There are many sources that can be relied upon on the Internet

Electronic references, Internet sites

Course description form

Course name:
Human Biology
Course Code:
111
Semester/year :quarterly
First semester
Date this description was prepared:
‡ 2025-818
Available attendance forms:
First stage
Number of study hours (total)/number of units (total):

45 hours first semester, 3 hours per week
Name of the course administrator (if more than one name is mentioned)
Dr. Dawod Chalob Hillail Email:
Dr. Kawthar Touma Khalaf
Course objectives
<ol style="list-style-type: none"> 1. Understanding and studying biological science of a human body. 2. Definition of student and give it all scientific information regarding species, cells and tissues found in the human body.
Teaching and learning strategies
<p>Course outcomes, teaching, learning and evaluation methods</p> <p>A- Cognitive objectives Theoretical application to practical laboratory material. Statement of knowledge.</p> <p>B- The skills objectives of the course Conducting oral and written evaluation. Operational reports.</p> <p>Teaching and learning methods</p> <ol style="list-style-type: none"> 1- Theoretical lectures in the classroom. 2- Educational laboratories. 3- Conduct scientific research. <p>Evaluation methods</p> <ol style="list-style-type: none"> 1- Oral discussions in the hall and written tests 2-Mid-semester and end-of-semester exams. 3- Laboratory reports. 5- Weekly or bi-weekly examinations in the laboratory. <p>Learning methods and learning</p> <ol style="list-style-type: none"> 1- Training and attending lectures. 2- Seminars and meetings every week. 3- Scientific research. 4- Work experiences. <p>Methods</p> <ol style="list-style-type: none"> 1- Final exams -2 mid-term exams -3 laboratory exams and reports

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
1- Oral discussions in the hall and written tests. 2-Mid-semester and end-of-semester exams. 3-Laboratory reports	Educational lectures using scientific references	Biology	biology	2	1
		Cell	cell	2	2
		Tissues, bone and cartilages	Tissues, bones and cartilage	3	3
		Nervous system (central & peripheral)	Central and peripheral nervous system	4	4-5
		Nutrition	nutrition	2	6
		Digestive system (Mouth, Esophagus, Stomach)	Digestive system (mouth, esophagus and stomach)	2	7
		Digestive system (intestine)	Digestive system (intestines)	1	8
		Excretory system & respiration	The excretory system and the respiratory system	3	9
		Human genetics (chromosomes & semi-lethal genes)	Human genetics	3	10
		Skin Circulatory system	Skin Circulatory device	2 3	12-11
		Immunity (Inflammation, immunity & the blood), immunity to disease)	Immunology	3	15-13
Course evaluation					

Distribution is as follows:

40 degrees A quarterly and practical exam and daily exams for the first semester 60 Score of the end of the first semester exam (first semester final).

Learning and teaching resources

1- A text book of Human biology by j.k. INGLIS. 2- Human Biology by Sylvia & Windelspecht

There are many sources that can be relied upon on the Internet

Electronic references, Internet sites

Course description form

Course Name:
Human anatomy
Course Code:
127
Semester/the year:
Second semester
Date this description was prepared:
2025-8-18
Available attendance forms:
The first stage
Number of study hours (total)/number of units (total):
30 hour \ First semester, 2 an hour a week
Name of the course administrator (if more than one name is mentioned)
Dr. Rawa Salem Hamid
Dr. Tamadur Hamed Wadi
Course objectives
<ul style="list-style-type: none">- Study of the general structure of the human body.- Study the anatomy of different body systems And knowledge of its functional and histological composition.
Teaching and learning strategies

Cognitive objectives-

- 1- Knowledge of anatomical structure for body organs.
- 2- Knowledge of anatomical sites and tissues in the body.
- 3- Structure of organs and their anatomical location within each part of the body.
- 4- Identify the relationship of members to each other.

Headquarters' skills objectives.

- 1- Give a comprehensive idea of the anatomical sites in the body.
- 2- Explaining the anatomical structure of all body systems.
- 3- Give an anatomical description of all the internal and external organs of the human body and their relationship each other.

Teaching and learning methods

- Discussing group work in the laboratory
- Using scientific references

Evaluation methods

- Surprising, inferential questions during the discussion between the two sides
- Written exams.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
-Daily oral tests and exams. Weekly and monthly editorial	Educational lectures / theoretical and practical	Circulatory system: Location of vascular system (heart, arteries, veins)	Circulatory device	1	1
		Circulatory system; Location of lymphatic system (Lymphatic capillary)	Circulatory device		
		Lymphoid tissue: location of the (Thymus gland, Spleen & Lymph nodes))	Lymphatic system	1	2
		Lymphoid nodule (MALT) & tonsils	Lymph nodes	1	3
		Nervous system: Central & Peripheral nervous system by locati	Nervous system	1	4
		Nervous system: Central & Peripheral	Nervous system	1	5
		Respiratory system: Conducting portion (Nose, Nasopharynx, nerv system by location	Respiratory system	1	6
		Digestive system:Location of different parts of digestive tract(GIT) (Oral cavity, Mouth, Esophagus and Stomach)Small intestine, Larg	Digestive	1	7

		intestine, Rectum and Anus.			
		Digestive system:Glands associated with the digestive tract by location (Salivary glands, Pancreas, Liverand Gall bladder)	Glands accessory to the digestive system	2	8
		Endocrine system:Location of the pituitary glandLocation of the Adrenal, Thyroid.	Endocrine glands	1	9
		Male reproductive system:Location of the testisExcretory genital ductsExcretory genital gland (Seminal vesicles,Prostate and Cowpers gland)	Male reproductive system	2	10
		Female reproductive system: Location of ovariesOviduct, Uterus and Vagina	Female reproductive system	2	11
		Urinary system Location of Kidney & nephrone	Urinary tract	1	12

Course evaluation

Distribution is as follows:

50 degreesA quarterly and practical exam and daily exams for the first semester50Score of the end of the first semester exam ultimate.

Learning and teaching resources

1- Seely's Anatomy and Physiology2 2- Atlas of human anatomy

3- Principles of Human Anatomy

Electronic references, Internet sites

Course Name:
Histology
Course Code:
127
The semester/The year:
Second Semester
Date this description was prepared:
2025-8-18
Available attendance forms:

The first stage
Number of study hours (total)/number of units (total):
45 hour\second semester, 4 an hour at week
Name of the course administrator (if more than one name is mentioned)
Dr. Dawod Chlob Hillail
Dr. Kawthar Touma Khalaf
Dr. Rana Dawod Salman
Course objectives
Help students to understand the principles of histology and give them all scientific information related the types of cells and tissues found in the human body.
Teaching and learning strategies
Course outcomes and teaching, learning and evaluation methods
<p>A- Defined objectives</p> <ul style="list-style-type: none"> - Statement of basic knowledge and principles in histology. - Presentation of various topics in histology. - Conduct theoretical applications, practical experiments, and rules of measurements in tissues. <p>B-Objectives Skills For the course.</p> <ul style="list-style-type: none"> - Preparing research projects by students. - Practical reports and scientific discussions. - Holding conferences and workshops. <p>C- Teaching and learning methods</p> <ol style="list-style-type: none"> 1. Theory lectures. 2- Conduct work experiments. 3- Scientific research. 4- Writting a curriculum and supportive clinical reports. 5- Science discussions and study sessions. 6- Home duties <p>Evaluation methods</p> <ol style="list-style-type: none"> 1. Mid-term exams and exams quarterly & final. 2. Exams and investigate. 3. Laboratory exams. 4. Lab. reports.

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
Written and oral exams	Theory and practical lectures	Epithelial tissues	Epithelial tissue		
		Connective Tissues	Connective tissue		
					3
		Muscular Tissues	Muscle tissue		4
		Nervous Tissues	Nervous tissue		
		Circulatory System	Circulatory device		
		Lymphatic System	Lymphatic system		
		Digestive System (Oral cavity)	Digestive system (oral cavity)		
		Digestive System (digestive tract)	Digestive system (gut)		
		Digestive System (digestive glands, liver, pancreas (Gall bladder	Digestive glands, pancreas, liver, bile		
		Urinary System	Urinary tract		
		Reproductive System (female & male)	Male and female reproductive system		
		Accessory glands	Accessory glands		
Course evaluation					
<p>Distribution is as follows 40 degrees , a quarterly and practical exam and daily exams for the first semester60Score of the end of the second semester exam.</p>					
Learning and teaching resources					

Atlas of-Histology with function and clinical correlations (Dongmei Cui), 2011	
	Electronic references, Internet sites
Course Name:	
Microbiology 1	
Course Code:	
212	
The semester/The year:	
First semester	
Date this description was prepared:	
2025-8-18	
Available attendance forms:	
The second stage	
Number of study hours (total)/number of units (total):	
45hour\First semester\ 3 an hour a week	
Name of the course administrator (if more than one name is mentioned)	
Dr. Enas Abdel-Saheb Badi	
Dr. Abdule Ilah Abdul Hussein Sahin	
Course objectives	
Introduction to the sterilization methods used and chemical sterilizers and their effect on bacterial growth, addition to the use of antibiotics. Control diseases and prevent its spread and follow the best methods to control sources of pollution resulting from the presence of these pathogenic bacteria in those areas. Also study pathoge germs in all aspects, phenotype and pathogenicity, its recipes and various components. They are considered contributing factors or being among the causes of disease severity germs.	

Teaching and learning strategies

Course outcomes and learning methods

- **Defined objectives**

--Teaching students how bacterial diagnosis in educational and diagnostic laboratories in the Ministry of Health and in laboratories and also in Quality control laboratories for laboratories pharmaceutical.

- The student must be on familiarity complete information about how to measure drug doses for patients with chronic infections and who are exposed to injury the bacterial and determine property type especially in cases which requires the use of a drug with effects high sideways.

-Use awareness and guidance Health care about how to use sterilizers and disinfectants and warning about the method Incorrect use and the side effects it causes may lead to cases satisfying.

B- The skills objectives of the course

-For complete knowledge about the rules Injuries the germ.

-Know the types and breeds germs and how to diagnose them.

- Use of the drug effective against pathogenic bacteria according to a test allergies pharmacokinetics.

-Recognition every pathogenic bacterium is examined from the morphological and anatomical aspects and using the best established diagnostic methods.

-Familiarity complete information on how to control and prevent it from occurring injury epidemiological result of bacterial infection.

- Continuous follow-up of health recommendations and instructions issued by senior medical authorities and following up on the latest developments For Control and complete elimination dangerous infectious germs and prevent its spread.

The learning methods

1- Lectures review.

2- Conduct science experiments.

3- Home duties.

4- Investigation exams.

5- Methodical and supporting books.

Evaluation methods

1- Oral exams.

2- Investigation exams.

3- Scientific reports.

4- Work exams laboratory.

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Daily oral and written tests. Written mid-term and final exams.	Theory and practical lectures	Introduction: Importance of microbiology, History of microbiology	Introduction to microbiology		
		understanding of the morphology, anatomy, physiology and genetics of bacteria in addition, the methods of handling, visualizing, character	Appearance, anatomy, and physiology of microorganisms and methods of their diagnosis		
		Bacterial physiology: physical and chemical growth determinates, growth and growth curves, bacterial reproduction.	Bacterial growth curve		
		Genetics: Definition, genetic, element, mutation (spontaneous, Gene transfer, transformation, conjugation, and gene transduction).	Microbial genetics		
		Sterilization (chemical + physical methods).	Physical and chemical sterilization methods		
		Chemotherapy and sensitivity test	Drug allergy testing and chemotherapy		
		Staphylococci species	Staphylococcus aureus		
		Streptococcus species	Streptococci		
		Aerobic Spore-forming bacteria Bacillus species (B. anthracis, B subtilis, B. cereus).	Aerobic bacilli that form spores		
		Stridium perfringens; Clostridium ni; Clostridium botulinum	Anaerobic spore-forming bacilli		
		Corynebacterium diphtheria	Diphtheria spores		
		Propionibacterium acnes, Listeria	Listeria and Propionibacterium		

		obacterium tuberculosis; M. leprae	Tuberculosis and leprosy bacilli		
		erobacteriaceae: (E. coli; Klebsiella spp.; obacter, Serratia), nonella, Shigella)	Family Enterobacteriaceae		
		rio, Pseudomonas, Helicobacter pylori, sseriesia spp., Brucella, eus,	Pseudomonas, B. pylori, Neisseria, Brucella, and Proteus		

Course evaluation

Distribution is as follows:
40 degrees A quarterly and practical exam and daily exams for the first semester 60Score of the end of the first semester exam.

Learning and teaching resources

Medical Microbiology, Jawetz, 2016

Electronic references, Internet sites

Course Name:

Microbiology 2

Course Code:

227

The semester/The year:

Second Semester

Date this description was prepared:

2025-8-18

Available attendance forms:

The second stage

Number of study hours (total)/number of units (total):

60 hour \First semester, 2 an hour a week.

Name of the course administrator (if more than one name is mentioned)

Dr. Enas Abdel-Saheb Badi

Dr. Abdule Ilah Abdul Hussein Sahin

Dr. Suha Haitham Mohammed

Course objectives

Preparing students to become familiar with the branches of medical microbiology by studying three important branches of it, which are parasitology, immunology, and virology, and studying the pathological and diagnostic aspects of each of these sciences and their relationship to human health and society.

Teaching and learning strategies

- Course outcomes, teaching, learning and evaluation methods:

a. Cognitive objectives:

1. Full knowledge of aspects of laboratory diagnosis, evaluating the results of diagnostic tests, and writing medical reports.

B- The skills objectives of the course:

1. Teaching students how to diagnose microscopic organisms in the laboratory by identifying their shapes and phenotypic characteristics.

2. Learn to perform diagnostic tests related to diseases resulting from infection with medical microorganisms.

Methods and learning

1- Lectures review.

2- Conduct science experiments.

3- Home duties.

4- Investigation exams.

5- Methodical and supporting books.

Evaluation methods

1- Oral exams.

2- Investigation exams.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
Daily oral and written tests and written mid-term and final exams.	Theoretical and practical lectures	Introduction	The student acquires information about parasitology		
		Intestinal and tissue protozoa (Amoeba (pathogenic and non-pathogenic), Balantidium, Giardia, Trichomonas	The student acquires information about parasitology		
		Haemoflagellates: Leishmania spp.; Trypanosome spp.	The student acquires information about parasitology		

		Sporozoa: Malarial parasites of human; Toxoplasma.	The student acquires information about parasitology		
		Helminthes: Classification, Cestodes (Hymenolepis nana, Taenia spp.), Echinococcus (Hydatid cyst). Hepatic flukes, Trematodes (Blood Flukes: Schistosoma spp). Nematods: Ascaris, Entrobilus. Trichuris, Ancylostoma, Necator americans	The student acquires information about parasitology		
		Virology: Introduction, comparison between viruses and bacteria and other microbes; origin of viruses, reproduction, one step growth curve, type of mutations and classification of viruses; RNA viruses: Orthomyxo viruses; Paramyxo viruses; Retro viruses; Hepato viruses; Oncogenic viruses. DNA viruses: Herpes viridae; poxviradeae, adenoviredeae, parvoviruses	The student acquires information in aViruses		
		Immunology: introduction, innate and adaptive immunity, complement, MHC molecule and autoimmune diseases, hypersensitivity, tumor immunity, immunodeficiency, immunological methods.	The student acquires information inImmunology		

Course evaluation

Distribution is as follows:

30 degreesA quarterly and practical exam and daily exams for the first semester70Score of the end of the second semester exam.

