Academic Program Description

The college is keen to provide high-quality education and training using the latest methods and in a multidisciplinary manner to prepare pharmacists and pharmaceutical scientists who have high scientific and professional capabilities and skills to be leaders in their specializations and able to spread health culture.

Providing the best health care in the community and developing scientific research for the welfare of society and human health.The academic program focuses on developing intellectual, practical, clinical, applied and behavioral skills within the study stages.
different to ensure a high level of
competence for graduates.

Ministry of Higher Education and Scientific Research	1. Educational institution
University of Maysan - College of Pharmacy	2. Scientific Department / Center
Bachelor of Pharmacy	3. Name of the academic program or Professio nal
Bachelor	4. Name of the final certificate
Semester system	5. Academic system: Annual/Courses/Oth er
There is no	.6 Accredited Accreditation Program
Practical part- Desk research - Extracurricular activities - Volunteer activities - Other	.7 Other external influences
2024\4\25	.8 Date of preparation of the description

9. Objectives of the Academic Program

The program is for five years.:

The first stage

The academic program in the first stage focuses on intellectual skills and enhancing knowledge in basic sciences leading to specialization.

Pharmacy.

The first stage program also includes the development of 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.

The second stage

The academic program for the second stage includes the completion of the basic skills of basic sciences and an introduction to specialized sciences in the field of pharmacy, as it focuses on the properties of the substance and its physical and chemical behavior, which represents a basis for understanding the effect of these properties on the mechanism of drug action and its toxicity and the effect of these properties on the formulation of drug formulas in pharmaceutical doses.In addition, the academic program provides an introduction to the body's normal functioning through the body's physiology and the functioning of the immune system.

The third stage

The academic program in the third stage represents the first level of specialization in pharmaceutical sciences through linking the chemistry of drugs, their natural and unnatural sources, their mechanism of action, basic drug doses and their properties..

Stage Four The academic program in the fourth stage focuses on the pharmacist's skills in dealing with patients in community and hospital pharmacies.. These skills include intellectual, practical, behavioral and ethical skills.
The fifth stage The academic program in the fifth and final stage is based on incorporating the intellectual skills presented in previous years. Behavioral and cognitive in the context of clinical application, as well as an advanced level of knowledge of advanced pharmaceutical sciences. Related to pharmaceutical chemistry and pharmaceutical monitoring

.11	10. Required program outcomes, teaching, learning and assessment methods.
	A- Cognitive objectives 1. Identify the normal functions of the body and the changes in these functions that accompany illness. 2. Identify the drug as a chemical compound and the consequences of its properties.A From the effectiveness of the drug and its mechanics His workA Methods of its formulation and side effects 3. Identify the types of drug doses and how to determine the appropriate drug formula for the drug, methods of manufacturing it, and evaluating it in terms of effectiveness, therapeutic effect, negative effect, stability, and calculation. Correct doses 4. Identify the different treatments and how to choose the appropriate treatment for the medical condition and its effect. The required treatment 5. Identify the concepts of human rights and citizenship. 6. Identify the principles of medical statistics and medical physics.
	for-Program specific skill objectives: 1.The student acquires the skill of dealing with laboratory equipment. 2.The student acquires the skill of self-learning. 3 . . The pharmacist can provide the highest level of health care to patients, whether in institutions or hospitals. Health and Society 4.The pharmacist should be able to diagnose therapeutic errors in terms of the appropriateness of treatment for the medical condition. There are no drug interactions or interactions with the patient's general health condition. 5.The pharmacist is able to deal with patients at different intellectual, scientific and social levels. Psychological and health 6.The pharmacist can communicate with different medical

	staff such as doctors and nurses. And others to correct therapeutic errors, if any, and provide based therapeutic recommendations. On health grounds 7.The pharmacist is able to apply the basic concepts of drug chemistry and its mechanism of action.A In explaining the interventions Pharmaceutical and pharmaceutical advice to medical staff and the community 8.The pharmacist is able to play the role of educating the patient on the aspects of using the drug dose. Different and how to store medicine.
	G- Emotional and value goals: 1. Dealing with patients with pharmacy ethics 2.Making the safety and security of the patient and the community the first goal of the pharmacy profession 3 . Dealing with other colleagues in a team spirit within the healthcare team in the work environment

Essential or optional?	Credit hours		Course Name	Academic stage
Basic	Practical	Theoretical		
Basic	2	2	Biology	First stage, first semester
Basic	----	2	Principles of Pharmacy Practice	
Basic	2	3	Analytical chemistry	
Basic	----	1	Medical terms	
Basic	----	3	Mathematics and biostatistics	
Basic	2	----	Calculators	
Basic	----	1	English language	

Basic	2	1	Human anatomy	First stage, second semester
Basic	2	2	Pharmaceutical accounts	
Basic	2	2	Medical Physics	
Basic	2	3	Organic chemistryI	
Basic	2	2	Histology	
Basic	----	1	Human rights	
Basic	2	----	Calculators	
Basic	----	1	English language	
Basic	2	3	Organic chemistryII	Stage Two Chapter One
Basic	2	3	MicrobiologyI	
Basic	2	3	Physical pharmacyI	
Basic	2	3	Functional science of organsI	
Basic	---	1	Democracy	
Basic	2	----	Calculators	
Basic	----	1	English language	
Basic	2	1	Biosafety and Security	
Basic	2	2	Organic chemistryIII	Stage Two Chapter Two
Basic	2	3	MicrobiologyII	
Basic	2	3	Physical pharmacyII	
Basic	2	3	Functional science of organsII	
Basic	2	3	Medicinal plants and drugsI	
Basic	2	----	Calculators	

Basic	**----**	**1**	**English language**
Basic	**-----**	**2**	**Arabic language**

Basic	2	2	Inorganic pharmaceutical chemistry	Stage Three, Chapter One
Basic	2	2	Medicinal plants and drugsII	
Basic	2	3	Pharmaceutical TechnologyI	
Basic	2	3	BiochemistryI	
Basic	2	3	Pathophysiology	
Basic	----	1	English language	
Basic	2	3	Pharmaceutical organic chemistryI	Stage Three Chapter Two
Basic	----	3	PharmacologyI	
Basic	2	3	Pharmaceutical TechnologyII	
Basic	2	3	BiochemistryII	
Basic	2	2	Medicinal plants and drugsIII	
Basic	----	1	Pharmacy Ethics	
Basic	----	1	English language	
Basic	2	3	PharmacologyII	Stage Four, First Semester
Basic	2	3	Pharmaceutical organic chemistryII	
Basic	2	2	Clinical PharmacyI	
Basic	2	2	Life Pharmacy	
Basic	----	2	Public health	
Basic	----	1	English language	
Basic	----	2	PharmacologyIII	Stage Four, Chapter Two
Basic	2	3	Pharmaceutical organic chemistryIII	
Basic	2	2	Clinical PharmacyII	
Basic	2	2	General	

			Toxicology
Basic	**2**	**3**	**Industrial Pharmacyl**
Basic	**----**	**2**	**Communication skills**
Basic	**----**	**1**	**English language**

Basic	----	2	Pharmaceutical organic chemistryIV	
Basic	2	3	Industrial PharmacyII	Fifth stage, first semester
Basic	-----	3	Applied treatmentsI	
Basic	2	3	Clinical chemistry	
Basic	4	----	Clinical laboratory training	
Basic	2	2	Clinical Toxicology	
Basic	----	2	Pharmacoeconomics	Stage Five Chapter Two
Basic	----	2	Applied treatmentsII	
Basic	2	2	Drug monitoring	
Basic	2	3	Advanced pharmaceutical analysis	
Basic	4	----	Hospital training	
Basic	----	2	Drug form design	
Basic	----	1	Pharmaceutical Biotechnology	

13.Planning for personal development
The academic program includes workshops, seminars and discussion groups that focus on aspects of general community behavior and pharmaceutical behavior in general. Special 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 results.
.14 Acceptance Criteria

Academic average and physical health as approved by the Ministry of Higher Education and Scientific Research
15. The most important sources of information about the program

Website of the Faculty of Pharmacy, University ofMaysan In Arabic and English
University websiteMaysan city
Website of the Ministry of Higher Education
and Scientific Research College of
Pharmacy, University of Baghdad page on
social networking sites
Plaques installed in the college corridors

/			/			/			/				/	/				/		/		Clinical Toxicology
/	/			/	/	/			/				/	/		/						Pharmacoeconomics
	/				/	/			/			/	/	/				/				Applied treatmentsII
/				/	/	/			/			/	/	/					/			Drug monitoring
/	/				/	/	/		/				/	/	/					/		Advanced pharmaceutical analysis
/	/				/	/			/	/			/	/				/				Hospital training

Course Description Form

Course Description

This course description provides a brief summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether: He had made the most of the learning opportunities available.It is necessary to link it to the program description.