Learning and teaching resources

Medical Microbiology, Jawetz, 2016

Electronic references, Internet sites

Course Name:
Pathophysiology
Course Code:
315
The semester/The year:
3rd Class, 1st Semester
Date this description was prepared:
2025-8-18
Available attendance forms:
The third stage
Number of study hours (total)/number of units (total):
60 hour\ the number of course units is 4 units
Name of the course administrator
Dr. Rawa Salem Hamid
Dr. Tamadur Hamed Wadi
Course objectives
<ul style="list-style-type: none"> - Study of the physiology and pathogenesis of diseases occurring within the body. - Identify the most prominent clinical signs accompanying the occurrence of diseases. - To learn about diseases that affect organs in all body systems.
Teaching and learning strategies
<p>A- Course outcomes and teaching, learning and evaluation methods</p> <p>Cognitive objectives</p> <ul style="list-style-type: none"> - Identify the mechanism of disease occurrence from the physiological perspective of the human body. - Identify the pathological effects during the occurrence of the disease and after recovery from it. - Identify the clinical symptoms of the disease. <p>B- The skills objectives of the course</p> <ul style="list-style-type: none"> - Giving a comprehensive idea about the pathology of diseases that affect various body systems. - Clarifying the pathology of the disease and the pathological changes accompanying the disease. - Giving an anatomical description of all the internal and external organs of the human body and their relations to each other.

Teaching and learning methods

- Theoretical lectures in the classroom.
- Educational laboratories.
- Conducting scientific research.
- Various office research.

Evaluation methods

- Oral discussions in the hall and written exams.
- Mid-term exams and end-of-semester exams.
- Laboratory reports.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
Oral and written exams.	1-Use PowerPoint to present the lecture And the blackboard	Introduction	Introduction to pathophysiology		
		Cell injury and tissue response; Degeneration; Necrosis; Atrophy; Hypertrophy; Metaplasia and Calcification; Inflammation and Repair	aCell injury, tissue response, and necrosis		
		Disorders of electrolytes, water and acid–base balances: Hyper and Hyponatremia; Hyper and Hypokalemia; Syndrome of inappropriate secretion of ADH; Diabetes insipidus; Metabolic acidosis and alkalosis; Respiratory acidosis and alkalosis.	Disturbances of electrolytes, water and acid-base balance: hypernatremia and hyponatremia. Hyper and hypokalemia. Excretion syndromeADH inappropriately. Diabetes insipidus; Metabolic acidosis and alkalosis. Respiratory acidosis and alkalosis		
		Disorders of cardiovascular system: hyperemia; Congestion and edema; Thrombosis; embolism and infarction; Shock; Coronary heart disease and MI; Rheumatic heart disease; Heart failure; Acute pulmonary edema; Essential hypertension; Secondary hypertension; Malignant hypertension; Hypotension; Aneurysm versus varicose veins;	Cardiovascular system disorders: hyperemia. Congestion and edema. Coagulation. Embolism and infarction. shock; Coronary heart disease andMI. Rheumatic heart disease; Heart failure; Acute pulmonary edema. Essential hypertension. Secondary hypertension. Malignant hypertension.		

			Reduction of Blood pressure. Aneurysms versus varicose veins.		
		Disorders of respiratory system: pneumonias; Tuberculosis; Respiratory distress syndrome; Bronchial asthma; Emphysema and bronchiectasis; Cystic fibrosis; Pulmonary embolism; Pulmonary hypertension.	Respiratory disorders: pneumonia. Tuberculosis; Respiratory distress syndrome; Bronchial asthma. Emphysema and bronchiectasis. cystic fibrosis; Pulmonary embolism; Pulmonary artery hypertension.		
		Disorders of the renal system: Nephrotic syndrome; Glomerulonephritis; Diabetic glomerulosclerosis; Hypertensive glomerular disease; Pyelonephritis; Drug related nephropathies; Acute renal failure; Chronic renal failure	Renal system disorders: nephrotic syndrome. Glomerulonephritis. Diabetic glomerulosclerosis. Glomerular disease, high blood pressure. Pyelonephritis. Drug-associated nephropathy. Acute kidney failure; chronic		
		Disorders of GI and hepatobiliary systems: Peptic ulcer and Zollinger –Ellison syndrome; Irritable bowel syndrome; Crohn's disease; Diarrhea; Celiac disease; Viral hepatitis; Primary biliary cirrhosis; Liver failure; Cholelithiasis.	Gastrointestinal and hepatobiliary disorders: peptic ulcer and Zollinger-Ellison syndrome. Irritable bowel syndrome; Crohn's disease; Diarrhea; celiac disease; Hepatitis; Primary biliary cirrhosis; Cirrhosis; Cholelithiasis.		
		Disorders of thyroid function: Hypothyroidism. Hyperthyroidism. Graves' disease. Thyrotoxicosis	Thyroid function disorders: hypothyroidism. Hyperthyroidism. Graves' disease. Thyrotoxicosis		
		Disorders of adrenal function: Cushing syndrome. Adrenal cortical insufficiency (primary and secondary). Congenital adrenal hyperplasia. Pheochromocytoma.	Disorders of adrenal function: Cushing's syndrome. Adrenal cortex insufficiency (primary and secondary). Congenital adrenal hyperplasia.		

			Pheochromocytoma		
		Diabetes mellitus and metabolic syndrome;	Diabetes and metabolic syndrome.		
		Dyslipoproteinemia	Dyslipoproteinemia		
		Neoplasia	Tumors		
		Metabolic & rheumatic disorders of skeletal system: - Osteoporosis, osteomalacia & rickets, rheumatoid arthritis, systemic lupus erythematosis, ankylosing spondylitis, gout, osteoarthritis syndrome	Metabolic and rheumatic disorders of the skeletal system: -osteoporosis, osteomalacia and rickets, rheumatoid arthritis, systemic lupus erythematosis, ankylosing spondylitis, gout, osteoarthritis syndrome.		
		Alterations in the immune response (pathophysiology of immunopathology): - Hypersensitivity disorders. - Transplantation immunopathology. - Immunodeficiency disorders.	Changes in the immune response (pathophysiology of immune diseases): - Hypersensitivity disorders. - Immune diseases through laryngeal transplantation. - Immunodeficiency disorders.		

Course evaluation

Distribution is as follows:

40 degrees A quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).

Learning and teaching resources

Essentials in Pathophysiology by: Carol Mattson Porth 2nd Ed.-
 pathophysiology of disease: an introduction to clinical medicine 7ed. Cary D-Hammer, editor Stephen J. McPhee editor.

Course Name:
Biochemistry I
Course Code:
314
The semester/The year:
3rd Class, 1st Semester
Date this description was prepared:
2025-8-18
Available attendance forms:
Third stage
Number of study hours (total)/number of units (total):
60 hours / four units
Name of the course administrator (if more than one name is mentioned)
Dr. Bassem Jassim Hamid
Dr. Rafif Amer Abdul Jabbar
Course objectives
Assist the student to understand the material Biochemistry and how to use the devices available in laboratory, the necessity of learning and experience is emphasized. In the field of teaching, discussing group work, and evaluating the writing of self-reports using scientific references.
Teaching and learning strategies
Course outcomes and teaching, learning and evaluation methods
<p>Cognitive goals</p> <ul style="list-style-type: none"> - Assess the concepts of selected topics in basics of Biochemistry. - To apply theory to practical experiments and the rules of measurements in chemistry of life. - Statement of knowledge and basic principles in biochemistry. <p>Skills and objectives of the course.</p> <ul style="list-style-type: none"> - Discussing the results and group works in the laboratory. - Using scientific references related to biochemistry. <p>Methods and learning</p> <ul style="list-style-type: none"> - Theory lectures. - Conduct work experiments. - Scientific research.

-Science discussions and study sessions.

Evaluation methods

1. Mid-term exams and final exams.
3. Home duties.
4. Scientific reports.
5. Laboratory exam.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
Daily tests, semi-quarterly written exams and final exams.	Use PowerPoint to present the theory and practical lectures.	Introduction to the macromolecules biochemistry: Definitions and terms; proteins, enzymes, DNA; Clinical value	Introduction to Macromolecule Biochemistry: Definitions and Terminology; Proteins, enzymes and DNA. Clinical value		
		Amino acids: Structures of AA (table of standard AA abbreviation and side chain); Classification, properties, isomerism	Amino acids: structuresAA (standard AA abbreviation table and side chain); Classification, properties and isomerism		
		Amino acids: Chemical reactions, witter ions, titration curve Calculating isoelectric point values. Examples and questions. Non standards AA: Structures, existence and clinical value.	Amino acids: chemical reactions, zwitter ions, titration curve Calculating isoelectric point values. Examples and questions. non StandardsAA: Structures, existence and clinical value.		
		Peptides: Peptide bond, resonance forms, isomers, physical properties and chemical reactions. Essential polypeptides in the human body, structures, roles and clinical values.	Amino acids: chemical reactions, zwitter ions, titration curve Calculating isoelectric point values. Examples and questions. non StandardsAA: Structures, existence and clinical value.		
		Proteins: Structure and conformations of proteins, primary structure, secondary structure (4 helix, 5 sheet), tertiary structure, quaternary	Proteins: Protein structure and conformations, primary structure, secondary structure (4 helices, 5		

		structure. Classification, synthesis, cellular functions (Enzymes, cell signaling, and ligand transport, structural proteins), protein in nutrition.	sheets), tertiary structure, quaternary structure. Classification, synthesis, cellular functions (enzymes, cell signaling, transport ligands, structural proteins), and protein in nutrition		
		Denaturation of proteins and protein sequences: Determining AA composition, N-terminal AA analysis, C-terminal AA analysis, Edman degradation, prediction protein sequence from DNA/RNA sequences. Methods of protein study: Protein purification, cellular localization, proteomics and bioinformatics, structure prediction and simulation	Denaturation of proteins and protein sequences: conformation determination AA, N-terminal AA analysis, C-terminal AA analysis, Edman degradation, protein sequence prediction from DNA/RNA sequences. Protein study methods: protein purification, cellular localization, proteomics, bioinformatics, structure prediction and simulation.		
		Carbohydrates: Chemistry and classification, biomedical importance, classification of CHO, Stereochemistry of monosaccharides, metabolism of CHO; Physiologically important monosaccharides, glycosides, disaccharides, polysaccharides.	Carbohydrates: chemistry, classification, biomedical importance, classification CHO, monosaccharide stereochemistry, CHO metabolism; Physiologically important monosaccharides, glycosides, disaccharides and saccharides.		
		Lipids: Introduction, classification of lipids, fatty acids (FA), nomenclature of FA, saturated FA, unsaturated FA, physical and physiological properties of FA, metabolism of lipids. Phospholipids, lipid peroxidation and antioxidants, separation and identification	Fats: introduction, classification of fats, fatty acids (FA), FA nomenclature, saturated FA, unsaturated FA, physical and physiological properties of FA, lipid metabolism. Phospholipids, lipid		

		of lipids, amphipathic lipids.	peroxidation and antioxidants, lipid separation and identification, amphipathic lipids		
		Enzymes: Structures and mechanism, nomenclature, classification, mechanisms of catalysis, thermodynamics, specificity, lock and key model, induced fit model, transition state stabilization, dynamics and function, allosteric modulation. Biological function, cofactors, coenzymes, involvement in diseases	Enzymes: structures and mechanism, nomenclature, classification, catalytic mechanisms, thermodynamics, specificity, lock and key model, induced conformational model, transition state stabilization, dynamics and function, allosteric modification. Biological function, cofactors, coenzymes, involvement in diseases		
		Kinetics: General principles, factors affecting enzyme rates (substrate conc., pH, temperature, etc), single-substrate reaction (MichaelisMenten kinetics), kinetic constants. Examples of kinetic questions and solutions	Kinetics: general principles, factors affecting enzyme rates (substrate cohesion, pH, temperature, etc.), single-substrate interaction (Michelis-Menten kinetics), kinetic constants. Examples of motor questions and solutions		
		Enzyme inhibition: Reversible inhibitors, competitive and non-competitive inhibition, mixed-type inhibition, Irreversible inhibition. Inhibition kinetics and binding affinities (ki), questions and solutions	Enzyme inhibition: reversible inhibitors, competitive and noncompetitive inhibition, mixed inhibition, and irreversible inhibition. Inhibition kinetics and binding affinities (KI), questions and solutions		
		Control of activity and uses of inactivators; multi-substrate reactions, ternary-complex mechanisms, ping-pong	Control the activity and uses of disruptors; Multi-substrate reactions,		

		mechanisms, non-Michaelis-Menten kinetics, pre-steady-state kinetics, chemical mechanisms	complex ternary mechanisms, ping-pong mechanisms, non-Michael-Menten kinetics, pre-steady-state kinetics, chemical mechanisms		
		Nucleic Acid: Chemical structure, nucleic acid components, nucleic acid bases, nucleotides and deoxynucleotides (Properties, base pairing, sense and antisense, super-coiling, alternative structures, quadruple structures	DNA: chemical structure, components of DNA, DNA bases, nucleotides and deoxynucleotides (properties, base pairing, meaning and inverse, supercoiling, alternative structures, quaternary structures		
		Biological functions of DNA: Genes and genomes, transcription and translation, replication	Biological functions of DNA: genes and the genome, transcription and translation, replication		
		Biochemistry of extracellular and intracellular communication: Plasma membrane structure and function; Biomedical importance, membrane proteins associated with lipid bilayer, membranes protein composition, dynamic structures of membranes, a symmetric structures of membranes	Biochemistry of extracellular and intracellular communications: structure and function of the plasma membrane; Biomedical importance, lipid bilayer-associated membrane proteins, membrane protein composition, dynamic structures of membranes, homeostatic structures of membranes		
		Artificial membranes model, the fluid mosaic model, membrane selectivity, physiological functions of plasma membranes.	Artificial membrane model, fluid mosaic model, membrane selectivity, physiological functions of plasma membranes.		
		Biochemistry of the endocrine system: Classification of hormones, biomedical importance, the target cell concept and hormone receptors, biochemistry of	Biochemistry of the endocrine system: classification of hormones, biomedical importance, concept of		

		hormone action and signal transduction	target cell and hormone receptors, biochemistry of hormone action and signal transduction		
		Special topics: Nutrition, digestion, and absorption. Biomedical importance, digestion and absorption of carbohydrates, lipids, proteins, vitamins and minerals; energy balance. Biochemistry of hemostasis and clot formation	Special Topics: Nutrition, Digestion and Absorption. Biomedical importance: Digestion and absorption of carbohydrates, fats, proteins, vitamins and minerals. Energy balance. Biochemistry of hemostasis and clot formation		
Course evaluation					
Distribution is as follows: 40 degrees quarterly and practical exam and daily exams for the second semester 60 Score of the end of the second semester exam (second semester final).					
Learning and teaching resources					
Lippincott's illustrated reviews: Biochemistry, 2011.					
					Electronic references, Internet sites

Course Name
Biochemistry II
Course Code:
329
The semester/The year:
3rd Class, 2nd Semester
Date this description was prepared:
2025-8-18
Available attendance forms:
Third stage
Number of study hours (total) / number of units (total):
60 hours / four units
Name of the course administrator (if more than one name is mentioned)
Dr. Bassem Jassim Hamid
Dr. Rafif Amer Abdul Jabbar
Course objectives
Helping to understand the principles of biochemistry, and preparing the pharmacy students for a successful chemical career.
Teaching and learning strategies
Course outcomes and learning methods
<p>Defined objectives</p> <ul style="list-style-type: none"> - The student's knowledge of all the factors that came across medicine inside the body. - Know the types of metabolism of the body. - Know the factors that affect the body reactions. <p>Skills objectives for the course</p> <p>1-Acquiring the skill of studying accommodate for medicine and factors influencing this medicine inside the body.</p> <p>Learning methods</p> <ol style="list-style-type: none"> 1- Theory lectures. 2- Conduct work experiments. 3- Scientific research. 4- Practise of writing a curriculum and supportive.

Methods and learning

1. Mid-term exams and exams quarterly.
2. Short Tests and investigate.
3. Laboratory exams and reports.

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
Daily and weekly tests, along with semi-semester written exams.	Theory and practical lectures.	Bioenergetic	Bioenergy		
		Biological oxidation.	Biological oxidation		
		The respiratory chain and oxidative phosphorylation.	Respiratory chain and oxidative phospholipids		
		Over view of metabolism.	Overview of metabolism		
		Citric acid Cycle.	H cycle Citric acid.		
		Glycolysis.	Glycolysis.		
		Metabolism of glycogen	Glycogen metabolism		
		Gluconeogenesis.	Glucose formation		
		Pentose phosphate pathway and other pathways of hexose metabolism.	Methods Pentose phosphate and A pathways Also Other hexagons.		9
		Biosynthesis of fatty acids.	Biosynthesis of fatty acids	3	10
		Oxidation of fatty acids	Fatty acid oxidation	2	
		Metabolism of acylglycerol and sphingolipids.	Also acylglycerol and sphingolipids.		
		Lipid transport and storage.	Transport and storage of fat		
		Cholesterol synthesis, transport, and excretion.	Cholesterol synthesis, transport and secretion		
		Biosynthesis of the Nutritionally Nonessential Amino Acids.	Biosynthesis of nutritionally non-essential amino acids.		

		Catabolism of Proteins & Amino Acid Nitrogen	DemolitionProteins and amino acids nitrogen		
		Conversion of Amino Acids to Specialized Products.	Converting amino acids into specialized products.		
		Porphyryns & Bile Pigments	Porphyryns and bile pigments		
Course evaluation					
<ul style="list-style-type: none"> - Scientific discussion within the lessons. - Reports and homeworks. - Written examinations. 					
Learning and teaching resources					
Lippincott's illustrated reviews: Biochemistry, 2011.					
					Electronic references, Internet sites

Course Name
Clinical Laboratory Training
Course Code:
515
The semester/The year:
5th Class, 1st Semester
Date this description was prepared:
2025-8-18
Available attendance forms:
Fifth stage
Number of study hours (total)/number of units (total):
Two hours per week / one unit

Name of the course administrator (if more than one name is mentioned)

Dr. Zuhair Ghaleb Al Shaheen

Course objectives

Provide the student with general information about the chemical tests and biological principles of laboratory diagnosis.

Teaching and learning strategies

Course outcomes and teaching, learning and evaluation methods

A- Defined objectives

Helping to understand the analyses chemical and biological tests.

Statement of knowledge and basic principles in pain training subject experiments.

B- The skills objectives of the course

Providing the student with some skills the basic which considered as necessary for future studies such as analyzing the results recording it regarding pathological analyzes and preparing medical reports.

Methods and learning

- 1- Lectures review.
- 2- Conduct science experiments.
- 3- Study episodes.
- 4- Home dutie.
- 5- Investigation exams.
- 6- He wrote a curriculum and supportive.

Evaluation methods

- 1- Oral exams.
- 2- Investigation exams.
- 3- Scientific reports.

Course structure					
Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	The week
A daily oral and written test. A written mid-term exam, and the final exams.	Theory and practical lectures.	Diagnostic test basics, collecting & transporting specimens, venipuncture, urine specimen, stool specimen.	Basics of diagnostic tests, sample collection and transportation, a sample Intravenous, urine sample, stool sample.		
		Biochemical tests: Fasting blood glucose, Post-prandial glucose, Oral glucose tolerance test	Biochemical tests: Kfasting blood glucose, KPostprandial glucose tolerance test KOral glucose		
		Blood urea, blood creatinine, creatinine clearance, uric acid.	Blood urea, blood creatinine, creatinine clearance, uric acid.		
		Cholesterol, lipoproteins, triglycerides	Cholesterol, lipoproteins, triglycerides		
		Blood proteins, Bilirubin.	Blood proteins, bilirubin		
		Calcium, inorganic phosphate, serum chloride	Calcium, inorganic phosphate, serum chloride		
		Alkaline phosphatase, Acid phosphatase, Alanine aminotransferase, Aspartate aminotransferase, Lactate dehydrogenase, Creatine phosphokinase	Alkaline phosphatase, acid phosphatase, alanine aminotransferase, aspartate aminotransferase,		

			lactate dehydrogenase, creatine phosphokinase.		
		Serological tests: VDRL, ASO-Titer, Hepatitis tests.	Serological tests:VDRL, ASO-Titer, Hepatitis tests		
		C-reactive protein test, Rheumatic factor test, Rosebengal test, Typhoid fever test (Widal test), Pregnancy Test	C-reactive protein test, rheumatic factor test, Rospingale test, typhoid fever test (testAndydall), pregnancy test		
		General urine examination, urine specimen collection	General urine examination and urine sample collection		
		Hematological tests: RBC count, Hb, PCV, RBC indices, WBC count, Platelets count	Blood tests: red blood cell count,Hb, PCV, RBC indicators, white blood cell count, platelet count		
		Blood typing, Coombs test, Bleeding time, ESR.	Blood type, Coombs test, bleeding time,ESR		
		Microbiological tests: culture and sensitivity tests, Staining methods	Microbiological tests: testsTransplantationAnd sensitivity, methodsPigment		
		Culture media, Enriched culture media for general use	Cultivation and support media for general use		
		Tests for identification of bacteria, Disk diffusion tests of sensitivity to antibiotics, Choice of drugs for disk test, bacterial disease and their laboratory diagnosis	T testsDiagnosisBacteria, disk diffusion tests for antibiotic susceptibility, selection of drugs for disk testing, bacterial		

			diseases and their laboratory diagnosis		
Course evaluation					
Distribution is as follows: 40 degreesA quarterly and practical exam and daily exams for the second semester60Score of the end of the second semester exam (second semester final).					
Learning and teaching resources					
Lehninger (principles of biochemistry). Medical Microbiology, Jawetz.					
					Electronic references, Internet sites

Course Name:
Clinical Chemistry
Course Code:
514
The semester/The year:
5th Class, 1st Semester
Date this description was prepared:
2025-8-18
Available attendance forms:
Fifth stage
Number of study hours (total)/number of units (total):
60 hours / 4 academic units
Name of the course administrator (if more than one name is mentioned)
Dr. Falah Hassan Sheri
Dr. Qutaiba Abdul Karim Qasim

Course objectives

Helping to understand the principles of clinical chemistry.

Teaching and learning strategies

Course outcomes, teaching, learning and evaluation methods

Cognitive objectives

- Statement of basic knowledge and principles in clinical chemistry.
- Theoretical application to practical experiments and rules of measurements in clinical chemistry.

Skills objectives for the course:

- Preparing practical reports related to clinical chemistry.
- Preparing research projects, workshops, and scientific conferences related to the subject.

Teaching and learning methods

- Use scientific sources.
- Scientific discussions of the results obtained within the laboratory.

Evaluation methods

- 1- Mid-term exams and final exams
- 2-Daily oral and written exams
- 3-Seminars
- 4-Practical laboratory exams
- 5-Laboratory reports

Course structure

Evaluation method	Learning method	Name of the unit or topic	Required learning outcomes	hours	the week
A daily oral and written test. A written midterm exam and the final exams.	Theoretical and practical lectures	Disorders of Carbohydrates metabolism, Hyperglycemia & Diabetes mellitus, Hypoglycemia	Disorders AYesCarbohydrates, hyperglycemia, diabetes, hypoglycemia		
		Disorders of lipid metabolism.	Disorders AYesFats.		
		Live Function Tests.	Function testsLiver		
		Kidney Function Tests	Kidney function tests		
		Diagnostic enzymology.	Diagnostic enzymes		
		Hypothalamus & pituitary	Diseases of the		

		endocrinology, disorders of anterior pituitary hormones, disorders of adrenal gland, hypopituitarism.	hypothalamus and pituitary endocrine glands, hormone disorders of the anterior pituitary gland, adrenal gland disorders, hypopituitarism.		
		Reproductive system, disorders of gonadal function in males & females, biochemical assessment during pregnancy.	Reproductive system, disorders of gonadal function in males and females, biochemical evaluation during pregnancy		
		Tumor markers.	Tumor markers		
		Drug interaction with laboratory tests.	Drug interaction with brain scans		
		Disorders of calcium metabolism	Disturbances	Also Calcium	
		. Acid-base disorders.	Disturbances	HaBase fluorescence.	

Course evaluation

- Surprising oral questions and scientific discussions during the lesson.
- Written exams.

Learning and teaching resources

Clinical Chemistry & Metabolic Medicine, Crook, 2006.
 2- Clinical Chemistry, Kaplan, 2003.
 Lippincott's illustrated reviews: Biochemistry, 2011.

Electronic references, Internet sites

Academic Program Description Form

University Name: Basrah

Faculty/Institute: Pharmacy collage

Scientific Department: Pharmacognosy

Academic or Professional Program Name:

Final Certificate Name:

Academic System:

Description Preparation Date:

File Completion Date: 2025-7-31

Signature:

Head of Department Name:

Date:

Signature:

Scientific Associate Name:

Dr. Ula Mohammed Noor

Date:31/ 7 2025



The file is checked by: Dr .rana Hassan Shamki

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date:

Signature:

Approval of the Dean

1. Program Vision

Providing a high-quality scientific level to graduate understanding and skilled pharmacists to ensure the best services to society and to reach a leadership position in the field of scientific research related to medicinal plants .

2. Program Mission

Spreading awareness among people about how to deal with medicinal plants scientifically and objectively for the sake of the health and safety of community members and avoiding random dealing with herbs due to the harm and negative side effects it causes on the health of citizens.

3. Program Objectives

Mathematics and Biostatistics: Gives students the ability to deal with the concept of mathematics and statistics, emphasizes the knowledge and skills required to efficiently perform the duties and responsibilities of a pharmacist. The course covers the concept of basic mathematics and the application of biostatistics in the medical field. Upon completion of the course, students will be able to understand the applications of statistics in the medical field.

Computer Science: Gives students the ability to deal with the concept of computer science, and emphasizes the knowledge and skills required to efficiently perform the duties and responsibilities of a pharmacist. The course deals with the basic concept of computers and its application in human life and the medical field. Upon completion of the course, students will be able to understand computer terminology, abbreviations used to describe the lecture, and application programming languages.

Medical Physics: Gives students the ability to deal with physics concepts, and emphasizes the knowledge and skills necessary to perform and efficiently perform

the duties and responsibilities of a pharmacist. The course deals with the concept of basic physics and the application of physics in the medical field. Upon completion of the course, students will be able to understand the physical terminology and abbreviation used to describe the lecture, and its application in the medical field.

Pharmacognosy: Study of medicinal plants in terms of classification, plant parts containing active compounds, types of these compounds, methods of their formation within the plant, reasons for their formation, and the possibility of increasing these compounds using various cultivation methods, including tissue culture. In addition to the interest that the graduate of the Faculty of Pharmacy has a great deal of knowledge of medicinal products derived from plants, analysis of active compounds, methods of extraction and separation of these compounds in different ways, how to store them, and methods of using them correctly.

English Language: Improves students' ability to speak English and understand grammar

4. Program Accreditation

No

5. Other external influences

No

6. Program Structure				
Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements				
Department Requirements				
Summer Training				
Other				

* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
1st Stage		Mathematics and Biostatistics	3	---
1st Stage		Computer Science (1st + 2^{ed} Semester)	---	2
1st Stage		English Language	2	
1st Stage		Medical Physics	2	2
1st Stage		Democracy and human rights	1	---
2nd Stage		Bath crimes	1	---
2nd Stage		Computer Science (1st + 2^{ed} Semester)	---	2
2nd Stage		Arabic Language	2	---
2nd Stage		Pharmacognosy I	3	2
3rd stage		Pharmacognosy II	2	2
3rd stage		Pharmacognosy III	2	2

8. Expected learning outcomes of the program

Knowledge	
1- Knowledge of plant preparations 2- Study of medicinal plants and methods of extracting them 3- The possibility of artificially propagating plants to increase the percentage of active substances	1- Theoretical lectures 2- Educational laboratories 3- Scientific reports 4- Desk research
Skills	
1- Acquiring skill in extraction methods 2- Acquire skill in isolating active ingredients 3- Acquire the skill in diagnosing it	1- Theoretical lectures 2- Educational laboratories 3- Scientific reports 4- Desk research
Ethics	
1- Modern methods of presenting lectures in slide format Use 2 - Video clips and explanatory diagrams 3- Visit the Botanical Garden and submit scientific reports 4- Assigning students to homework	Seminars - daily assignments - written exams Oral and written exams and writing reports on practical experiences

9. Teaching and Learning Strategies

Lectures
Seminars
Videos

10. Evaluation methods

Oral and written exams and writing reports on practical experiences

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Professor	Physics	Medical physics			⊗	
Assist. Professor	Biology	Plant taxonomy			⊗	
Assist. Professor	Biology	Genetic Engineering			⊗	
Assist. Professor	Biology	Genetic Engineering			⊗	
Assist. Professor	Biology	Biotechnology			⊗	
Lecturer	Biology	Phytotherapy			⊗	
Lecturer	Physics	Medical physics			⊗	
Lecturer	Mathematics	Statistics			⊗	
Lecturer	Computer	Computer			⊗	
Lecturer	Computer	Computer			⊗	
Assist. Lecturer	Pharmacy	Pharmaceutical chemistry			⊗	
Assist. Lecturer	Pharmacy	Pharmacognosy			⊗	
Assist. Lecturer	Pharmacy	Pharmacognosy			⊗	
Assist. Lecturer	Pharmacy	Pharmacognosy			⊗	
Assist. Lecturer	Mathematics	Statistics			⊗	
Assist. Lecturer	Biology	Medicinal plants			⊗	
Assist. Lecturer	Biology	Medicinal plants			⊗	
Assist. Lecturer	Physics	Physics			⊗	
Assist. Lecturer	Arts	History			⊗	

Assist. Lecturer	Arts	History			⊗	
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Professional Development
Mentoring new faculty members
Training courses and workshops.
Professional development of faculty members
Evaluation of professors' performance by students and teachers themselves by conducting mutual evaluation.