Ministry of Higher Education and Scientific Research	1. Educational institution
College of Pharmacy- Pharmaceutics Branch	2. Scientific Department / Center
Pharmacy and Pharmacy Accounts Physical Pharmacy Technologi cal Pharmacy Life PharmacyIndustrial Pharmacy Industrial Pharmacy\ Design of drug doses \ Biopharmacy	.3 Course Name/Code
The first stageStage 2 Stage 3 Stage 4 Stage 5	4. Available forms of attendance
Chapter One and Two	.5 Semester/Year
43 hours for all stages and lessons (theoretical and	6. Number of study hours (total)

practical)	
8. Course Objectives	

(Pharmacy and pharmaceutical accounts): He studies the basics of pharmacy and its history, in addition to... Teaching measurement methods Weights and volumes2- It studies the basics of drug composition in different doses.
Physical Pharmacy(In which you study the physical, mathematical, and chemical basis of everything) Physical and chemical phenomena of matter in its solid, liquid and gaseous states.
(Technological Pharmacy): In these two chapters, all the basics of making pharmaceutical compounds such as powders, syrups, and pills are studied. OintmentsEtc., and methods of preparing, stabilizing and packaging them.
(Biopharmacy) F1: Where the student studies the methods of absorbing drugs of all types and their pharmaceutical doses in addition to the mechanism of their absorption. And its spread, metabolism and excretion inside and outside the body. (Industrial Pharmacy) F2: Where the student studies the special means of pharmaceutical industry in factories such as mixing, blending and packaging.
(Industrial Pharmacy) F1: The student studies how to manufacture complete pharmaceuticals for different pharmaceutical doses. (Pharmaceutical Dosage Design) F2: The student studies how to design pharmaceutical doses in their various forms and with different Ways to deliver it inside the body. (Biopharmacy) F2: The student studies the pharmaceutical doses of hormones and proteins, and the methods of sterilizing and preserving them.

9. Course outcomes, teaching, learning and assessment methods.
A- Cognitive objectives A1- Identifying all types and forms of medicines. A-2 Methods of preparing active ingredients in the form of complete pharmaceutical doses for humans and animals. A-3 Study of the stability of the doses prepared in different forms. A-4 Study the drug effect, its effectiveness and mechanism of action inside the body.

for- Course specific skill objectives for1- Gaining skill in installation and preparation methods. for2- Acquiring the skill of knowing how to maintain its stability for the longest possible period. for3- Gaining the skill to diagnose separate vehicles.
Teaching and learning methods
1. Theoretical lectures .2 Blackboard

3. Projector 4. PowerPoint presentation 5. Educational laboratories 6. Electronic lectures 7. Scientific and practical research .8 Library research
Evaluation methods
Midterm and final exams. Oral exams and laboratory research. Visit pharmaceutical factories. Use of scientific equipment.
G- Emotional and value goals G-1 Evaluation of research using computer. G2- Identify drug doses. G3- Using modern laboratory equipment. G4- Using modern methods to present lectures in the form of slides. G-5 Video clips and diagrams. G-6 Visit pharmaceutical factories if possible and submit scientific reports. G-7 Assigning students homework.
Teaching and learning methods
Seminars- Daily assignments - Written exams
Evaluation methods
Oral and written examinations and report writing on practical trades.

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

D-1 Conducting scientific experiments.

D-2 Acquiring skills in using the computer.

D-3 Granting confidence to the student through conducting and presenting scientific research.

D-4 Acquiring leadership skills

10. Course Structure					
Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week
Oral examAnd my editorial	Lectures	Introduction to Pharmacy		3	1
Oral exam And my editorial	Lectures	Physical Pharmacy		12	2-4
Oral exam And my editorial	Lectures	Pharmacology and composition methods Medicines and their preparation		3	5
Oral examAnd my editorial	Lectures	Drug stability		12	6-10
Oral exam And my editorial	Lectures	Complete pharmaceutical manufacturing In pharmaceutical factories		15	11-15

11. Infrastructure

• Sprowls' American Pharmacy: An Introduction to Pharmaceutical Techniques and Dosage Forms. • Martin's Physical Pharmacy and Pharmaceutical Sciences. • Ansel's Pharmaceutical Dosage Forms and Drugs Delivery Systems. • Applied biopharmaceutics and pharmacokinetics by Leon Shargel. • The Theory and Practice of Industrial Pharmacy by Herbert Lieberman and Leon Lachman	-1 Required textbooks
• Encyclopedia of Pharmaceutical Technology. • Physicochemical Principles of Pharmacy by	-2 Main references (sources)

Alexander T. Florence. Aulton's Pharmaceutics: The Design and Manufacture of Medicines. ●	
British pharmacopoeia ● United State Pharmacopoeia ● European Pharmacopeia ●	(1) Recommended books and references (journals) Scientific, reports,(.
The Internet and PowerPoint	(2) Electronic references, websites, etc.

12. Curriculum Development Plan

Course Description
Form

Course Description

This course description provides a brief summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether: He had made the most of the learning opportunities available.It is necessary to link it to the program description.

Ministry of Higher Education and Scientific Research	1. Educational institution
College of Pharmacy- Drugs branch	2. Scientific Department / Center
Drugs and medicinal plants	.3 Name
Daily	4. Available forms of attendance
My chapter	.5 Semester/Year
4 hours per week/third stage and 5 hours per week for the second stage and 4 Hours per week/ Phase III Pharma D	6. Number of study hours (total)

8. Course Objectives
Study the meaning of drugs and medicinal plants- Diagnosis of medicinal plants - Phytochemistry - Methods of extraction, isolation and diagnosis Active compounds inside the plant

10. Course outcomes, teaching, learning and assessment methods.

A- Cognitive objectives A-1: Knowledge of plant preparations A2- Study of medicinal plants and methods of extracting them. A-3 The possibility of industrially propagating plants to increase the percentage of active ingredients.
for- Course specific skill objectives: B1 - Acquiring skills in extraction methods. for2- Gaining skill in isolating active ingredients for3- Acquiring skills in Diagnose it
Teaching and learning methods
-1 Theoretical lectures -2 Educational laboratories 3-Scientific reports-4 Library research -5 E-learning
Evaluation methods
Midterm and final exams, oral exams and laboratory research Visit the Botanical Garden Use of scientific equipment
G- Emotional and value-based objectives C-1 Presenting research using the computer G2- Identifying medicinal plants. 3- Using modern laboratory equipment.
Teaching and learning methods
Seminars- Daily assignments - Written exams
Evaluation methods
Oral and written exams and writing reports on practical experiences

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

D1- Conducting scientific experimentsD2- Acquiring skills in using the computer

D3- Granting confidence to the student through presenting scientific research.

D-4 Guidance to know the reliable websites that help the student during his years of study.

11. Course structure for the second stage

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week
Oral exam and Editorial	Lectures	Introduction to Plant Identification		3	1
Oral exam and Editorial	Lectures	Phytochemistry		9	2-4
Oral exam and Editorial	Lectures	Active Vehicles		3	5
Oral exam and Editorial	Lectures	Extraction methods		15	6-10
Oral exam and Editorial	Lectures	Separation and analysis of compounds Effectiveness		15	11-15

12. Infrastructure

Pharmacognosy by Teyler	1- Required textbooks
Pharmacognosy by trease and evance	2- Main references (sources)
Phytochemistry and pharmacognosy	ecommended books and references) Scientific journals, reports,

EncyclopediaElectronic Uptodate -ACS Publications. -National Institute of Health (NIH). -American Society of Pharmacognosy.	B - Electronic references, websites

13. Curriculum Development Plan: Expansion in the Field of E-Learning

Course Description
Form

Course Description

This course description provides a brief summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether: He had made the most of the learning opportunities available.It is necessary to link it to the program description.

College of Pharmacy	1. Educational institution
Drugs and Poisons Department	2. Scientific Department / Center
	.3 Course Name/Code
Theoretical and practical	4. Available forms of attendance
Chapter One/ First stage, first and second semesters / Second stage, first semester / Third stage Chapter One and Two/ The fourth stage Chapter One/ Fifth stage	.5 Semester/Year
Total number of study hours180 distributed over 10 courses	6. Number of study hours (total)

8. Course Objectives

The college prepares the student through the Department of Pharmacology and Toxicology to study the various functions of the body, as well as the types of drugs, their uses, disadvantages of use, and their interactions with other drugs or with other functions of the body, in addition to studying toxins and their effects on the body, their types, methods of prevention, environmental pollution, and their effects on human health.

10. Course outcomes, teaching, learning and assessment methods.

A- Cognitive objectives A-1 Study the different organs and functions of the body. A2- Study of different medical terms.A3- Study of various medicines, their uses and harms. A-4 Study of the types of toxins, their sources, and prevention from them.
for- Course specific skill objectives. B1 - Practical applications in special laboratories for2- Practical courses in private and governmental pharmacies. 3- Practical courses in laboratories in hospitals.
Teaching and learning methods
Using lectures by talking to students, using PowerPoint slides, the blackboard, and special educational laboratories
Evaluation methods
Theoretical and practical exams, in addition to classroom activities and scientific seminars.
G- Affective and value-based objectives C-1 Increasing self-confidence through learning G2- The student's belief in providing service to society in the future increases.
Teaching and learning methods
By providing theoretical, practical, and applied lectures, discussions, and assigning groups Small with D ringshead
Evaluation methods
Theoretical and practical exams, in addition to classroom activities and scientific seminars.
D- General and transferable skills (other skills related to employability and personal development). D1- Presenting research at conferences D-2 Graduation projectsD-3 Sports and artistic participations

11. Course Structure

Evaluation method	Method Education	Unit Name/or topic	Learning Outcomes Required	Hours	The week
Theoretical exams	Theoretical	Terms Medical	Learn the terms Medical	One hour a week	
Theory and practical exams Practical	Theoretical and practical	Physiotherapy	Knowing the functions of the body	Three hours a week	
Theory and practical exams Practical	Theoretical And my work	Medicines	Knowing the types of medicines	Three hours a week	
Theory and practical exams Practical	Theoretical And my work	Poisons	Knowing the types of toxins	2 hours a week	

12. Infrastructure

Vander_sHuman Physiology, Lippencott's pharmacology, Goldfrank's toxicology Emergencies, Casarett and Doull Toxicology	1- Required textbooks
Methodological books	2- Main references (sources)
Research or medical cases for study from hospitals	ecommended books and references) Scientific journals, reports,
Seminars and graduation projects rely on the Internet as sources of research.	B - Electronic references, websites....

.13 Curriculum Development Plan

By adding new topics to keep pace with the scientific developments in the fields of chemistry, medicine and poisoning.

Course Description
Form

Course Description

This course description provides a brief summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether:
He had made the most of the learning opportunities available.It is necessary to link it to the program description.

College of Pharmacy	1. Educational institution
Drugs and Poisons Department	2. Scientific Department / Center
	.3 Course Name/Code
Theoretical and practical	4. Available forms of attendance
Chapter One/ First stage, first and second semesters / Second stage, first semester / Third stage Chapter One and Two/ The fourth stage Chapter One/ Fifth stage	.5 Semester/Year
Total number of study hours180 distributed over 10 courses	6. Number of study hours (total)

8. Course Objectives

The college prepares the student through the Department of Pharmacology and Toxicology to study the various functions of the body, as well as the types of drugs, their uses, disadvantages of use, and their interactions with other drugs or with other functions of the body, in addition to studying toxins and their effects on the body, their types, methods of prevention, environmental pollution, and their effects on human health.

10. Course outcomes, teaching, learning and assessment methods.

A- Cognitive objectives A-1 Study the different organs and functions of the body. A2- Study of different medical terms.A3- Study of various medicines, their uses and harms. A-4 Study of the types of toxins, their sources, and prevention from them.
for- Course specific skill objectives. B1 - Practical applications in special laboratories for2- Practical courses in private and governmental pharmacies. 3- Practical courses in laboratories in hospitals.
Teaching and learning methods
Using lectures by talking to students, using PowerPoint slides, the blackboard, and special educational laboratories
Evaluation methods
Theoretical and practical exams, in addition to classroom activities and scientific seminars.
G- Affective and value-based objectives C-1 Increasing self-confidence through learning G2- The student's belief in providing service to society in the future increases. -
Teaching and learning methods
By providing theoretical, practical and applied lectures, discussions and assigning small groups to present study sessions.
Evaluation methods
Theoretical and practical exams, in addition to classroom activities and scientific seminars.
D- General and transferable skills (other skills related to employability and personal development). D1- Presenting research at conferences D-2 Graduation projectsD-3 Sports and artistic participations

11. Course Structure

Evaluation method	Method Education	Unit Name/or topic	Learning Outcomes Required	Hours	The week
Theoretical exams	Theoretical	Terms Medical	Learn the terms Medical	One hour a week	
Theory and practical exams Practical	Theoretical and practical	Physiotherapy	Knowing the functions of the body	Three hours a week	
Theory and practical exams Practical	Theoretical And my work	Medicines	Knowing the types of medicines	Three hours a week	
Theory and practical exams Practical	Theoretical And my work	Poisons	Knowing the types of toxins	2 hours a week	

12. Infrastructure

Vander_sHuman Physiology, Lippencott's pharmacology, Goldfrank's toxicology Emergencies, Casarett and Doull Toxicology	1- Required textbooks
Methodological books	2- Main references (sources)
Research or medical cases for study from hospitals	ecommended books and references) Scientific journals, reports,
Seminars and graduation projects rely on the Internet as sources of research.	B - Electronic references, websites....

.13 Curriculum Development Plan

By adding new topics to keep pace with the scientific developments in the fields of chemistry, medicine and poisoning.

Course Description Form

Course Description

This course description provides a brief summary of the main features 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 is necessary to link it to the description.
The program.

Ministry of Higher Education and Scientific Research	**Educational Institution**
Pharmacy- Department of Pharmaceutical Chemistry	**Scientific name/ The Center**
M **Analytical**	**/ Course Code**
The first	**All available attendance**
The first	**Pray/ year**
hour(Theoretical and practical)	**Number of study hours(Total)**
Course Objectives	

Laying the correct foundations and increasing the student's knowledge of pharmaceutical chemicals as they have an impact on the study of Pharmacy.

The student will learn how to detect organic and inorganic compounds in various material forms.
Chemicals and pharmaceutical products.

Providing students with scientific experience in the field of analytical chemistry in various ways from neutralization reactions and the effect of acidity on various reactions of simple and complex compounds and qualitative analysis and its importance in various fields of life and other sciences and detection of compounds in a number of ways using precipitation titration
Complex Formation and Redox Titration.

Developing students' ability to handle chemicals and glassware in a safe manner..

10. Course outcomes, teaching, learning and assessment methods.

A- Cognitive

objectives A-1: Identify the basic principles of

analytical chemistry in its various aspects.

A-2 Correct and accurate handling of chemicals.

A-3 Conducting practical experiments related to analytical

chemistry to detect different elements and compounds. A-4

Developing the student's ability to use glass tools, the benefit of

each tool, the method of using it, and teaching
The student

On the use of correction tools and basic principles

of correction techniqueA-5 Study of different methods of

chemical reactions such as neutralization, oxidation, reduction,

precipitation and formation.

Complexities.

for- Course specific skill objectives: B-1 Acquire the skill of diagnosing the type of material that can be obtained when mixed with other materials. Chemical Different. for2- Acquiring the skill of dealing with flammable chemicals such as acids and bases. for3- Acquiring the skill of writing scientific reports. for-4 Increase the student's ability to work individually or in a group.
Teaching and learning methods
Theoretical lectures in the classroom1- Educational laboratories2- onducting scientific research3- -4 Various library research
Evaluation methods
-1 Oral discussions in the hall and written exams -2 Mid-term and final exams -3 Laboratory reports -4 Weekly or biweekly laboratory exams

G- Emotional and value goals

G1- Creating a welcoming atmosphere for students so that there is positive communication between students and professors. C-2 Spreading a spirit of enthusiasm among students to participate in scientific discussions and encouraging them to ask questions.