12. Acceptance Criterion
Academic grade and physical health

13. The most important sources of information about the program
Scientific books and international research

14. Program Development Plan

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
1 st Stage		Mathematics and statistics	Basic			/	/	/			/		/	/	
		Computer I	Basic			/	/	/			/		/	/	
		English language	Basic						/	/			/		
		Medical Physics	Basic		/	/	/	/					/	/	
		Democracy & human rights	Basic				/		/	/		/	/	/	
		Computer II	Basic				/		/	/			/		
2 nd Stage		Pharmacognosy I	Basic		/			/	/	/			/	/	
		Computer III	Basic			/	/	/			/		/	/	
		Computer IV	Basic			/	/	/			/		/	/	
		Arabic language	Basic						/	/			/		
		Bath Criam	Basic				/		/	/		/	/	/	
3 rd stage		Pharmacognosy II	Basic		/				/	/			/	/	
		Pharmacognosy III	Basic		/				/	/			/	/	

Course Description Form

1. Course Name: Mathematics and biostatistics					
2. Course Code:					
3. Semester / Year: The first / first stage					
4. Description Preparation Date:					
2025-7-31					
5. Available Attendance Forms: Attendance system					
6. Number of Credit Hours (Total) / Number of Units (Total)					
3 hours / 3 units					
7. Course administrator's name (mention all, if more than one name)					
Name: Dr. Rana Hasan Shamkhi , Name: Aseel Ali Jaaze Email: Rana413427@gmail.com , Email: aseel.jaaze@uobasrah					
8. Course Objectives					
Course Objectives	<ul style="list-style-type: none"> • Providing the student and enabling him with the basic concepts of integral calculus in order to be prepared to study and understand analysis courses..... • Providing students with important theoretical information, empowering them with the ability to deal with the concept of mathematics and statistical analysis, and emphasizing the knowledge and skill required to be acquired by students to efficiently perform their duties and responsibilities as College of Pharmacy students. 				
9. Teaching and Learning Strategies					
Strategy	Using lectures by speaking to students and using Power Point slides and the blackboard				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Identify the forms of the function	Function and Rang the function.	Lectures	Exam + activity

2	3	Learn limit and continuity and how to apply them	Limits and Continuity.	Lectures	Exam + activity
3	3	Learn the basics of differentiation	Differentiation rules	Lectures	Exam + activity
4	3	Trigonometric functions and finding the derivative	Trigonometric derivative	Lectures	Exam + activity
5	3	Inverse trigonometric functions and how to find their derivative	Derivatives of Inverse trigonometric functions	Lectures	Exam + activity
6	3	Integration with basic information for integration	Rules for integral integration formulas.	Lectures	Exam + activity
7	3	Indefinite integrals. And how to find it	indefinite integrals.	Lectures	Exam + activity
8	3	Properties of definite integrals and how to solve them	Properties of definite integrals	Lectures	Exam + activity
9	3	Integration of the trigonometric function and how to find it	Integration of trigonometric function	Lectures	Exam + activity
10	3	Integration of exponential and logarithmic functions and how to find them	Integration of Exponential and Logarithmic function	Lectures	Exam + activity
11	3	Find the mean, median, and mode of the data	Measures of central tendency	Lectures	Exam + activity
12	3	Finding the relationship between the dependent and independent variables	Correlation coefficients	Lectures	Exam + activity
13	3	Finding the linear equation between the dependent and independent variables	Regression	Lectures	Exam + activity
14	3	Find probability	probability	Lectures	Exam + activity
15	3	Study the laws of probability for any two events	Laws of probability for any two events	Lectures	Exam + activity
16	3	Find the conditional probability	Conditional probability	Lectures	Exam + activity

11. Course Evaluation

30 midterm exams and 70 final exams

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Calculus
Main references (sources)	An introduction to statistics by Dr. Khashi Al-R
Recommended books and references (scientific journals, reports...)	Introduction to statistics (Ronald .Walpole)
Electronic References, Websites	

Course Description Form

13. Course Name:	
Pharmacognosy I	
14. Course Code:	
15. Semester / Year: The first / first stage	
Second/ Second	
16. Description Preparation Date	
2025-7-31	
17. Available Attendance Forms: Attendance system	
18. Number of Credit Hours (Total) / Number of Units (Total)	
3 hours / 3 units	
19. Course administrator's name (mention all, if more than one name)	
Name: Dr. Ula Mohammed Noor	
Email: ula.abdullah@uobasrah.edu.iq	
20. Course Objectives	
Course Objectives	Drug overview and introductory concepts <ul style="list-style-type: none"> • Natural Medicines Sources Types of plants, animals and microorganisms producing natural medicines Classification and division of natural products Classification of drugs depending on their chemical and clinical nature • Scientific nomenclature of plants and methods of classification • Methods of extracting medicines from their sources
21. Teaching and Learning Strategies	
Strategy	<ul style="list-style-type: none"> • Recognize the basic principles of pharmacology • Recognize the physical and chemical properties of natural active ingredients • Identify the methods and pathways of biosynthesis of medically active compounds • Identify methods of classifying and dividing natural products and their sources • Learn about methods of extracting medicines from their sources • Identify the effects of drugs on body systems and vice versa
22. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Definition and using	General Introduction: The Scope of Pharmacognosy, definitions and basic principles.	Theoretical lectures	Oral exams and discussion
2	1	Definition and using	Drugs from natural sources, crude drugs, official and non official drugs.	Theoretical lectures	Oral exams and
3	1	Definition and using	Classification of natural products.	Theoretical lectures	discussion
4	1	Definition and using	Plant nomenclature and taxonomy.	Theoretical lectures	Oral exams and discussion
5	3	Definition and using	Production of crude drugs: Cultivation, collection, drying and storage.	Theoretical lectures	Oral exams and discussion
6	1	Definition and using	Definition and using Deterioration of crude	Theoretical lectures	Oral exams and discussion
7	3	Definition and using	pharmacological activities of natural products.	Theoretical lectures	Oral exams and discussion
8	3	Definition and using	Chemistry of natural drug products.	Theoretical lectures	Oral exams and discussion
9	3	Definition and using	Quality control: Evaluation of natural products; macroscopical evaluation; physical evaluation;	Theoretical lectures	Oral exams and discussion
10	3	Definition and using	Phytochemical investigation of herbal products: Extraction of the plant material; Separation and isolation of constituents; characterization of the isolated compounds.	Theoretical lectures	Oral exams and discussion
11	7	Definition and using	Separation technique: Introduction; Mechanisms of separation and classification based on the type of technique; paper chromatography; Thin layer chromatography; Ion exchange chromatography; Gel filtration chromatography; Column chromatography; Gas chromatography; HPLC; Electrophoresis; Affinity chromatography.	Theoretical lectures	discussion

23. Course Evaluation

40 midterm exams and 60 final exams

24. Learning and Teaching Resources

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

وصف البرنامج الأكاديمي (الصيدلة السريرية)

This academic program description provides a summary of the most important features of the program and the learning outcomes that the student is expected to achieve, demonstrating the most of the opportunities available. It is accompanied by a description of each course within the program

University of Basrah	Academic Institution .1
College of Pharmacy	Department/Center .2
Clinical Pharmacy	Academic Program .3
Bachelor's of Pharmacy	The Final certificate .4
<input type="text"/> /Course 2025-2024	Studying System .5 Annual/ Course/ others
Underway	Accredited .6 accreditation program
Teaching laboratories, hospital training, and Theoretical lectures	other affected ways .7
<input type="text"/>	Date .8
9 .Goals of Academic Program	
1 -Make the graduated student able to read prescriptions	
2 -Ability to communicate with patients	
3 -make the student to educate the patients about their diseases and medications	
4 -To make the graduate student able to follow up on medical cases and therapeutic errors that may occur as a result of the incorrect use of medications inside and outside the hospital and treat them within the approved pharmaceutical contexts in such cases	
5 -Determining drug doses and following them up within the approved pharmaceutical calculations in therapeutic drug monitoring in hospitals and health centers in Iraq	

10 .Outcomes of the program and the ways for teaching, education, and evaluation

a- Cognitive objectives

- 1- To be able to read and dispense medical prescriptions
- 2- To be able to communicate with the patient
- 3- To be able to educate the patient regarding their medications
- 4 -To be able to dispense medications correctly
- 5-To be able to determine doses using therapeutic drug monitoring
- 6- Enabling students to acquire and understand communication skills and medical ethics
- 7-Enabling students to acquire and understand pharmacoeconomics and pharmacokinetics

b- Skills objectives of the program

- 1- Enabling students to possess the skills of verbal and non-verbal communication with patients
- 2- Patient drug education skills
- 3- Pharmacoeconomics skills in determining the financial costs of therapeutic programs for the patient
- 4-Patient monitoring and medication follow-up skills
- 5-Enabling students to learn how to dispense medicines and drugs to patient
- 6-Enabling students to acquire medication preparation skills according to specific medical conditions diagnosed by a doctor
- 7-Enabling students to possess the skills of preparing pharmaceutical dose
- 8- Enabling students to possess the skills to diagnose medical errors for the dispensing medications
- 9- Enabling students to read and interpret all medical and pharmaceutical terms and symbols
- 10- Enabling students to possess the skills of using scientific research tools in the academic and scientific fields
- 11- Enabling students to acquire the skills of dialogue, discussion, listening to others and accepting their opinions
- 12- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge

Methods of learning:

- 1- Seminars
- 2- Educational laboratories
- 3- Hospital training
- 4- Lectures
- 5- Cases discussion

Evaluation methods

- 1- Daily quizzes
- 2- Oral examinations
- 3- Groups discussions
- 4- OSCE [learning rapid case diagnose and managements]
- 5- Mid-term exam
- 6- Final exam

C- Valuable goals.

1. Educating students on professional humanitarian work, promoting and consolidating professional and ethical values among students to practice the profession of pharmacist.
2. Raising students on the culture of integrity and fighting corruption in all its forms
3. Training students to respect the rights of the beneficiaries of their profession, their culture, religion, gender, and race, and training students to respect the freedom of thought, expression, and creativity of others.
4. Developing students' sense of responsibility during the study period and during work, and enhancing the spirit of cooperation and teamwork among students.
5. Supports drug culture among students and community members

Teaching and Learning methods

- 1- Using a strategy of cooperation and assistance during the education process
- 2- Field visits to relevant ministries and educational institutions
- 3- Holding seminars, courses and workshops for students that encourage spiritual values
- 4- Form a discussion group during the lecture

Evaluation methods

Discussions in m small groups, quizzes, oral and written exam, polls

d- Transferable general and qualifying skills (and other skills related to employability and personal development)

1 . Be able to work in private pharmacies

2. Be able to work in hospitals and health centers related to the Ministry of Health and being in charge of.

3-Be able to participate in pharmaceutical advertisement

4-Be able to work in different departments related to Ministry of Health, like pharmacovigilance centers,

11 .program units

الساعات المعتمدة		اسم المقرر أو المساق	رمز المقرر أو المساق	المرحلة الدراسية
عملي	نظري			
	1	الاخلاق الطبية		الثالث
2	2	الصيدلة السريرية 1		الرابع

2	2	الصيدلة السريرية 2		الرابع
	2	الصحة العامة		الرابع
	2	مهارات التواصل		الرابع
	3	العلاجات 1		الخامس
	2	العلاجات 2		الخامس
	2	تدريب مستشفيات		الخامس
	2	اقتصاديات الدواء		الخامس
2	2	المناظرة الدوائية		الخامس

12 .Personal building

1- Participation in training courses held within the college under the supervision of the Rehabilitation and Employment Unit

2- Participation in the professional courses held at the college within the prescribed curriculum, as well as the professional education courses held at the Pharmacists Syndicate after graduation, which helps in developing the graduate's personal skills within the professional and functional aspect.

13. Admission criteria: Establishing regulations related to admission to the college or institute

This is done according to the acceptance rate in the medical group (Faculty of Pharmacy) within the electronic form approved by the Ministry of Higher Education and Scientific Research.

14 . Important Program references

1-Robert S. Beardsley, (ed.); Communication Skills in Pharmacy Practice, 5th edition. -1Robert J. Cipolle, Linda M. Strand, Peter C. Morley. Pharmaceutical Care Practice: The Clinician's Guide, 2nd Edition.

2- Robert m. Veatch and Amy Haddad. Case Studies in Pharmacy Ethics. second edition. Copyright © 2008 by Oxford University Press, Inc.

3-ALISON BLENKINSOPP, PAUL PAXTON (eds), Symptoms in the Pharmacy. A Guide to the Management of Common Illness, 6th edition.

4- Roger Walker, Clive Edwards (eds), Clinical Pharmacy & Therapeutics

5-Reference Text: Roger Walker, Clive Edwards (eds), Clinical Pharmacy & Therapeutics.2012

Barbara G.Wells & Joseph T. Diriro, Pharmacotherapy hand book 7th Edition.

6- Drummond MF, O'Brien B, Stoddart GL, Torrance GW. Methods for the economic evaluation of health care programmes. 3rd ed. Oxford: Oxford University Press, 2005.

7- Applied Clinical Pharmacokinetics, Second Edition, 2008 by Larry A. Bauer.

Program skills diagram

Put a sign for each outcome of each item

Outcome of learning in program

المهارات العامة والتأهيلية المنقولة) المهارات الأخرى المتعلقة بقابلية التوظيف والتطور الشخصي)															الأهداف الوجدانية والقيمية					الأهداف المهاراتية الخاصة بالبرنامج					الأهداف المعرفية					Essential Or	اسم المقرر
5د	4د	3د	د 2	د 1	5ج	4ج	3ج	2ج	1ج	5ب	4ب	3ب	2ب	1ب	5أ	4أ	3أ	2أ	1أ												
			√										√					√		اساسي	مهارات التواصل										
		√										√					√			اساسي	اخلاقيات الصيدلة										
	√										√					√				اساسي	الصيدلة السريية 1										
	√										√					√				اساسي	الصيدلة السريية 2										
											√					√				اساسي	الصحة العامة										
√										√					√					اساسي	العلاجات 1										
√										√					√					اساسي	العلاجات 2										
√										√					√					اساسي	تدريب مستشفيات										
√										√					√					اساسي	مناظرة دوائية										
√										√					√					اساسي	اقتصاد دوائي										

This course description provides a summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the learning opportunities available. It must be linked to the program description.

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Communication skills
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	2hrs*15 weeks=30 weeks
date	2025

8.course goals

1 -To make the graduate student able to communicate with patients and use all available capabilities to communicate with the patient as well as with doctors during the stages of medical treatment.

2- To make the graduate student capable of educating patients regarding the medications used by them, including the medication instructions given to them, and overcoming all difficulties and obstacles that hinder these instructions from reaching them.