Objectivity.

G3- Using modern methods in presenting lectures.

G4- Enhancing students' ability to work as a research team.

Teaching and learning methods

1- Teaching and giving lectures in person or electronically.

-2 Weekly seminars, meetings and homework.

-3 Scientific research that serves society.

4-Explanatory and informative videos.

-5 Practical experiments

Evaluation methods

-1 Daily oral and written exams -2 Mid-term and final exams

3- Practical laboratory examinations 4-

Scientific

laboratory

reports

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

D1- Acquiring the skill of conducting and delivering scientific lectures. 2- Increasing the skill of benefiting from methodological books and modern teaching methods. D-3 Acquiring skills in scientific research work D-4 Acquiring skills in using various computer programs

11. Course Structure

Evaluation method	Teaching method	Unit Name/or topic	OutputsLearning Required	Hours	The week
Oral and written examination	Lectures	Review of the concepts adopted in the analysis Chemist		4	1
Oral and written examination	Lectures	Evaluation of analysis methods and study introduction Analyses based on Gravity		10	2-5

Oral and written examination	Lectures	Study the extent of application of analyses based on Gravity		4	6
Oral and written examination	Lectures	Study of volume-based analyses		5	7-8

Oral and written examination	Lectures	Buffer solutions and standard study of equilibrium in solutions Simple		3	9
Oral and written examination	Lectures	Standard study of equilibrium in complex and precipitated solutions		5	10-11
Oral and written examination	Lectures	Study of current accounts Solutions		4	12
Oral and written examination	Lectures	Equilibrium in oxidation-reduction reactions and study of standard theories of oxidation-reduction reactions		6	13-14
Oral and written examination	Lectures	Study of analysis methods Spectral		4	15

Infrastructure	
amentals of Analytical Chemistry ook and West.	Required Course
amentals of Analytical Chemistry ook and West.	Return to the main page(Sources)
	And the recommended references)Scientific journals, reports...,

	Check the electronic, websites....

Curriculum development
ScoopBook of 31 Chapter 31 Chapter Introduction to Analytical Separations… in Skoog

Course Description
Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. The program.

For Higher Education and Scientific Research	For educational institution
Pharmacy-Branch of Pharmaceutical Chemistry	Scientific name/ The Center
Membership1	/ Course Code
The first	All available attendance

The second	Pray/ year
Aaaa	D Study hours(Total)
	Date this description was prepared
Course Objectives	
Teaching the basics of organic chemistry, which examines the study of chemical compounds And discovering vehicles Multiple properties and applications that contribute fundamentally to the development of various sciences, industries and technology.. Teaching the student about organic compounds in the simplest form, which is that organic compounds contain two atoms. N and hydrogen such as alkanes, alkenes and alkynes and the difference between them in terms of whether they are saturated or unsaturated compounds Their different activities and chemical reactions.	

9. Course outcomes, teaching, learning and assessment methods.

A- Cognitive

objectives A-1 Study other organic compounds that contain an

oxygen atom in addition to carbon.

Hydrogen, such as alcohols, ethers, cyclic ethers, and their various chemical reactions..

A2- Study of the stereochemistry of organic compounds.

A3- Study of alkyl halides, their reactions and the mechanics of their reactions.

A-4 Introduction to simple cyclic compounds.

A5- Study the types of glass and some of the devices that will be dealt with throughout the years of study.

A-6 Study and understand the methods

of analyzing elements in organic compounds. A-7 Study the

various purification methods for organic compounds such as

filtration, extraction and recycling.
Crystal.

for- Course specific skill objectives.

for1- Obtaining knowledge of the basic principles of organic chemistry

for2- Study the methods of

chemical reactions. 3- Understand the types of

reactions that can occur with chemicals when they are

mixed.

for4- Acquiring the skill of dealing with different chemicals.

for5- Acquiring the skill of writing scientific reports

Teaching and learning methods

Theoretical lectures in the classroom1-

Educational laboratories2-

Conducting scientific research3-

-4 Various library researches

Evaluation methods
-1 Oral discussions in the hall and written exams -2 Mid-term and final exams -3 Laboratory reports -4 Weekly or biweekly laboratory exams
G- Emotional and value goals G1- Creating a welcoming atmosphere for the student so that there is some kind of interaction between the student and the subject teacher. 2- Spreading a spirit of enthusiasm among the students to participate in scientific discussions and ask objective questions. And praise them c3- Using modern methods to present lectures in the form of slides. 4- Enhancing students' ability to work as a research team.
Teaching and learning methods
-1 Teaching and giving lectures in person or electronically. -2 Weekly seminars, meetings and homework. -3 Scientific research that serves society. 4-Explanatory and informative videos.
Evaluation methods

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

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

D1- Acquiring the skill of conducting and delivering scientific lectures. 2- Acquiring the skill of using books and modern teaching aids.
D-3 Acquiring skills in scientific research work D-4 Acquiring skills in using various computer programs
D-5 Boosting self-confidence

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week

Oral and written examination	Lectures	Introduction		3	1
Oral exam	Lectures	The cans		6	2-3

And my editorial		Methane			
Oral and written examination	Lectures	Alkenes1 and 2		5	4-5
Oral and written examination	Lectures	Alkynes and The debtors		5	6-7
Oral and written examination	Lectures	Stereochemistry 2 and 1		8	8-9
Oral and written examination	Lectures	Alcohols and ethers		8	10-11
Oral and written examination	Lectures	Alkylate halide		6	12-13
Oral and written examination	Lectures	Cycloalkenes		4	14-15

Infrastructure	
nic Chemistry by Robert T. Morrison and RT N. Boyd. nic Chemistry by McCurry; 5th ed. ason learning; CA,USA; 2000.	b Required Course

nic Chemistry by Robert T. Morrison and RT N. Boyd. nic Chemistry by McCurry; 5th ed. ason learning; CA,USA; 2000	Return to the main page(Sources)
	he recommended references) Scientific, reports,
	Check the electronic, websites

Curriculum Development Plan
Different rings and their formations Different cycloalkanes and their conformations

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. The program.

For Higher Education and Scientific Research	For educational institution
Pharmacy-Branch of Pharmaceutical Chemistry	Scientific name/ The Center
Membership2	/ Course Code
Second	All available attendance
The first	Pray/ year
Aaaa	O Study hours(Total)
	Date this description was prepared
Course Objectives	
sics of Organic Chemistry for some chemical groups that are considered the foundations of the study of pharmacy)such as aldehydes, ketones, carboxylic acids and their derivatives, amines, benzene its derivatives, phenols(And its properties, names, interactions, and methods of preparation. Methods for qualitative detection of organic compounds.	

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive objectives: A-1: Increase knowledge of the basic principles of organic chemistry. A-2 Study the methods of chemical reactions. A-3 Conduct practical experiments to detect different groups of chemical compounds. A-4 Proper handling of chemicals and glassware.
for- Course specific skill objectives. **Gaining the skill of how to detect and identify chemical compounds. B-2- Gaining the skill of how to write practical reports.**
Teaching and learning methods
1. Theoretical lectures. 2. Practical experiments. 3. Scientific research. 4. Methodological and supporting books. .5 Scientific discussions

and seminars
Evaluation methods

Mid-term and final exams. **2. Daily oral and written exams. 3. Practical laboratory exams.** **4. Laboratory reports**
G- Emotional and value-based objectives C-1: Enhancing the student's understanding by linking the theoretical aspect with the practical aspect, by conducting an examination and studying Properties Chemical and physical about chemical compounds **G2- Enhancing students' ability to think and analyze. 3- Enhancing students' ability to work as a research team.** **G4- Enhancing students' ability to ask objective questions and engage in scientific discussion.**
D- General and transferable skills (other skills related to employability and personal development). **ring the skill of dealing with chemicals and glass tools. D- Acquiring the skill of preparing reports and scientific research.** **D3- Gaining skill in chemical diagnosis methods for chemicals.** **D4- Acquiring skills in using books and modern teaching aids.**

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	OutputsLearning Required	Hours	The week
Oral and written examination	Lectures	Aromatic compounds		10	1-4

Oral and written examination	Lectures	Organic acids and its derivatives		12	5-7
Oral and written examination	Lectures	Secretaries1 and 2		5	8-9
Oral and written examination	Lectures	Aldehydes and ketones		12	10-13
Oral and written examination	Lectures	Phenols		5	14-15

Infrastructure	
nic Chemistry by Robert T. Morrison and Robert yd. Organic Chemistry by McCurry; 5th ed. ason learning; CA,USA; 2000	Required Course
nic Chemistry by Robert T. Morrison and Robert yd. Organic Chemistry by McCurry; 5th ed. ason learning; CA,USA; 2000	Return to the main page(Sources)
	Recommended scientific references,

	reports,
	Check the electronic, websites....

Curriculum Development Plan
Adding new topics, preparation methods and interactions to keep pace with scientific progress.

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. The program.

For Higher Education and Scientific Research	For educational institution
Pharmacy- Department of Pharmaceutical Chemistry	Scientific name/ The Center
Membership3	/ Course Code
Second	All available attendance
The second	Pray/ year
Aaaa	O Study hours(Total)

Course Objectives

Basics of heterocyclic ring chemistry for some nitrogen-containing rings ulfur and oxygen, which are considered the foundations of the study of pharmacy(For example, studying the compounds pyrrole, uran, thiophene, pyridine, quinoline, and Isoquinolines (and their properties and names) ts activities and methods of preparation.

Methods for the qualitative detection of compounds containing heterogeneous rings such as drugs and compounds ight.

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive objectives

A1- Increase knowledge of the basic principles of heterocyclic chemistry.

A2- Study the methods of chemical reactions of heterogeneous rings.

A-3 Conducting practical experiments to detect the elements that make up heterogeneous rings. A-4 Proper handling of chemicals and glass tools during diagnosis and identification.

Episodes

Heterogeneous.

for- Course specific skill objectives. for1- Gaining the skill of identifying heterogeneous rings. or2- Gaining the skill of how to detect heterogeneous rings. B-3- Gaining the skill of how to write practical reports.
Teaching and learning methods
-1 Theoretical lectures -2 Practical experiments -3 Scientific research -4 Methodological and supporting books -5 Scientific discussions and seminars
Evaluation methods

Mid-term and final exams.

2. Daily oral and written exams.

.3 Homework

.4 Daily reports .5 Practical laboratory exams

6. Laboratory reports

G- Emotional and value goals

G1- Enhancing the student's understanding through linking the theoretical aspect with the practical aspect, by conducting the detection and study of the chemical and physical properties of heterocyclic compounds and linking this to the drugs containing them.

Those episodesC-2 Enhancing students' ability to think and analyze. C-3 Enhancing students' ability to work as a research team.

G4- Enhancing students' ability to ask objective questions and engage in scientific discussion.

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

ing the skill of dealing with chemicals and glass tools. 2- Acquiring the skill of preparing reports and scientific research.

3- Acquiring skills in chemical diagnosis methods for chemical materials. 4- Acquiring skills in using books and

modern teaching aids.

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week
Exam Oral And my editorial	Lectures	Vehicles Non-membership homogeneous Classify it, Its characteristics And the composition Chemist		5	1-2
Exam Oral And my editorial	Lectures	cyclic compounds The quintet is not homogeneous Its sources And prepare it		5	3-5
Exam Oral And my editorial	Lectures	Interactions cyclic compounds The quintet is not homogeneous		5	6-8
Exam Oral And my editorial	Lectures	cyclic compounds Hexagon is not homogeneous Its sources And prepare it pyridine		4	9-10

Exam **Oral** **And my editorial**	**Lectures**	**cyclic compounds** **The quintet is not homogeneous** **Saturated** **Its sources** **And prepare it**		**6**	**11-13**

Exam Oral And my editorial	Lectures	cyclic compounds The quintet is not homogeneous and Contains two elements		5	14-15

Infrastructure	
nic Chemistry by Robert T. Morrison and rt N. Boyed, latest edition. nic Chemistry by J. McMurry, latest ed., ason learning, CA, USA. Introduction to the chemistry of heterocyclic ound by Acheson, RM latest ed.	Required Course
nic Chemistry by Robert T. Morrison and rt N. Boyed, latest edition. nic Chemistry by J. McMurry, latest ed., ason learning, CA, USA. Introduction to the chemistry of heterocyclic ound by Acheson, RM latest ed.	Return to the main page(Sources)
	he recommended references) Scientific, reports,
	Check the electronic, websites....

Curriculum Development Plan

Adding new topics, preparation methods and interactions to keep pace with scientific progress

The following source is used as a supporting source to enhance the scientific material.:

Rocyclic Chemistry in Drug Discovery: Edited by Jie Jack Li Bristol-Myers bb Company

Biomolecules: Heterocycles and Nucleic Acids: Topic

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. **The program.;**

For Higher Education and Scientific Research	**For educational institution**
Pharmacy-Branch of Pharmaceutical Chemistry	**Scientific name/ The Center**
Non-Organic Pharmacy M	**/ Course Code**
The third	**All available attendance**
The first	**Pray/ year**
Aaaa	**D Study hours(Total)**
	Date this description was prepared
Course Objectives	

Highlighting the biological role of elements, ions

and inorganic compounds. The biological and pathological

effects of essential elements.(Basic) of the body, and the

study of the effects

Water and therapeutic for
non-essential elements of the
body

Study of the atomic composition of radioactive isotopes and the biological, therapeutic and medical effects of their types.
Atomic radiation.

Study of the biological and therapeutic effect of inorganic compounds in the treatment of digestive system diseases
its various medicinal uses

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive

objectives 1- The student's knowledge of the differences in the

biological and pharmacological effects of various elements as

a result of the difference
In the atomic structure of these elements

A2- The student's knowledge of the effective and vital role of the essential (basic) elements of the body and what results from them.
Pathological conditions resulting from changes in the rates of these elements within the body

A3- The student's knowledge of the effective, vital and therapeutic role of some inorganic elements and compounds in
Treatment of various digestive system diseases

A4- The student's knowledge of the effective and vital role of inorganic elements and compounds (electrolytes) inside the human body (in the blood, inside the cells, or in the intercellular fluid) and the effect of increase and decrease on
Body health, how to treat it, and how the body compensates for these elements

for- Course specific skill objectives.

quiring the skill of dealing with chemical compounds capable of forming complex compounds with metals and the optimal use of them as an antidote to treat cases of poisoning with some metals.

for2- Acquiring the necessary skills to deal with radioactive isotopes and their radiation, as the pharmacist is The only person who is proficient in this field

for3- Acquiring the skill of dealing with inorganic chemical compounds capable of treating diseases of the digestive system. Digestive disorders

Acquiring the skill of dealing with the different types of ions and electrolytes present in the body, their natural proportions, how to deal with their increase and decrease, and learning treatment methods.

Gaining the skill of writing practical reports and the correct scientific research method

Teaching and learning methods

1. Theoretical lectures - 2. Practical experiments -3 Scientific research -4 Methodological and supporting books -5 Scientific discussions and seminars 6-Explanatory videos

-7 Daily duties
Evaluation methods

Mid-term exams and final exams. 2. Daily oral exams And written 3. Practical laboratory exams .4 Laboratory and theoretical reports.5 Quarterly and weekly reports
G- Emotional and value goals **G1- Enhance students' ability to predict the effects of elements inside the body.** **G2- Enhancing students' ability to think and analyze. 3- Enhancing students' ability to work as a research team.** **G4- Enhancing students' ability to ask objective questions and engage in scientific discussion.**
D- General and transferable skills (other skills related to employability and personal development). **D1- Gaining the skill to diagnose the beneficial and necessary minerals for the body from the harmful minerals for the body.** **D2- Acquiring the skill in preparing reports and scientific research. 3- Acquiring the skill in using books and modern teaching aids. 4- Acquiring the**

skill in analyzing results and scientific

discussions.