9- outcome of learning unit

a- Knowledge goals

- 1-To be able to communicate with the patient and medical staff during the treatment stages
- 2- To be able to educate the patient regarding the medications given to them.
- 3- To be able to overcome the difficulties and obstacles that hinder communication and drug education for patients and medical staff participating in the treatment stages.
- 4- To be able to educate the patient regarding medications

- 5- To be able to dispense medications correctly
- 6- Understand the medical communications skills

. b-skills goals

- 1- Increasing communication skills with patients and medical staff during the treatment stages
- 2- Increasing drug education skills for patients
- 3- Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperating with the medical staff participating in the treatment stages.
- 4- Enabling students to learn how to dispense medication to patients
- 5- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge
- 6- Enabling students to acquire medication preparation skills according to medical conditions diagnosed by a doctor
- 7-Enabling students to possess the skills to diagnose medical errors in dispensing medications
- 8- Enabling students to read and interpret all medical and pharmaceutical terms and symbols
- 9- Enabling students to possess the skills of using scientific research tools in the academic and scientific fields
- 10- Enabling students to acquire the skills of dialogue, discussion, listening to others and accepting their opinions

Learning and educational methods

- 1- Seminars
- 2- Lectures
- 3- Cases presentation

Evaluation methods

- 1- Daily quizzes
- 2- Oral exams
- 3- Mid-term exam
- 4- Final exam

c-Sentimentality goals

- 1- Developing students' sense of belonging to and loyalty to the homeland
- 2- Raising students to respect human dignity
- 3- Raising students on humanitarian and professional work
- 4- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 5- Raising students on the culture of integrity and fighting corruption in all its forms
- 6- Training students to respect the rights of those driven by their profession, culture, religion, gender, and custom.
- 7- Training students to respect the freedom of thought, expression, and creativity of others
- 8- Developing students' sense of responsibility during the period of study and work
- 9- Supporting pharmaceutical culture among students and community members
- 10- Enhancing the spirit of cooperation and teamwork among students

Educational and learning methods

1 -using cooperative and assistance during teaching

2 -live visits into institutions with relate to

3 -symposium and training programs should apply to develop cooperative senses

4 -small discussion groups through class were made

d- - General and qualifying transferable skills (other skills related to employability and personal development)

1 -Can work in private pharmacies.

2-be able to in charge and responsible in hospitals, medical centers and pharmacies belonged to Ministry of Health

Theoretical Contents

Theoretical Contents

Patient-Centered Communication in Pharmacy

Practice

Principles and Elements of Interpersonal

Communication

Nonverbal type of communication.

Barriers to communication.

Listening and empathic responding during communication.

Assertiveness.

Interviewing and assessment.

Helping patients to manage therapeutic regimens.

Patient counseling; counseling check list; point-by-point discussion;counseling scenario.

Medication safety and communication skills.

Strategies to meet specific needs.

Communicating with children and elderly about medications.

Communication skills and inter-professional collaboration.

Electronic communication in healthcare.

Ethical behavior when communicating with patients.



Websites, PowerPoint s	References like reports, data
Nil	Specific electronic site

13 .improvement of course

There are suggestions regarding integrating this subject into community pharmacy topics within the curricula that will be taught to students of the third stage/second course to benefit from it in the practical application of pharmacy training during the summer period.

course description

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Pharmaceutical ethics
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	1hr*15 weeks=15 hours
date	2025

course goals

1- Make the graduate student able to communicate with patients and use all available capabilities to communicate with the patient as well as with doctors during the stages of .medical treatment

2- To make the graduate student capable of educating patients regarding the medications used by them, including the medication instructions given to them, and overcoming all difficulties .and obstacles that hinder these instructions from reaching them

Course outcomes for learning

a- Knowledge goals

- 1- To be able to communicate with the patient and medical staff during the treatment stages
- 2- To be able to educate the patient regarding the medications given to them.
- 3- To be able to overcome the difficulties and obstacles that hinder communication and drug education for patients and medical staff participating in the treatment stages.
- 4- Enabling students to acquire and understand communication skills and medical ethics

b-skills goals

1-Increasing communication skills with patients and medical staff during the treatment stages

2- -Increasing drug education skills for patients

3- Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperating with the medical staff participating in the treatment stages.

4- Enabling students to acquire the skills of dialogue, discussion, listening to others and accepting their opinions

5- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge

Educational methods

seminars

lectures

Discussions inside lectures

Evaluation methods

1- Daily quizzes

2- Oral exams

3- Mid-term exam

4- Final exam

c-Sentimentality goals

1- Developing students' sense of belonging to and loyalty to the homeland

2- Raising students to respect human dignity

3- Raising students on humanitarian and professional work

4- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist

5- Training students to respect the rights of those motivated by their profession, culture, religion, gender, and custom.

6- Training students to respect the freedom of thought, expression, and creativity of others

7- Developing students' sense of responsibility during the period of study and work

8- Supporting pharmaceutical culture among students and community members

Enhancing the spirit of cooperation and teamwork among students

Educational and learning methods

1- examples during lectures

2- videos, pictures, and examples from life

Evaluation methods

Discussions

Exams (mid-term and final)

Oral examination

Theoretical contents	Laboratory works	Notes
Introduction to Pharmacy Ethics (Theoretical considerations).		1 hr
Code of Ethics for Pharmacists.		3 hrs
Common Ethical Considerations in Pharmaceutical Care Practice (Beneficence, Autonomy, Honesty, Informed Consent, Confidentiality, Fidelity).		2 hrs
Interprofessional Relations.		1 hr
Making ethical decisions.		1 hr
Ethical issues related to clinical pharmacy research.		1 hr
Ethical problems in the pharmacist's clinical practice.		1 hr
Preventing misuse of medicines.		3 hrs
Case studies in pharmacy ethics.		1 hr
<p>Robert J. Cipolle, Linda M. Strand, Peter C. Morley. Pharmaceutical Care Practice: The .Clinician's Guide, 2nd Edition Robert m. Veatch and Amy Haddad. Case -2 Studies in Pharmacy Ethics. second edition.</p> <p>Copyright © 2008 by Oxford University Press, Inc</p>	References	

وصف المقرر

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Clinical pharmacy I
attendance	Daily attendance
session\year-	1 st semester\2024-2025
total hours	2hrs*15 weeks=30 weeks
date	2025

Course goals

1- Make the graduate student able to communicate with patients and use all available capabilities to communicate with the patient as well as with doctors during the stages of medical treatment.

2- To make the graduate student capable of educating patients regarding the medications used by them, including the medication instructions given to them, and overcoming all difficulties and obstacles that hinder these instructions from reaching them.

course outcomes

a-Knowledge goals

- 1- To be able to communicate with the patient and medical staff during the treatment stages
- 2- To be able to educate the patient regarding the medications given to them.
- 3- To be able to overcome the difficulties and obstacles that hinder communication and drug education for patients and medical staff participating in the treatment stages.
- 4- To be able to read and dispense medical prescriptions
- 5- To be able to educate the patient regarding medications
- 6- To be able to dispense medications correctly

b-skills goals

- 1- Increasing communication skills with patients and medical staff during the treatment stages
- 2- Increasing drug education skills for patients
- 3 Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperating with the medical staff participating in the treatment stages.
- 4 Enabling students to learn how to dispense medication to patients
- 5 Enabling students to acquire self-learning skills to acquire new information, skills and knowledge
- 6 Enabling students to acquire medication preparation skills according to medical conditions diagnosed by a doctor
- 7 Enabling students to possess the skills of preparing pharmaceutical doses
- 8 Enabling students to possess the skills to diagnose medical errors in the use and dispensing of medications
- 9 Enable students to read and interpret all medical and pharmaceutical terms and symbols
- 10 Enabling students to possess the skills of using scientific research tools in the academic and scientific fields
- 11 - Enabling students to acquire the skills of dialogue, discussion, listening to others and accepting their opinions

Educational and learning methods

- 1- seminars
- 2- case discussions
- 3- case presentations
- 4- lectures

Evaluation methods

b- Sentimentality goals

1. -Raising students to respect human dignity
2. Raising students on humanitarian and professional work
3. -Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
4. Training students to respect the freedom of thought, expression, and creativity of others
5. -Developing students' sense of responsibility during the period of study and work
6. -Supporting drug culture among students and community members
7. Enhancing the spirit of cooperation and teamwork among students

Educational and learning methods

Lectures

Case discussions

Presenting cases, drugs, pharmacies contents

Allow students to discuss cases

Evaluation methods

Oral exams

Quizzes

Cases discussions

Mid-term

Final exam

Week	Theoretical Contents	Laboratory Work	Notes
1	Introduction to community pharmacy.	Communication with patients.	2hrs
2	Respiratory problems: Cough, Common cold, allergic rhinitis, Otitis media, Laryngitis & Pharyngitis	Respiratory system in practice (part I): Cough.	2hrs
3	G.I.T problemse: Diarrhea, Constipation, Heart burn and indigestion, IBS and Hemorrhoids	Respiratory system in practice (part II): Common cold.	2hrs
4	Pediatric care practice : Oral thrush, pinworms and head lice	G.I.T system in practice (part I): Constipation.	2hrs
5	Skin conditions: Acne, Scabies, Psoriasis, Hair loss, Fungal infection, Eczema and Dermatitis , Dandruff, Cold sore, Corns and Callus.	G.I.T system in practice (part II): Diarrhea and IBS.	2hrs
6	Women's health care: Cystitis and vaginal thrush, primary dysmenorrhea and Premenstrual syndrome.	GIT system in practice (part III): GERD& indigestion.	2hrs
7	CNS related problems: Headache, Insomnia, Motion sickness, Nausea and vomiting	Skin conditions in practice (part I): Hair loss; cold sore and athlete's foot.	2hrs
8	- Eye problems	Skin conditions in practice (part II): Dandruff, Eczema and mouth ulcer.	2hrs
9	ENT problems	Skin conditions in practice (part III): warts and scabies.	2hrs
10	Oral hygiene, mouth ulcer	Pediatrics in practice: Oral thrush; colic; pinworm and napkin rash.	2hrs
11	Obesity and body weight control.	Minor eye disorders in practice.	2hrs
12	- Pain and musculoskeletal disorders	CNS system: Insomnia, motion sickness, obesity and nicotine replacement therapy (NRT).	2hrs
13	Nicotine replacement therapy (NRT).	Drug Information sources for pharmacist.	2hrs
14	Dietary supplements	An update in reclassification of OTC drugs.	2hrs
15	An update in reclassification of OTC drugs (simvastatin, Tamusotisin & azithromycin).	Collective practice.	2hrs

Reference Text: ALISON BLENKINSOPP, PAUL PAXTON (eds), Symptoms in the Pharmacy. A Guide to the Management of Common Illness, 6th. edition Lor waterfield, Community Pharmacy Hand Book, 5th edition	References
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developing programs goals
<p>It is the intention to introduce new topics into clinical pharmacy curricula, especially those related to community pharmacy in terms of how the pharmacist deals with common diseases in society and how to treat them and give medication instructions about them, and to study them within the curricula of the second course for third-year students to benefit from them in the .subject of summer training for the pharmacy training subject</p>

وصف المقرر

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Clinical pharmacy II
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	2hrs* 15 weeks=30 weeks
date	2025

Weekly Schedule

	Theoretical Contents	Laboratory Work	Notes
1	Introduction to the concept of clinical pharmacy- its activities and professional responsibilities. (Including current state of clinical pharmacy in Iraq). an overview of pharmaceutical care practice (the patient care process).	Communication with physician and patient counseling.	2hr
2	Hematologic disorders: Anemia and sickle cell disease.	Drugs for anemia and related disorders.	2hr
3	Hypertension.	Cardiovascular drugs in practice part I: diuretics, β -blockers, ACE-inhibitors and Ag II receptor blockers.	2hr
4	Ischemic heart diseases, Heart failure.	Cardiovascular drugs in practice part II: nitrates, Ca^{2+} -channel blockers, α -blockers, and anti-hyperlipidemic drugs.	2hr
5	- Asthma. Chronic obstructive pulmonary disease (COPD).	Drugs for asthma and COPD in practice.	2hr
6	Antimicrobial agents	Antimicrobial drugs in practice part I: β -lactam antibiotics, tetracyclines and aminoglycosides.	2hr
7	Peripheral vascular diseases.	Antimicrobial drugs in practice part II: macrolides, sulphonamides, quinolones, and other miscellaneous antibiotics.	2hr
8		Antimicrobial drugs in practice part III: antivirals and antifungals.	2hr
9	Diabetes mellitus & Diabetic ketoacidosis (DKA) . and other endocrine disorders	Drugs for endocrine system part I (Diabetes Mellitus	2hr
10		Drugs for endocrine system part II: thyroid disorders, corticosteroids, and hormones used in gynecological disorders.	2hr

11		Drugs acting on CNS (antimigraine drugs, analgesics and antiemetics) and musculoskeletal disorders (NSAIDS and bisphosphonates).	2hr
12	Peptic ulcer disease.Tuberculosis	Drugs for GI disorders: peptic ulcer disease and inflammatory bowel disorders.	2hr
13	Gout and hyperuricemia		2hr
14	Rheumatoid arthritis (RA) and osteoarthritis (OA)		2hr
15	Osteoporosis and other metabolic bone disease.		2hr

course description

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Therapeutic I
attendance	Daily attendance
session\year-	1 st semester\2024-2025
total hours	3hrs*15 weeks=45 hours
date	2025

8- Course objectives

1- The course aims to identify the various pathological conditions, their definition, causes, methods of diagnosis, then therapeutic methods and groups of medications used in treatment.