-10 Course Structure					
Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week
Oral and written examination	Lectures	Synthetic formula For atoms and molecules/ Complexities		6	1-3
Oral and written examination	Lectures	Substantial and non-substantial elements with low concentration		5	2-5
Oral and written examination	Lectures	Non-vehicles Organics used in the treatment of digestive disorders		4	6-7
Oral and written examination	Lectures	Non-vehicles Membership used in topical therapy		2	8

Oral and written examination	Lectures	Non-vehicles Membership used in dental treatment		1	9
Oral and written examination	Lectures	Preparations The Radiant		6	10-12

Oral and written examination	Lectures	Non-vehicles Membership used preparations The Radiant		6	13-15

Infrastructure	
anic Medicinal and Pharmaceutical istry by Block, Roche Soine and Wilson, t edition n and Gisvold; Textbook of Organic cinal and Pharmaceutical chemistry; do JN, Remers WA, (eds); latest edition	Required Course
anic Medicinal and Pharmaceutical istry by Block, Roche Soine and Wilson, t edition n and Gisvold; Textbook of Organic cinal and Pharmaceutical chemistry; do JN, Remers WA, (eds); latest edition	Return to the main page(Sources)
	he recommended references) Scientific, reports,
	Check the electronic, websites....

Curriculum Development Plan

The following source is a supporting source to enhance the scientific material.:

Introductions of Inorganic Chemistry, For Students of Pharmacy, Pharmaceutical ces and Medicinal Chemistry by Katja A. Strohfeldt (2015)

Adding a practical and laboratory training course for the student to support the theoretical material in hospitals and private medical centers for treatment
Some diseases

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. **The program.;**

For Higher Education and Scientific Research	**For educational institution**
Pharmacy-Branch of Pharmaceutical Chemistry	**Scientific name/ The Center**
Organic pharmaceutical 1	**/ Course Code**
The third	**All available attendance**
The second	**Pray/ year**
Aaaa	**D Study hours(Total)**
Course Objectives	

Shedding light on the concept of the drug's journey inside the bodyAbsorption, distribution, metabolism, and elimination

Wo

w(Metabolism of

chemical compounds and

drugs)

Factors affecting drug metabolism

n the body Effect of

stereochemicals on metabolism in

the body

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive objectives

A1- The student’s knowledge of all the factors that the drug encounters inside the body (chemical, physical and biological).

The student’s knowledge of

traditional and modern

methods of drug design. A-3

Knowledge of the types of drug

metabolism inside the body. A-

4 Knowledge of the factors that

affect metabolism.

for- Course specific skill objectives.

for1- Acquiring the skill of studying the chemical composition of the drug and the factors affecting it.
medicine inside the body.

for2- Acquiring the necessary skills to make modifications to the chemical composition of the drug in order to develop it and Overcoming weaknesses in his performance inside the body.

for3- Gaining the skill of writing practical reports.

Teaching and learning methods
-1 Theoretical lectures -2 Practical experiments -3 Scientific research -4 Methodological and supporting books -5 Scientific discussions and seminars 6-Explanatory videos
Evaluation methods
Mid-term exams and final exams. 2. Daily oral exams And written 3. Practical laboratory exams 4. Laboratory reports

G- Emotional and value goals

G1- Enhancing students' ability to predict the effectiveness and fate of the drug inside the body.

G2- Enhancing students'

ability to think and analyze. 3-

Enhancing students' ability to

work as a research team.

G4- Enhancing students' ability to ask objective questions and engage in scientific discussion.

General and transferable qualification skills (other skills related to employability and personal development). D-1 Acquiring the skill in studying the chemical composition of the drug and the effects and influences related to it. inside the body.

D2- Acquiring the skill in preparing reports and scientific research. 3- Acquiring the skill in using books and modern teaching aids. 4- Acquiring the skill in analyzing results and scientific discussions.

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	OutputsLearning Required	Hours	The week
Oral and written examination	Lectures	The effect of physical and chemical properties on drug efficacy		20	1-7
Oral and written examination	Lectures	Metabolism of organic compounds and drugs in The body		25	8-15

Infrastructure	
n and Gisvold Textbook of Organic medicinal harmaceutical chemistry, Delgado JN, Remers Eds); 12th ed, 2011.	Required Course
n and Gisvold Textbook of Organic medicinal harmaceutical chemistry, Delgado JN, Remers	Return to the main page(Sources)

Eds); 12th ed, 2011.	
	And the recommended references) Scientific journals, reports, (.
	Check the electronic, websites

Curriculum Development Plan The methodological book Wilson and Gisvold's textbook of organic medicinal and pharmaceutical chemistry Due to the large number of scientific and technical errors in it, or add any of the following sources to enhance the scientific material:: Dav and Lemke L. (Thomas Chemistry Medicinal of Foye's Principles Williams), An Introduction to Medicinal Chemistry (Graham L. Patrick), Name of the semester to Essentials of Medicinal and Pharmaceutical Chemistry

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description.
The program.;

For Higher Education and Scientific Research	For educational institution
Pharmacy-Branch of Pharmaceutical Chemistry	Scientific name/ The Center
Organic pharmaceutical M 2	/ Course Code
Fourth	All available attendance
The first	Pray/ year
Aaaa	D Study hours(Total)
Course Objectives	
Study of the relationship between the chemical composition of compounds and effectiveness)such as some medications used in isorders of the sympathetic system and drugs used in the treatment of disorders of the adrenergic systemPharmacokinetics study within a living organism, including mechanisms of absorption,	

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive **objectives A-1 How to deal with** **chemical compounds A-2** **Knowing the methods of** **manufacturing some** **compounds and medicines** **A-3 Conducting practical experiments to manufacture and purify compounds.**
for- Course specific skill **objectives: B1 - Acquire the skill in** **preparing compounds and** **medicines.** **quiring skills in using different methods in** **manufacturing and preparing medicines.** **3- Acquiring skills in how to deal with** **chemical compounds.** **for-4 Acquiring the skill of writing practical reports**
Teaching and learning methods

-1 Theoretical

lectures -2

Conducting

scientific

experiments -2

Study seminars

-3 Daily duties

-4 Written exams

-5

Methodological

and support

books -6

Explanatory

videos

Evaluation methods
-1 Oral exams -2 Written exams -3 Scientific reports -4 Practical laboratory exams
G- Affective and value-based objectives C-1 Enhancing students' ability and understanding by linking the theoretical aspect with the practical aspect G-2 Enhancing students' ability to think, infer and analyze by asking some scientific questions during the Lectures and discussions3c- Enhancing students' ability to work as research teams and encouraging them to do extracurricular activities.
D- General and transferable skills (other skills related to employability and personal development). D-1 Acquiring skills in dealing with chemicals D-2 Acquiring skills in preparing reports and scientific research D-3 Acquiring skills in using books and modern teaching aids

-10 Course Structure					
Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week

Oral and written examination	Lectures	Medicines used to treat disorders cholinergic system		13	1-4
Oral and written examination	Lectures	Drugs used to treat disorders of the adrenal system		8	5-8
Oral and written examination	Lectures	Housing		10	9-11
Oral and written examination	Lectures	Drugs used for the nervous system		10	12-14
Oral and written examination	Lectures	HormonesSteroidal and non-steroidal Steroid		4	15

Infrastructure	
	Required Course
n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	**Return to the main page(Sources)**

a

n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	he recommended references) Scientific, reports,
	Check the electronic, websites....

a

Curriculum Development Plan
Study of antidiabetic drugs, antiulcer drugs, and cardiovascular drugs to he curriculum with reduction The existing curriculum to allow for the opportunity to add new topics.

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. The program.;

For Higher Education and Scientific Research	**For educational institution**

Pharmacy-Branch of Pharmaceutical Chemistry	Scientific name/ The Center
Organic pharmaceutical V 3	/ Course Code
Fourth	All available attendance
The second	Pray/ year
Aaaa	O Study hours(Total)
	Date this description was prepared
Course Objectives	
Study of the biological action of some neurotransmitters within the human body. Study of the kinetics of drugs within the living organism, including the mechanisms of absorption, metabolism and excretion.	

-9 Course outcomes, teaching, learning and assessment methods

A- Cognitive **objectives A-1 Knowing the** **methods of manufacturing** **some compounds and** **medicines A-2 How to deal with** **chemical compounds** **A-3 Conducting practical experiments to manufacture and purify compounds.**
for- Course specific skill **objectives: B-1 Acquire skill in using different** **methods in manufacturing and preparing** **medicines B-2 Acquire skill in how to deal with** **chemical compounds** **for3- Gaining the skill of writing practical reports.**
Teaching and learning methods
-1 Theoretical **lectures -2** **Conducting** **scientific** **experiments -3** **Study seminars** **-4 Daily duties** **-5 Written exams** **-6**

Methodological and support books -7 Explanatory videos
Evaluation methods

-1 Oral exams

-2 Written exams

-3 Scientific reports -4

Practical laboratory exams

G- Emotional and value goals

G1- Enhancing students' ability to think, infer and analyze by asking some scientific questions during the Lectures and discussions.

G-2 Enhancing students' ability to work as research teams and encouraging them to do extracurricular activities.

G-3 Enhancing students' ability and understanding by linking the theoretical aspect with the practical.

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

D-1 Acquiring skills in dealing with chemicals D-2 Acquiring skills in preparing reports and scientific research

D-3 Acquiring skills in using books and modern teaching aids

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week

Oral and written examination	Lectures	Antidotes Vitality		18	1-6
Oral and written examination	Lectures	Sulfonamide		4	7-8
Oral and written examination	Lectures	Antidotes Cancer		23	9-15

Infrastructure	
n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	Required Course
n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	Return to the main page(Sources)
	he recommended references) Scientific, reports,
	Check the electronic, websites....

Curriculum Development Plan

Study of antifungal and antiviral drugs to the curriculum

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description.
The program.;

For Higher Education and Scientific Research	For educational institution
Pharmacy- Department of Pharmaceutical Chemistry	Scientific name/ The Center
Advanced Medical Pharmacy	/ Course Code
Fourth/Pharm D	All available attendance
The second	Pray/ year

Aaaa	D Study hours(Total)
	Date this description was prepared
Course Objectives	
Study of the relationship between the chemical composition of compounds and the effectiveness of antibiotic drugs Anticancer Agents Students' Body To know the chemical structures of compounds and their relationship to the biological activities of the human body Study of the effect of chemical composition on the clinical effects of drugs. Study of pharmacokinetics within the living organism, ncluding mechanisms of absorption, metabolism and excretion.	

-9 Course outcomes, teaching, learning and assessment methods
A- Cognitive objectives A-1 Knowing the methods of manufacturing some compounds and medicines A-2 How to deal with chemical compounds A-3 Conducting practical experiments to manufacture and

purify compounds.

A-4 Linking chemical and pharmacological information of drugs with their clinical effect.

for- Course specific skill objectives: B-1 Acquire skill in using different methods in manufacturing and preparing medicines B-2 Acquire skill in how to deal with chemical compounds for3- Gaining the skill of writing practical reports.
Teaching and learning methods
-1 Theoretical lectures -2 Conducting scientific experiments -3 Study seminars -4 Daily duties -5 Written exams - 6 Methodological and support books -7 Explanatory videos
Evaluation methods

-1 Oral exams

-2 Written exams

-3 Scientific reports -4

Practical laboratory exams

G- Emotional and

value-based objectives C-1 Enhancing students' ability to think,

infer and analyze by asking some scientific questions during Lectures and discussions.

G-2 Enhancing students' ability to work as research teams and encouraging them to do extracurricular activities.

G-3 Enhancing students' ability and understanding by linking the theoretical aspect with the practical.

G-4 Enhancing students' ability to link chemical and pharmacological information of drugs with clinical effect.

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

D-1 Acquiring skills in dealing with

chemicals D-2 Acquiring skills in

preparing reports and scientific research

D-3 Acquiring skills in using books and

modern teaching aids

-10 Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Outputs Learning Required	The hours	The week
Oral and written en	Lectures	Antidotes Vitality		16	1-8

exa mina tion Y						
Oral exa m	I am free	Antidote s		1	9 -	

	And editing Y	Harms	Cancer		4	15

Infrastructure	
Wilson and Gisvold Textbook of Or medicinal and pharmaceutical chemistry Delgado JN, Remers WA, (Eds); 12th ed,	Required Course
Wilson and Gisvold Textbook of Or medicinal and pharmaceutical chemistry Delgado JN, Remers WA, (Eds); 12th ed,	Return to the main page(Sources)
	he recommended references) Scientific, reports,
	Check the electronic, websites....

Curriculum Development Plan
More clinical aspects of the subject and in a manner that suits the students' specialization

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. **The program.**

For Higher Education and Scientific Research	**For educational institution**
Pharmacy-Branch of Pharmaceutical Chemistry	**Scientific name/ The Center**
Organic pharmaceutical4	**/ Course Code**
Fifth	**All available attendance**
The first	**Pray/ year**
.	**0 Study hours(Total)**
	Date this description was prepared
Course Objectives	
Study of pharmaceutical introductions, their properties, preparation and medical uses **Study the use of computers** **in drug design to learn about the latest**	

9. Course outcomes, teaching, learning and assessment methods.

A- Cognitive objectives

A1- Study some advanced and modern topics in the field of drug design and development. A-2 Identify the strategies adopted to increase the effectiveness of drugs used through
Converting them into primary drugs that are not subject to metabolism or chemical change, which are subsequently converted into
Effective medicine inside the body.

A3-Learn how to use pharmaceutical design programs to discover and develop drugs.

for- Course specific skill objectives: B-1: Identify the work of pharmaceutical design programs.

for2- Focus on educating students on how to benefit from the acquired skills in developing
The scientific and academic side.

Teaching and learning methods

-1 Delivering theoretical lectures -2 Interacting with students and giving them the opportunity to ask and discuss questions

-3 Homework

-4 Written exams

Evaluation methods
-1 Daily oral assessment -2 Written exams -3 Viewing students' scientific reports
G- Emotional and value-based goals C-1: Knowing the methods of designing drugs and chemical compounds **G2- Learn how to take advantage of chemical changes to increase the effectiveness of the drug.**
D- General and transferable skills (other skills related to employability and personal development). **D1- Using computer programs to design drugs.** **D2- Working to increase the student's self-confidence to become a qualified pharmacist to join the labor market.** **D3- Enhancing students' ability to think independently and how to solve problems they may face in the future.**

10. Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week

Oral and written examination	Lectures	ConceptsBasic Pharmaceutical Introductions		6	1-3
Oral and written examination	Lectures	IntroductionsPolymeric pharmaceuticals		6	4-6
Oral and written examination	Lectures	Targeted drugs		4	7-8
Oral and written examination	Lectures	Study of drug design and development using epigenetics Quantitative		4	9-10
Oral and written examination	Lectures	UseComputer in drug design		10	11-15

nfrastructure	
n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	Required Course
n and Gisvold Textbook of Organic cinal and Pharmaceutical chemistry, do JN, Remers WA, (Eds); 12th ed, 2011	Return to the main page(Sources)

a

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	he recommended references) Scientific, reports,
	Check the electronic, websites....

Curriculum

development plan Replace some hours with a subjectCombinatorial

Chemistry with Molecular Topic Mod because of the importance of the second topic in knowing how to design effective chemical compounds Pharmacokinetics and prognosis Pharmacy using advanced electronic programs.

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description.
The program.;

For Higher Education and Scientific Research	For educational institution
Pharmacy-Branch of Pharmaceutical Chemistry	Scientific name/ The Center
Advanced Pharmacy M	/ Course Code
Fifth	All available attendance
The second	Pray/ year
Aaaa	O Study hours(Total)
	Date this description was prepared
Course Objectives	
To learn about the principles of spectrum To learn about the different types of spectrum((UV-Vis and (mass) (NMR) and (IR) Uses of spectra in the identification of organic compounds to train on	

9. Course outcomes, teaching, learning and assessment methods.

A- Cognitive objectives

A1-Using the ultraviolet spectrum in the diagnosis of organic and pharmaceutical compounds:

This technique is used to identify the presence of double bonds in an organic compound.And knowing the existence of the sequence as well as identifying the type of bonds, and the existence of the active groups, as this technique is useful in identifying the existence of chromophore groups such as (N=N, C=O, C=C)
And oxychrome like) X, NH, OH (and their locations in the organic compound molecule.

A-2 Using infrared spectra in the diagnosis of organic and pharmaceutical compounds: in a way that determines the type of active groups and the type of substituted groups and if there is any factor that reduces stability and other influential factors. Knowing the absorption areas of common active groups and its applications in chemistry.
MembershipThis technique is useful in identifying the presence of effective groups such as groups [COC, OH….ext, NH2, C=O, [NO.] It is also useful in identifying the type of aliphatic organic compound.
AromaticIt is also useful in identifying the type of CC bond: single, double, triple.