2- Make the graduate student able to identify pathological conditions found in the patient's tympanum

3- Make the graduate student able to communicate with patients in outpatient clinics for general diseases

4- Make the graduate student capable of educating patients regarding the medications they use

5- Make the graduate student able to match incorrect therapeutic methods

With what is found in proven sources

a- Knowledge goals

- 1- To be able to identify pathological conditions recorded in the patient's tympanum
- 2- To be able to communicate with the patient in outpatient clinics for general diseases
- 3- To be able to educate the patient regarding medications
- 4- To be able to match incorrect therapeutic methods with what is found in proven sources

b- Skills goals

- 1 - Skills to identify new alternative medicines
- 2 - Skills to determine the most important goal of treating common diseases
- 3- Enabling students to possess the skills of diagnosing cases of medical errors in the use and dispensing of medications.
- 4- Enabling students to possess the skills of using scientific research tools in the academic and scientific field.
- 5- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge

Educational method

Lectures
Discussion of documented cases

Evaluation methods

Oral exams
Mid-term and final exams

C- Sentimentality goals

- 1- Developing students' sense of belonging to and loyalty to the homeland
- 2- Raising students to respect human dignity
- 3- Raising students on humanitarian and professional work
- 4- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 5- Raising students on the culture of integrity and fighting corruption in all its forms
- 6- Training students to respect the rights of those driven by their profession, culture, religion, gender, and custom.
- 7- Training students to respect the freedom of thought, expression, and creativity of others
- 8- Developing students' sense of responsibility during the period of study and work
- 9- Supporting drug culture among students and community members
- 10- Enhancing the spirit of cooperation and teamwork among students

Educational methods

- 1- lectures
- 2- case discussions
- 3- present examples and cases through lectures

طرائق التقييم

Quizzes

Mid-term exams

Final exams

.General skills (for employment)

- 1- To be more capable of working in research on therapeutic methods that achieve the goal better
- 2- To be able to work in the hospital's pharmacy and specialized lobbies

Weekly Schedule

	Theoretical Contents	Laboratory Work	Notes
1	Interpretation of Lab. data.		2
2	Acute coronary syndrome.		2
3	Arrhythmias		2
4	Thrombosis		2
5	Dyslipidemia		1
6	Stroke		1
7	Shock		2
8	Liver cirrhosis		2
9	Viral hepatitis		1
10	Inflammatory bowel diseases		2
11	Acute renal failure (ARF)		1
12	Chronic renal failure (CRF)		2
13	Hemodialysis and peritoneal dialysis		1
14	Systemic lupus erythematosus (SLE)		1
15	Benign prostatic hyperplasia (BPH)		1
16	Acid – base disorders		2
17	Disorders of fluid and electrolytes		2
18	Urinary incontinence and pediatric enuresis		1
19	Epilepsy and status epilepticus		2
20	Fungal infections		1
21	Parkinson's disease		2
22	Pain management		1

23	Headache disorders		1
24	Tobacco use and dependence		1
25	Parasitic infections		1
26	Viral diseases		1
27	Parenteral nutrition		1
28	Enteral nutrition		1
29	Evidence-based pharmacy practice and medicine.		1
30	Drug distribution systems		2
31	Pharmacovigilance		2

<i>Roger Walker, Clive Edwards (eds), Clinical Pharmacy & Therapeutics.2012</i>	Books and refernces
<i>- Barbara G.Wells & Joseph T. Diriro, Pharmacotherapy hand book 12th Edittio</i>	Main refernces

Refernces	
<i>Barbara G.Wells & Joseph T. Diriro, Pharmacotherapy hand book 10th Edittio</i>	1- الكتب المقررة المطلوبة

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Therapeutic II
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	2hrs*15 weeks=30 hours
date	2025

8- Course objectives

1- The course aims to identify the various pathological conditions, their definition, causes, methods of diagnosis, then therapeutic methods and groups of medications used in treatment.

2- Make the graduate student able to identify pathological conditions found in the patient's tympanum

3- Make the graduate student able to communicate with patients in outpatient clinics for general diseases

4- Make the graduate student capable of educating patients regarding the medications they use

5- Make the graduate student able to match incorrect therapeutic methods

With what is found in proven sources

c- Knowledge goals

1-To be able to identify pathological conditions recorded in the patient's tympanum

2- To be able to communicate with the patient in outpatient clinics for general diseases

3- To be able to educate the patient regarding medications

4- To be able to match incorrect therapeutic methods with what is found in proven sources

d- Skills goals

1 - Skills to identify new alternative medicines

2 - Skills to determine the most important goal of treating common diseases

3- Enabling students to possess the skills of diagnosing cases of medical errors in the use and dispensing of medications.

4- Enabling students to possess the skills of using scientific research tools in the academic and scientific field.

5- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge

Educational method

Lectures

Discussion of documented cases

Evaluation methods

Oral exams

Mid-term and final exams

C- Sentimentality goals

1- Developing students' sense of belonging to and loyalty to the homeland

2- Raising students to respect human dignity

3- Raising students on humanitarian and professional work

4- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist

5- Raising students on the culture of integrity and fighting corruption in all its forms

6- Training students to respect the rights of those driven by their profession, culture, religion, gender, and custom.

7- Training students to respect the freedom of thought, expression, and creativity of others

8- Developing students' sense of responsibility during the period of study and work

- 9- Supporting drug culture among students and community members
10- Enhancing the spirit of cooperation and teamwork among students

Educational methods

- 1- lectures
2- case discussions
3- present examples and cases through lectures

طرائق التقييم

Quizzes

Mid-term exams

Final exams

.General skills (for employment)

- 1- To be more capable of working in research on therapeutic methods that achieve the goal better
2- To be able to work in the hospital's pharmacy and specialized lobbies

Weekly Schedule of therapeutics II

	Theoretical Contents	Laboratory Work	Notes
1	Thyroid and parathyroid disorders		2 hr
2	Contraception		1 hr
3	Endometriosis		1 hr
4	Menstruation related disorders		1 hr
5	Hormonal replacement therapy (HRT)		1 hr
6	Cancer treatment and chemotherapy		2 hr
7	Leukemia's		2 hr
8	Lymphomas and Multiple myeloma		2 hr
9	HSCT(Hematop. Stem- cell- Transplantation).		1 hr
10	Breast and prostate cancers		2 hr
11	Adverse effects of chemotherapy		1 hr
12	Human immunodeficiency virus		1 hr
13	Multiple sclerosis		1 hr
14	Adrenal gland disorders		1 hr
15	Pituitary gland disorders		1 hr
16	Glaucoma		1 hr
17	Alzheimer's disease		1 hr
18	Schizophrenia		2 hr
19	Depressive disorders		2 hr
20	Anxiety disorders		1 hr
21	Sleep disorders		1 hr
22	Bipolar disorders		1 hr

23	Adverse drug reactions		1 hr
24			

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Therapeutic drug monitoring
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	2hrs*15 weeks=30 weeks With 1 hr laboratory
date	2025

Course goals

- 1- make the students capable to calculate the specific dosing regimens for specific cases like renal or hepatic failure
- 2- adjustment dosing for cases needed more than one drug regimen
- 3- educate the students how to deal with specific dosing or rare cases

A- Cognitive objectives

A1- To be able to communicate with the patient and the medical staff during the treatment stages.

A2- To be able to educate the patient regarding the medications given to them.

A3- To be able to overcome the difficulties and obstacles that hinder communication and drug education for patients and medical staff participating in the treatment stages.

A4- To be able to determine doses using medication monitoring

A5- Enabling students to acquire and understand pharmacoeconomics and pharmaceutical management

A6 Able to read and fill prescriptions

A7- To be able to communicate with the patient

A8- To be able to educate the patient regarding medications

A9- To be able to dispense medications correctly

B - The skills objectives of the course.

B1 - Increasing communication skills with patients and medical staff during the treatment stages. B2 - Increasing drug education skills for patients

B3- Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperating with the medical staff participating in the treatment stages.

B4- Patient medication monitoring and follow-up skills

B5- Enabling students to acquire the skills of preparing medicine according to medical conditions diagnosed by the doctor. B6- Enabling students to possess the skills of using scientific research tools in the academic and scientific field. B7- Enabling students to acquire the skills of dialogue, discussion, listening to others, and accepting their opinions.

B8- Enabling students to acquire self-learning skills to acquire new information, skills and knowledge

Educational methods

Seminars
Lectures
Problem solving
presentations

Evaluation methods

Daily quizzes
Mid-term and final exams

c-Sentimentality goals

- 1- Raising students to respect human dignity
- 2- Raising students on humanitarian and professional work
- 3- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 4- Raising students on the culture of integrity and fighting corruption in all its forms
- 5- Training students to respect the freedom of thought, expression, and creativity of others
- 6- Developing students' sense of responsibility during the study period and work
- 7- Supporting drug culture among students and community members

Weekly Schedule			
	Theoretical Contents	Laboratory Work	Notes
1	Course Overview	Practical work for:	
2	Review of basic pharmacokinetic (PK)-	Review of basic pharmacokinetic (PK)-	2hr
3	Review of basic pharmacodynamics (PD)	Review of basic pharmacodynamics (PD)	1hr
4	Clinical PK equations and calculations	Clinical PK equations and calculations	3hr
5	Clinical PK in special population and cases	Clinical PK in special population and cases	3hr
6	Clinical PK/PD for Antibiotics (e.g., Aminoglycosides, Vancomycin)	Clinical PK/PD for Antibiotics (e.g., Aminoglycosides, Vancomycin)	4hr
7	Clinical PK/PD for Cardiovascular agents (e.g., Digoxin, Lidocaine, Procainamide/N-Acetyl Procainamide)	Clinical PK/PD for Cardiovascular agents (e.g., Digoxin, Lidocaine, Procainamide/N-Acetyl Procainamide)	4hr
8	Clinical PK/PD for Anticonvulsants (e.g., Phenytoin, Carbamazepine, Valproic Acid, Phenobarbitone/Primidone, Ethosuxsimide)	Clinical PK/PD for Anticonvulsants (e.g., Phenytoin, Carbamazepine, Valproic Acid, Phenobarbitone/Primidone, Ethosuxsimide)	6hr
9	Clinical PK/PD for Immunossprasants (e.g., Cyclosporine, Tacrolimus)	Clinical PK/PD for Immunossprasants (e.g., Cyclosporine, Tacrolimus)	2hr
10	Clinical PK/PD of other drugs (e.g., Lithium, Theophylline, Anticancer agents, Anticoagulats)	Clinical PK/PD of other drugs (e.g., Lithium, Theophylline, Anticancer agents, Anticoagulats)	4hr

**Reference Text: Roger Walker, Clive Edwards (eds),
Clinical Pharmacy & Therapeutics.2012**

**Barbara G.Wells & Joseph T. Diriro, Pharmacotherapy
hand book 7th Edittion.**

Refernces

development olan

The intention is to develop the capabilities of graduating students to be fully aware of drug management topics through:

They worked on devices used in hospitals for the purpose of following up on treatment after it was taken by patients lying in the hospital lobbies. There is a drug monitoring center in Baghdad Medical City Hospital, which is currently the only one in Iraq.

وصف المقرر

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	pharmacoeconomics
attendance	Daily attendance
session\year-	2 nd semester\2024-2025
total hours	2hrs*15 weeks=30 weeks
date	2025
Course goals	
<p>1- understand the advantage of economic evaluation of pharmaceutical products and how to apply in life</p> <p>2- try to choose the best intervention (new drug, building hospital, or any services for health institutions) with the lowest budgets to get the best advantages presenting to patients</p>	
course outcomes	

a- Knowledge goals

- 1- try to understand pharmacoeconomics
- 2- try to apply the knowledge of pharmacoeconomics on daily life to get best results

b-skills goals

- B1- Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperation with the medical staff participating in the treatment stages
- B2- Pharmacoeconomics skills in determining the financial costs of therapeutic programs for the patient.
- B3- Enabling students to possess the skills of using scientific research tools in the academic and scientific field

Educational and learning methods

- 1- lectures
- 2- cases presentations
- 3- calculate problems
- 4- examples presenting

Evaluation methods

- 1- quizzes
- 2- mid-term exam
- 3- final exam

c-Sentimentality goals

- 1- Developing students' sense of belonging to and loyalty to the homeland
- 2- Raising students to respect human dignity
- 3- Raising students on humanitarian and professional work
- 4- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 5- Raising students on the culture of integrity and fighting corruption in all its forms
- 6- Training students to respect the rights of those driven by their profession, culture, religion, gender, and custom.
- 7- Training students to respect the freedom of thought, expression, and creativity of others
- 8- Developing students' sense of responsibility during the period of study and work
- 9- Supporting drug culture among students and community members
- 10- Enhancing the spirit of cooperation and teamwork among students

Weekly Schedule

	Theoretical Contents	Laboratory Work	Notes
1	Course overview, Changes in health care delivery, overview of pharmacoeconomics.		2 hr
2	Cost determination.		2 hr
3	Evaluation of outcomes and effectiveness, types of pharmacoeconomic analyses: Cost effectiveness analyses (CEA), cost minimization analyses (CMA).		2 hr
4	Methods of data collection and analyses, modeling (decision analyses).		2 hr
5	1st mid-term examination.		2 hr
6	Incremental analyses; case studies.		2 hr
7	Evaluation outcomes: Utility and quality of life; types of pharmacoeconomic analyses, cost utility analyses (CUA).		2 hr
8	Evaluation outcomes: Net benefit, cost utility analyses (CBA), compare and contrast CEA, CUA and CBA.		2 hr
9	Methods of data collection and analyses: Statistical/Econometric modeling.		2 hr
10	2nd mid-term examination.		2 hr
11	Drug-focused versus disease-focused frame work for conducting pharmacoeconomic analyses.		2 hr
12	Critical review of pharmacoeconomic and quality of life literature.		2 hr
13	Introduction to epidemiology.		2 hr
14	Project presentation.		2 hr
15	Project presentation.		2 hr

-1 Drummond MF, O'Brien B, Stoddart GL, Torrance GW. Methods for the economic evaluation of health care programmes. 3rd ed. Oxford: Oxford University Press, 2005.	references

course prescription

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Hospital training
attendance	weekly attendance
session/year-	Annual 2024-2025
total hours	2 hours*15 weeks=30 weeks (its practical in nature, taken at hospital departments one day each week and accounts 2 units from general students units
date	2025

Course goals

1. - Making the graduate student able to communicate with patients and use all available capabilities to communicate with the patient as well as with doctors during the stages of medical treatment..
2- To make the graduate student able to educate patients regarding the medications used by them, including the medication instructions given to them, and to overcome all the difficulties and obstacles that hinder these instructions from reaching them.

a- Knowledge goals

- 1- To be able to communicate with the patient and the medical staff during the treatment stages.
- 2 - To be able to educate the patient regarding the medications given to him.
- 3- To be able to overcome the difficulties and obstacles that hinder communication and drug education for patients and medical staff participating in the treatment stages.

b- Skills goals

B1 - Increasing communication skills with patients and medical staff during the treatment stages

B2 - Increasing drug education skills for patients

B3- Increasing the skills of making the right decisions in giving correct drug consultations to patients and overcoming all obstacles that hinder the process of communication and drug education for patients and cooperating with the medical staff participating in the treatment stages.

B4- Enabling students to possess the skills of diagnosing cases of medical errors in the use and dispensing of medications.

B5- Enabling students to read and interpret all medical and pharmaceutical terms and symbols.

B6- Enabling students to acquire the skills of using scientific research tools in the academic and scientific field.

B7- Enabling students to acquire the skills of dialogue, discussion, listening to others, and accepting their opinions.

Educational methods

- 1- seminars
- 2- lectures
- 3- case discussions
- 4- hospital visiting to overcome presenting cases

Evaluation methods

- 1- case discussions
- 2- oral examinations
- 3- quizzes
- 4- mid-term and final exams

c-Sentimentality goals

- 1- Raising students to respect human dignity
- 2- Raising students on humanitarian and professional work
- 3- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 4- Training students to respect the rights of those motivated by their profession, culture, religion, gender, and custom.
- 5- Developing students' sense of responsibility during the period of study and work

10 .course units: Hospital training

Evaluation method	Education method	Subjects	Outcomes	hours	week
Exam (oral and written) Discussions in hospitals	Lectures Cases,	Cardiac disease, DM, Hepatic disorders, renal diseases,	Medicine dept	10	1
Exam (oral and written) Discussions in hospitals	Lectures Cases	Patient care pre- and post-operative, fluids, IV nutrition, appendicitis, hernia, diabetic foot, gall stone, DVT, breast cancer, renal stone	Surgical dept	10	2
Exam (oral and written) Discussions in hospitals	Lectures Cases	Abortion, DM and HT during pregnancy, thyroid disease, epilepsy, anemia, UTI during pregnancy, ectopic pregnancy, PCOS, endometriosis	Gynecological dept	5	3
Exam (oral and written) Discussions in hospitals	Lectures Cases	SOB, febrile convulsions, gastrointestinal disorders, nervous system disorders Jaundice and complications	Pediatric dept	5	4

وصف المقرر

educational institution	College of pharmacy
department .	Clinical pharmacy
course name/	Public health
attendance	daily attendance
session\year-	1st semester 2024-2025
total hours	2 hours*15 weeks=30hours
date	2025

educational goals

Students acquire basic information in the field of public health

And pharmaceutical practice to rise to the required scientific level

c-Sentimentality goals

- 1- Raising students on professional humanitarian work
- 2- Promoting and consolidating professional and ethical values among students practicing the profession of pharmacist
- 3- Enhancing the spirit of cooperation and teamwork upon request
- 4- Training students to respect the freedom of thought, expression, and creativity of others
- 5- Developing students' sense of responsibility during the study period and during work

Educational methods

- 1- Discussing group work
- 2- Writing self-reports
- 3- Using a strategy of cooperation and assistance during the education process
- 4- lectures
- 5- case discussion

Evaluation methods

- 1- quizzes to evaluate students level

General skills (specially for employment)

1-follow-up newly references

2-follow-up new subjects from websites

3-solving problems and questions related to the studied subjects

طريقة التقييم	طريقة التعليم	اسم الوحدة / أو الموضوع /الممارسة الصيدلانية	اسم الوحدة / أو الموضوع /الصحة العامة	الساعات	الأسبوع
Quizzes, reports, homeworks	Scientific references, smart board	introduction	Introduction about public health	2	1
Quizzes, reports, homeworks	Scientific references, smart board	Pharmaceutical behaviours and health system I	epidemiology	2	2
Quizzes, reports, homeworks	Scientific reference s, smart board	Pharmaceutical behaviours and health system II	Disease control	2	3
Quizzes, reports, homeworks	Scientific references, smart board	Increase health culturs	Heath insurance	2	4
Quizzes, reports, homeworks	Scientific references, smart board	Pharmaceutica l care introduction	GIT disorders	2	5
Quizzes, reports, homeworks	Scientific references, smart board	Planning and pharmaceutical care	Control on GIT disorders	2	6
Quizzes, reports, homeworks	Scientific references, smart board	Mid-term exam		2	8
Quizzes, reports, homeworks	Scientific references, smart board	Planning and pharmaceutical careII	Travelling and control disease transmission through mucous membrane	2	9
Quizzes, reports, homeworks	Scientific references, smart board	Pharmacy judgment	Air born infections	2	10

Quizzes, reports, homeworks	Scientific references, smart board	Hospital pharmacy services	Control on air born infections	2	11
Quizzes, reports, homeworks	Scientific references, smart board	Biological health in health institutions	Non-infectious disease (chronic disease)	2	12
Quizzes, reports, homeworks	Scientific references, smart board	Pharmaceutical prescription and control I	Health and genetic disorders	2	13
Quizzes, reports, homeworks	Scientific references, smart board	Pharmaceutical prescription and control I	Nutritional disturbance	2	14
Quizzes, reports, homeworks	Scientific references, smart board	True and acceptable use of drugs (I, II)	Vaccines manufacturing	2	15

12 building units	
Lucas AO, Gilles HM, (Eds), Short Textbook of Public Health Medicine for the Tropic, (4th Ed), 2003 Lecture Notes in pharmacy practice, lilian M Azzopardi, 2010, pharmaceutical press, london	Refernces
	2- المراجع الرئيسية المصادر
Oxford Textbook of Global Public Health, Roger Detes, Martin Gulliford, Quarrisha Abdool Karim, et al.	Need to be assistance with references

Academic Program Description Form

University Name: .Basra

Faculty/Institute: Pharmacy

Scientific Department: pharmacology and toxicology

Academic or Professional Program Name: BSc Pharmacy

Final Certificate Name: BSc Pharmacy

Academic System: semester

Description Preparation Date: 2025-8-18

File Completion Date:

2025-8-18

Signature:

Head of Department Name:

Waleed Khalid Ghanim

Date: 2025-8-18

Signature:

Scientific Associate Name:

Date:



The file is checked by: Dr.Rana Hasan

Department of Quality Assurance and University Performance

Director of the Quality Assurance and University Performance Department:

Date: 2025-8-21

Signature:

Approval of the Dean

1. Program Vision

The College of Pharmacy seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of teaching pharmacy and community service in hospitals. Government and private sector.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in the various pharmaceutical sciences, developing the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, emphasizing health, social and cultural values and responding to the requirements of the public sector and the local market.

3. Program Objectives

1. Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.
2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.
3. Spreading a culture of health in society, transferring medical knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and pharmaceutical sciences.

5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of pharmacy and medical sciences.

Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

no

5. Other external influences

no

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	yes			
Department Requirements	yes			
Summer Training	yes			

Other				
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* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2024–2025 second stage		physiology	theoretical	practical
			3 hr.	2 hr.

8. Expected learning outcomes of the program	
Knowledge	
Informing students about human organs, their functions, diseases that may affect these organs, and possible treatment methods	
Skills	
Acquire sufficient information about the human body and various vital organs	
Ethics	
Developing students' abilities to diagnose diseases and treatment methods	

9. Teaching and Learning Strategies
<p>1– Explaining the scientific material by giving theoretical scientific lectures about the various human organs.</p> <p>2– Applying the theoretical aspect in practical laboratories by carrying out some important scientific experiments that consolidate the information given in the theoretical aspect.</p>

10. Evaluation methods
Daily, monthly, mid–semester, and end–of–semester exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
prof	Human biology	Physiology	Physiology		yes	
prof	Veterinary medicine	Veterinary physiology			yes	
Assistant prof	Veterinary medicine	Physiology			yes	
Assistant prof	Veterinary medicine	Veterinary physiology			yes	
Lecturer	Veterinary medicine	Physiology			yes	
Lecturer	Pharmacy	Physiology			Yes	
Assistant Lec.	Pharmacy	Physiology			yes	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

Guyton and hall textbook of medical physiology,

Guyton and hall textbook of medical physiology, fourteenth edition isbn: 978-0-323-59712-8
international edition isbn: 978-0-323-67280-1

14. Program Development Plan

A comprehensive understanding of normal body function, allowing more effective treatment of abnormal or pathological conditions.

The study of physiology is of central importance in medicine and related health sciences, because it supports advances in our understanding disease and our ability to treat it more effectively.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
second stage 2025-8-18		Physiology	basic	•				•				•			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:	
Human physiology	
2. Course Code:	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
2025-8-18	
5. Available Attendance Forms:	
Attendance system	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75 semester hours. 3 hours per week theoretical and 2 hours per week practical	
7. Course administrator's name (mention all, if more than one name)	
Name: assistant prof. Dr. Muhsin Sagheer Ghalib Email:	
8. Course Objectives	
<p>The primary goal is to explain the basic mechanisms by which... How they work in an organism and how they interact. He provides A comprehensive understanding of the body's normal function, enabling more Effective treatment for abnormal or pathological conditions. The study of physiology is of central importance in medicine and Health sciences are relevant, because they support advances in our understanding disease and our ability to treat it more effectively</p>	<ul style="list-style-type: none"> • • •
9. Teaching and Learning Strategies	
Strategy	1- Educational strategy, collaborative concept planning,

- 2- Brainstorming education strategy.
3- Education Strategy Notes Series

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
اسم التدريسي المكلف العملي	اسم التدريسي المكلف النظري	المادة العملية	المادة النظرية	التاريخ	الاسبوع
م.م فائق صدام	ا.د نظيرة فالح	Osmosis and fragility	-Cell physiology -Plasma membrane structure -Transport in plasma membrane	26/09 to 28/09	1
م.م فائق صدام	ا.د. نظيرة فالح	Simple muscletwitch	Membrane of potential and action potentials	3/10 to 5/10	2
م.م حسين محمد	م.م رشا نصير	Tetanus and fatigue	Neuro transmitter	10/10 to 12/10	3
م.م ابرار سلمان	ا.م.د. منال ناصر	Smooth muscle contraction	Contraction of skeletal muscle Contraction and excitation of smooth muscle Physiology of cardiac muscle The special senses	17/10 to 19/10	4
	ا.د نظيره فالح	Collective exam	The nervous system The autonomic nervous system	24/10 to 26/10	5
			Mid exam	1/11 to 16/11	6-7
م.م ابرار سلمان	م.م رشا نصير	vision	Respiratory system	21/11 to 23/11	8
م.م رشا نصير	م.م رشا نصير	spirometer	Respiratory system	5/12 to 7/12	9
م.م علي دمحم جاسم	ا.م.د. محسن صغير	Blood pressure	Cardiovascular system	12/11 to 14/12	
م.م راناد عبد الرؤوف	ا.م.د. محسن صغير	ECG	Cardiovascular system	19/12 to 21/12	
	ا.م.د. منال ناصر		Urinary system	26/12 to 28/12	

11. Course Evaluation

The distribution is as follows: 20 marks for semester text exams and 20 marks for the practical aspect. 60 final exam score

12. Learning and Teaching Resources

Guyton and hall textbook of medical physiology	
Gannon's review medical physiology	
Additional Resources	
Google scholar Medical physiology	

1. Program Vision

The College of Pharmacy seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of teaching pharmacy and community service in hospitals. Government and private sector.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in the various pharmaceutical sciences, developing the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, emphasizing health, social and cultural values and responding to the requirements of the public sector and the local market.

3. Program Objectives

1. Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.
2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.
3. Spreading a culture of health in society, transferring medical knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

Other				
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* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2024-2025 third stage		Pharmacology I	theoretical	practical
			3 hr.	

8. Expected learning outcomes of the program	
Knowledge	
Introducing pharmacy students to the basics of general pharmacology. The student will learn about the different body systems and the medications used to influence them in health and disease. Furthermore, the course will cover medications used to treat microbial infections	
Skills	
Acquire sufficient information about the various medications that treat diseases that can affect humans and calculate the correct doses to avoid symptoms and possible interactions.	
Ethics	
Developing students' abilities to diagnose diseases and treatment methods	

9. Teaching and Learning Strategies
1- Explaining the scientific material by giving theoretical scientific lectures on medicines and medical drugs that can be used to treat various diseases.

10. Evaluation methods
Daily, monthly, mid-semester, and end-of-semester exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assistant prof	Pharmacy	Pharmacology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	
Lecturer Dr.	Veterinary medicine	Pharmacology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

Lippincott pharmacology 7th edition, 2019
Katzung basic and clinical pharmacology 12th edition, 2012

14. Program Development Plan

A comprehensive understanding of normal body function, allowing more effective treatment of abnormal or pathological conditions.

The study of physiology is of central importance in medicine and related health sciences, because it supports advances in our understanding of disease and our ability to treat it more effectively.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
third stage 2025-8-18		Pharmacology	basic	•				•				•			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Pharmacology I
2. Course Code:
3. Semester / Year:
Semester
4. Description Preparation Date:
2025-8-18
5. Available Attendance Forms:
Attendance system
6. Number of Credit Hours (Total) / Number of Units (Total)
45 semester hours. 3 hours a week theoretically, for 15 weeks
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Dr. Karamallah Shaker Mahmoud Email:
8. Course Objectives
The primary goal is to explain the basic mechanisms by which... How they work in an organism and how they interact. He provides A comprehensive understanding of the body's normal function, enabling more Effective treatment for abnormal or pathological conditions. The study of physiology is of central importance in medicine and Health sciences are relevant, because they support advances in our understanding disease and our ability to treat it more effectively
9. Teaching and Learning Strategies
1- Educational strategy, collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series 1- Educational strategy, collaborative concept planning. 2- Brainstorming education strategy. 3- Education Strategy Notes Series

10. Course Structure

		Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
اسم التدريسي المكلف	المادة العملية	المادة النظرية			التاريخ	الاسبوع
م.د أسماء محمد			General introduction to pharmacology		20/2/2024	1
م.د أسماء محمد			Pharmacokinetics		21,23/2	2
م.د أسماء محمد			Drug receptor interaction and pharmacodynamics		27,28/2 2/3	3
م.د كرم الله شاكر			The autonomic nervous system (ANS)		6,7/3	4
م.د كرم الله شاكر			Cholinergic system		9,13,14,16/3	5
م.د كرم الله شاكر			Adrenergic system		20,21,23,27/3	
			Mid exam		4/4/- 20/4	
			Principal of antimicrobial therapy		24/4	7
ا.م.د احمد هاشم			B lactam and other cell wall synthesis inhibitor antibiotics		25,27/4 1/5	8
ا.م.د احمد هاشم			Protein synthesis inhibitors		1,2/5	9
م زينب نجم عبد النبي			Quinolones, folate antagonist and urinary tract antiseptics		4/5	10
م. زينب نجم عبد النبي			Antimycobacterium drugs		8/5	11
م. زينب نجم عبد النبي			Antifungal drugs		9/5	12
م. زينب نجم عبد النبي			Antiprotozal drugs		11/5	13
م. زينب نجم عبد النبي			Antiviral drugs		15/5	14
			Final		21/5	

11. Course Evaluation

The distribution is as follows: 30 marks for the mid-term exams and 70 marks for the final exam

12. Learning and Teaching Resources

Lippincott pharmacology 7th edition, 2019	
Katzung basic and clinical pharmacology 12 th edition, 2012	
Google scholar	

1. Program Vision

The College of Pharmacy seeks to be one of the leading higher education institutions at the University of Basra in the field of modern education and scientific research through its scientific, research and administrative activities. It also works to provide an integrated path for its students and professors to make them active and creative in serving the community in the fields of teaching pharmacy and community service in hospitals. Government and private sector.

2. Program Mission

Working to prepare and graduate leading scientific and leadership competencies in the various pharmaceutical sciences, developing the balance of knowledge in the field of scientific research to serve the local, regional and international community, as well as training and refining the minds of students scientifically and cognitively, emphasizing health, social and cultural values and responding to the requirements of the public sector and the local market.

3. Program Objectives

1. Embodying the vision, mission and goals of the University of Basra, and applying the best educational practices with a focus on ensuring and enhancing quality and performance.
2. Preparing specialized cadres capable of serving the community and preparing for the preparation of future specializations.
3. Spreading a culture of health in society, transferring medical knowledge and skills, writing academic research, and creative scientific achievement through student- and teaching-focused activities.

4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and pharmaceutical sciences.

5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of pharmacy and medical sciences.

Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

no

5. Other external influences

no

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	yes			
Department Requirements	yes			
Summer Training	yes			

Other				
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* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2024–2025 4th stage		Pharmacology II	theoretical	practical
			2 hr.	2 hr.