A-3 Using NMR spectroscopy in the diagnosis of organic and pharmaceutical compounds: It is considered a highly accurate and specific technique for the chemical structure through the study of the 1H proton as well as 13C.

A-4 Using mass spectrometry in the diagnosis of organic and pharmaceutical compounds: The main purpose of this The technique is to determine the molecular weight of an organic compound.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 helps by knowing the preferred site for breaking by knowing the chemical composition of the compound, whether it is a compound
n or extract from plants such as: Hydrocarbons, aldehydes and ketones, carboxylic acids and their derivatives, amines, alcohols and phenols.

A-5 Use all these spectra to identify an unknown organic compound by performing the following techniques:

The above four help in arriving at the exact composition from among the set of possibilities..

for- Course specific skill

objectives: B-1 Knowing the formulas of some unknown organic compounds based on their spectra.

for2- Gaining the skill of how to identify effective groups in chemical and pharmaceutical compounds.

for-3 Acquiring the skill of how to infer the influencing conditions in terms of the type of groups.
The compensation, whether it is a puller or a pusher of electrons and others.

for-4 Acquire the skill of how to link the results obtained from the application of different spectral methods and
How to 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 methods mentioned on chemical compounds and preparations. Pharmaceutical -3 Showing practical videos to help understand the material and gain the skill. -4 Using methodological and supporting books -5 Holding scientific sessions in the form of discussions or study groups
Evaluation methods
Mid-term exams and final exams - 2 - Daily oral exams 3- Written seminars (seminars) -4 Practical laboratory exams 5- Laboratory reports

G- Emotional and

value-based objectives C-1 Enhancing the student's

understanding by linking the theoretical aspect with the practical

aspect, by conducting examinations on the materials.
And conduct an analysis of the results to reach the correct composition of the compound..

G-2 Enhance students' ability to think and analyze: All these spectral devices give us an image of the organic and pharmaceutical compound, where from this spectrum image, information can be collected to identify the molecular and structural formula of the organic compound. This spectrum represents a study of the interactions between the radiation energy within the electromagnetic spectrum and the organic molecule and the changes that will occur to the molecule when exposed to
For radiation, which can be represented by

absorption beams, signals, etc.C-3.

Enhancing the application of the idea of

teamwork among students as a research

team.

G-4 Enhancing students' ability to communicate intellectually, ask objective questions and discuss.
Scientific

G-5 Graduating highly qualified and professional pharmaceutical cadres.

Teaching and learning methods

-1 Theoretical lectures **-2 Practical experiments** **3-Explanatory videos** **-4 Scientific discussions through study groups or asking questions.**
Evaluation methods

1 Conducting mid-term and final exams -2 Daily oral and written exams -3 Practical laboratory exams (practical-practical and theoretical-practical) 4- Laboratory reports 5- Conducting seminars (seminars)
D- General and transferable skills (other skills related to employability and personal development). D-1 Acquiring the skill to deal with chemicals, glassware and laboratory equipment. Acquiring skill in methods of chemical diagnosis of substances using spectroscopic methods. D-3 Acquiring the skill in writing scientific reports and research D-4 Acquiring skills in using books, modern teaching aids and various electronic websites.

10. Course Structure

Evaluation met	Teaching met	Unit Name/or topic	OutputsLearning	Hours	The week

hod	**hod**		**Requi red**		
Exam **Oral** **And my editorial**	**Lecture s**	**Use of ultraviolet rays** **Violet to detect** **Vehicles and identification** **On it**		**6**	**1-2**

Oral and written examination	Lectures	Using infrared to detect and identify vehicles On it		14	367
Oral and written examination	Lectures	Using magnetic resonance to detect and identify vehicles On it		12	8-10
Oral and written examination	Lectures	Using mass measurement to detect and identify vehicles		11	11-14
Oral and written examination	Lectures	Element analysis		2	15

Infrastructure	
trometric identification of organic pounds by Silverstein, Bassler and Morrill Cations of absorption spectroscopy of organic ounds by Dyer JR. nic Chemistry by McMurry; 5th; Thomason in CA, USA 2000.	b Required Course

trometric identification of organic pounds by Silverstein, Bassler and Morrill Cations of absorption spectroscopy of organic ounds by Dyer JR. nic Chemistry by McMurry; 5th; Thomason in CA, USA 2000.	Return to the main page(Sources)
	Recommended scientific references, reports,
	Check the electronic, websites....

Curriculum development plan to expand the curriculum and introduce broader application areas in line with scientific developments

Course Description Form

Course Description

This course description provides a concise summary of the main features of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he has made the most of the learning opportunities available.It is necessary to link it to the description. The program.

Pharmacy	Educational Institution

Clinical	**Scientific name/ The Center**
M	**/ Course Code**
And my work	**All available attendance**
The second/ **Second stage** **Second / Third** **stage** **First and second/ The fourth stage** **First and second/ Fifth stage**	**Pray/ year**
Total study hours270 distributed over 10 courses	**D Study hours(Total)**
13-11-	**This description was prepared by**

The decision is made:

The student, through the clinical pharmacy branch, is accustomed to studying most of the disease cases...Whether it s and how to deal with it in private pharmacies..or the most difficult referrals and how to deal with it by diagnosis by the medical team...in addition to developing communication skills

9. Course outcomes, teaching, learning and assessment methods.

A- Cognitive

objectives A-1 Study simple diseases and

how to deal with them in the pharmacy

A2- Study of various diseases (causes, symptoms, diagnosis and treatment)

A-3 Study

communication skills A -4

Study the ethics of the

pharmacy profession A -5

Study the basics of

pharmaceutical economics

A -6 Study the basics of

pharmaceutical monitoring

for- Course specific skill objectives

for1- Practical applications simulating pharmacies (virtual pharmacy) B 2- Applied courses in private and government pharmacies

for3 - Practical courses in hospitals

Teaching and learning methods
Using lectures by talking to students, using PowerPoint slides, the blackboard, and educational laboratories **Special**
Evaluation methods
Theoretical and practical exams, in addition to classroom activities and scientific seminars.
G- Emotional and **value-based objectives C-1** **Increasing self-confidence** **through learning** **2 Sensing the importance of the role** **played by the pharmacist in serving** **patients. -3 Instilling the important** **ethical values of the pharmacist in his** **practical life.**
Teaching and learning methods
By providing theoretical, practical and applied lectures.

Evaluation methods

Theoretical and practical exams, in addition to classroom activities and scientific seminars.
D- General and transferable skills (other skills related to employability and development) **Person** **al1- Presenting** **research at** **conferences.** **D-2 Graduation projects** **D3-Community participation**

10. Course Structure

Evaluation method	Teaching method	Unit Name/or topic	Required learning outcomes	Hours	The week
Exams Theory	Theoretical	Communication skills	Learn skills Communication	2 hours a week	
Exams Theory	Theoretical	EthicsPharmacy	Knowledge of the ethical system governing	one hour Weekly	

			the work of the pharmacist		
Exams Theory and practical application	**Theoretical and practical**	**Clinical Pharmacy**	**Disease knowledge And its treatment**	**2 hours a week (Course)**	

Exams Theory	Theoretical	Treatments	Knowledge of diseases And its treatment	Three hours Weekly (First course..) 2 hours N Weekly(Course Second)	
Exams Theory And practical application	Theoretical and practical	Pharmaceutical monitoring	Maintain Drug concentration in blood within the level Therapeutic	2 hours a week	
Exams Theory	Theoretical	Pharmaceutical economics	Knowing the ways Calculate the cost of the	2 hours a week	

			operation Therapeutic		
Practical applications with exams Theory	Practical	Hospital training	Knowledge of diseases Its treatment and symptoms	2 hours a week	

11. Infrastructure

harmacotherapy a pathophysiological approach, applied clinical pharmacokinetics, mmunication skills in pharmacy practice, pharmacy law and ethics, essential of Pharmacoeconomics	Required Textbooks
Methodological books	Main References(Sources)
Pharmacy times (journal) Us pharmacist (journal	and recommended eferences(Scientifi c journals, reports, etc.)
EncyclopediaElectronic Uptodate	Electronic collection, websites,.....

.12 Curriculum Development Plan
Expansion in the field of e-learning