8. Expected learning outcomes of the program
Knowledge
Introducing pharmacy students to the basics of general pharmacology. The student will learn about the different body systems and the medications used to influence them in health and disease. Furthermore, the course will cover medications used to treat microbial infections
Skills
Acquire sufficient information about the various medications that treat diseases that can affect humans and calculate the correct doses to avoid symptoms and possible interactions.
Ethics
Developing students' abilities to diagnose diseases and treatment methods

9. Teaching and Learning Strategies
1– Explaining the scientific material by giving theoretical scientific lectures on medicines and medical drugs that can be used to treat various diseases.

10. Evaluation methods
Daily, monthly, mid–semester, and end–of–semester exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	Pharmacy	Pharmacology and toxicology			yes	
Assistant Prof.	Pharmacy	Pharmacology			yes	
Assistant Prof.	Pharmacy	Pharmacology and toxicology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

Lippincott pharmacology 7th edition, 2019
Katzung basic and clinical pharmacology 12th edition, 2012

14. Program Development Plan

A comprehensive understanding of normal body function, allowing more effective treatment of abnormal or pathological conditions.

The study of physiology is of central importance in medicine and related health sciences, because it supports advances in our understanding disease and our ability to treat it more effectively.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
fourth stage 2025-8-18		Pharmacology II	basic	•				•				•			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Pharmacology II
2. Course Code:
3. Semester / Year:
Semester
4. Description Preparation Date:
2025-8-18
5. Available Attendance Forms:
Attendance system
6. Number of Credit Hours (Total) / Number of Units (Total)
60 semester hours. 2 hours per week theoretical and 2 hours practical, for 15 weeks
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Dr. Asmaa Mohammed Email:
8. Course Objectives
The primary goal is to explain the basic mechanisms by which... How they work in an organism and how they interact. He provides A comprehensive understanding of the body's normal function, enabling more Effective treatment for abnormal or pathological conditions. The study of physiology is of central importance in medicine and Health sciences are relevant, because they support advances in our understand disease and our ability to treat it more effectively
9. Teaching and Learning Strategies

10. Course Structure

	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
اسم التدريس ي المكلف	المادة العملية	اسم التدريس ي المكلف	المادة النظرية	التاريخ	الاسب وع
م.م شيماء نادم	Routs of drug administration	م.م أسماء محمد	Introduction to CNS pharmacology	25/9	1
م.م شيماء نادم	Absorption and excretion	م.م أسماء محمد	Anxiolytic and hypnotic	27/9 1/10	2
م.م ازهار يونس	Barbiturates	م.م أسماء محمد	Treatment of neurogenerative diseases	4/10	3
م.م ازهار يونس	Effect of parasympathetic s on glands	م.م ميساء بناي	Opioid analgesics	8/10	4
	Collective exam	م.م ميساء بناي	CNS stimulants	9/10 to 11/10	5
	غياب الطلبة قبل امتحان المد	م.م ميساء بناي	Antiepileptic drug	15/10	6
	Mid exam		Mid exam	4/11 to 20/11	7
م.م علي محمد جاسم	Drug and human eye	م.م دكرم الله شاكر	Antidepressant	22/11	8
م.م علي محمد جاسم	Effects of drugs on IOP	م.م دكرم الله شاكر	Antipsychotics	19/11	9

م. م علي محمد جاسم	Evaluation of NSAIDs	ا. م. د احمد هامش	Diuretics	9/10	10
م. د شيماء محمد	Evaluation of antiparkinsonian	ا. م. د احمد هامش	Antihypertensive drugs	16/10	11
م. د ميساء بناي	Evaluation of opioids	ا. م. د احمد هامش	Drugs for heart failure	23/10	12
		م. د ميساء بناي	Antihyperlipidemic	24/11	13
		م. د ميساء بناي	Gastrointestinal and antiemetic drugs	27/11	14
		م. د أسماء محمد	Drugs acting on the respiratory system	8/1 2	15
		م. د أسماء محمد	Local anesthesia	10/12	16
		ا. م. د اسيا سلمان	General anesthesia	11/12	17
		ا. م. د اسيا سلمان	Antiarrhythmic	11/12	18
		ا. م. د اسيا سلمان	Anti-Anginal	13/12	19
		ا. م. د اسيا سلمان	Drugs effecting the blood	13/12	20

11. Course Evaluation

The distribution is as follows: 40 marks for the mid-term exams, divided into 20 theoretical and 20 marks for practical, and 60 marks for the final exam.

12. Learning and Teaching Resources

Lippincott pharmacology 7th edition, 2019

Katzung basic and clinical pharmacology 12th edition, 2012

4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and pharmaceutical sciences.

5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of pharmacy and medical sciences.

Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

no

5. Other external influences

no

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	yes			
Department Requirements	yes			
Summer Training	yes			

Other				
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* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2024–2025 4th stage		Pharmacology II	theoretical	practical
			2 hr.	2 hr.

8. Expected learning outcomes of the program
Knowledge
Introducing pharmacy students to the basics of general pharmacology. The student will learn about the different body systems and the medications used to influence them in health and disease. Furthermore, the course will cover medications used to treat microbial infections
Skills
Acquire sufficient information about the various medications that treat diseases that can affect humans and calculate the correct doses to avoid symptoms and possible interactions.
Ethics
Developing students' abilities to diagnose diseases and treatment methods

9. Teaching and Learning Strategies
1– Explaining the scientific material by giving theoretical scientific lectures on medicines and medical drugs that can be used to treat various diseases.

10. Evaluation methods
Daily, monthly, mid–semester, and end–of–semester exams

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	Pharmacy	Pharmacology and toxicology			yes	
Assistant Prof.	Pharmacy	Pharmacology			yes	
Assistant Prof.	Pharmacy	Pharmacology and toxicology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program

Lippincott pharmacology 7th edition, 2019
Katzung basic and clinical pharmacology 12th edition, 2012

14. Program Development Plan

A comprehensive understanding of normal body function, allowing more effective treatment of abnormal or pathological conditions.

The study of physiology is of central importance in medicine and related health sciences, because it supports advances in our understanding disease and our ability to treat it more effectively.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024 fourth stage		Pharmacology II	basic	•				•				•			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:
Pharmacology II
2. Course Code:
3. Semester / Year:
Semester
4. Description Preparation Date:
2025-8-18
5. Available Attendance Forms:
Attendance system
6. Number of Credit Hours (Total) / Number of Units (Total)
60 semester hours. 2 hours per week theoretical and 2 hours practical, for 15 weeks
7. Course administrator's name (mention all, if more than one name)
Name: Lec. Dr. Asmaa Mohammed Email:
8. Course Objectives
<p>The primary goal is to explain the basic mechanisms by which... How they work in an organism and how they interact. He provides A comprehensive understanding of the body's normal function, enabling more Effective treatment for abnormal or pathological conditions. The study of physiology is of central importance in medicine and Health sciences are relevant, because they support advances in our understand disease and our ability to treat it more effectively</p>
9. Teaching and Learning Strategies

10. Course Structure

	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
اسم التدريس ي المكلف	المادة العملية	اسم التدريس ي المكلف	المادة النظرية	التاريخ	الاسب وع
م.م شيماء نادم	Routs of drug administration	م.م أسماء محمد	Introduction to CNS pharmacology	25/9	1
م.م شيماء نادم	Absorption and excretion	م.م أسماء محمد	Anxiolytic and hypnotic	27/9 1/10	2
م.م ازهار يونس	Barbiturates	م.م أسماء محمد	Treatment of neurogenerative diseases	4/10	3
م.م ازهار يونس	Effect of parasympathetic s on glands	م.م ميساء بناي	Opioid analgesics	8/10	4
	Collective exam	م.م ميساء بناي	CNS stimulants	9/10 to 11/10	5
	غياب الطلبة قبل امتحان المد	م.م ميساء بناي	Antiepileptic drug	15/10	6
	Mid exam		Mid exam	4/11 to 20/11	7
م.م علي محمد جاسم	Drug and human eye	م.م دكرم الله شاكر	Antidepressant	22/11	8
م.م علي محمد جاسم	Effects of drugs on IOP	م.م دكرم الله شاكر	Antipsychotics	19/11	9

م. م علي محمد جاسم	Evaluation of NSAIDs	ا. م. د احمد هامش	Diuretics	9/10	10
م. د شيماء محمد	Evaluation of antiparkinsonian	ا. م. د احمد هامش	Antihypertensive drugs	16/10	11
م. د ميساء بناي	Evaluation of opioids	ا. م. د احمد هامش	Drugs for heart failure	23/10	12
		م. د ميساء بناي	Antihyperlipidemic	24/11	13
		م. د ميساء بناي	Gastrointestinal and antiemetic drugs	27/11	14
		م. د أسماء محمد	Drugs acting on the respiratory system	8/1 2	15
		م. د أسماء محمد	Local anesthesia	10/12	16
		ا. م. د اسيا سلمان	General anesthesia	11/12	17
		ا. م. د اسيا سلمان	Antiarrhythmic	11/12	18
		ا. م. د اسيا سلمان	Anti-Anginal	13/12	19
		ا. م. د اسيا سلمان	Drugs effecting the blood	13/12	20

11. Course Evaluation

The distribution is as follows: 40 marks for the mid-term exams, divided into 20 theoretical and 20 marks for practical, and 60 marks for the final exam.

12. Learning and Teaching Resources

Lippincott pharmacology 7th edition, 2019

Katzung basic and clinical pharmacology 12th edition, 2012

4. The college seeks to conclude scientific and cultural cooperation agreements with corresponding colleges and corresponding departments in different colleges to achieve best practices in the fields of education and pharmaceutical sciences.

5. Focusing on the educational and moral aspects of all its members and spreading the spirit of dedication, tolerance, commitment and work to serve the nation.

6. Paying attention to intellectual and cultural construction through openness to the experiences of other countries in the fields of pharmacy and medical sciences.

Focusing on the educational and moral aspect of the student and instilling a spirit of dedication, tolerance and commitment.

4. Program Accreditation

no

5. Other external influences

no

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements				
College Requirements	yes			
Department Requirements	yes			
Summer Training	yes			

Other				
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* This can include notes whether the course is basic or optional.

7. Program Description				
Year/Level	Course Code	Course Name	Credit Hours	
2024–2025 5th stage		Clinical toxicology	theoretical	practical
			2 hr.	2 hr.

8. Expected learning outcomes of the program	
Knowledge	
<p>The aim of this topic is to understand the effectiveness, safety and effectiveness of drugs in humans, discover new lead compounds and understand the mechanisms of action of drugs, in addition to their negative impact, in various human systems. The course will cover drugs used to treat microbial infections</p>	
Skills	
<p>Gaining sufficient information about the various medicines and toxins that treat diseases or that affect the human body, diseases that can affect humans, calculating the correct doses to avoid symptoms and possible interactions, and methods of treating various cases of poisoning.</p>	
Ethics	

Developing students' abilities to diagnose diseases and treatment methods	

9. Teaching and Learning Strategies
1- Explaining the scientific material by giving theoretical scientific lectures on medicines and medical drugs that can be used to treat various diseases.

10. Evaluation methods
Daily, monthly, mid-semester, and end-of-semester exams

11. Faculty						
Faculty Members						
Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Prof.	Pharmacy	Pharmacology and toxicology			yes	
Assistant Prof.	Pharmacy	Pharmacology			yes	
Assistant Prof.	Pharmacy	Pharmacology and toxicology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	
Lecturer Dr.	Pharmacy	Pharmacology			yes	

Professional Development

Mentoring new faculty members

Professional development of faculty members

12. Acceptance Criterion

13. The most important sources of information about the program
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Gossal TA, Bricker TD: Principles of clinical toxicology Viccellio P: Handbook of medicinal toxicology, latest edition

14. Program Development Plan

A comprehensive understanding of normal body function, allowing more effective treatment of abnormal or pathological conditions.
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The study of physiology is of central importance in medicine and related health sciences, because it supports advances in our understanding disease and our ability to treat it more effectively.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
2023-2024 fifth stage		Clinical toxicology	basic	•				•				•			

- Please tick the boxes corresponding to the individual program learning outcomes under evaluation.

Course Description Form

1. Course Name:	
Clinical toxicology	
2. Course Code:	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
2025-8-18	
5. Available Attendance Forms:	
Attendance system	
6. Number of Credit Hours (Total) / Number of Units (Total)	
60 semester hours. 2 hours per week theoretical and 2 hours practical, for 15 weeks	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Dr. Usama Aube Jacob Email:	
8. Course Objectives	
<p>The primary goal is to explain the basic mechanisms which... How they work in an organism and how they interact. provides A comprehensive understanding of the body's normal function, enabling more Effective treatment for abnormal or pathological conditions The study of physiology is of central importance in medicine and Health sciences are relevant, because they support advances in our understanding disease and our ability to treat it more effectively</p>	<ul style="list-style-type: none"> • • •
9. Teaching and Learning Strategies	
10. Course Structure	

	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
اسم التدريسي المكلف	المادة العملية	المادة النظرية	التاريخ	الاسم	
ا.د. اسامة أيوب يعقوب	Lab principles of toxicity testing م.م. حسن محمود حميد	Intial evaluation and management of poisoned patients lecure	21/09 to 22/09	1	
ا.د. اسامة أيوب يعقوب	OTC drugs toxicity م.م. حسن محمود حميد	Drug toxicity OTC	24/09 to 28/09	2	
ا.د. اسامة أيوب يعقوب	Urine analysis of toxins م. رسول جلوب هليل	Drug toxicity NSAIDs and vitamins	01/10 to 05/10	3	
م.د وليد خالد غانم	Cardiac glycosides م.د. رونق عادل ياسين	beta blockers, Calcium channel blocker	8/10 to 12/10	4	
م.د وليد خالد غانم	Toxicity with food and dietary supplements م. زينب نجم عبد النبي	Digoxin, ACE inhibitors, Antiarrhythmic agents	15/10 to 19/10	5	
		Mid exam	04/11 to 16/11	6-7	
ا.م.د منال عبد الخالق ابراهيم	Toxicity of antiparkinsonian drugs م. زينب نجم عبد النبي	Hydrocarbon Toxicity Hallucination Toxicity	19/11 to 23/11	8	
ا.م.د منال عبد الخالق ابراهيم	Evaluation of drug toxicity on human م.م حسين محمد عيود	Cocaine Toxicity Antiseptic and Disinfectant Toxicity	26/11 to 30/11	9	
ا.م.د منال عبد الخالق ابراهيم	Toxicity of heavy metals م. رسول جلوب هليل	Camphor and caustic Toxicity	03/12 to 07/12	10	
ا.م.د. زينب هارون احمد	Toxicity of heavy metals م. رسول جلوب هليل	CNS stimulants toxicity	10/12 to 14/11	11	
ا.م.د. زينب هارون احمد		CNS depreassents and anticholinergic agents toxicity	17/12 to 21/12	12	
ا.د. اسامة أيوب يعقوب		Plant toxicity	17/12 to 21/12	13	
				14	
				15	

11. Course Evaluation	
The distribution is as follows: 40 marks for the mid-term exams, divided into 20 theoretical and 20 marks for practical, and 60 marks for the final exam.	
12. Learning and Teaching Resources	
Gossal TA, Bricker TD: Principles of clinical toxicology	
Viccellio P: Handbook of medicinal toxicology, latest edition	
Google scholar	